

UNIVERSITY OF NIŠ



ISSN 0354-4699 (Print)
ISSN 2406-050X (Online)
COBISS.SR-ID 87230727

FACTA UNIVERSITATIS

Series
ECONOMICS AND ORGANIZATION
Vol. 11, N° 4, 2014



Scientific Journal **FACTA UNIVERSITATIS**
UNIVERSITY OF NIŠ

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Published by the University of Niš, Republic of Serbia

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Financial support: Ministry of Education, Science and Technological Development of the Republic of Serbia

Printed by "UNIGRAF-X-COPY" – Niš, Republic of Serbia

ISSN 0354 – 4699 (Print)
ISSN 2406 – 050X (Online)
COBISS.SR-ID 87230727

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SERIES ECONOMICS AND ORGANIZATION

Vol. 11, N^o 4, 2014



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3. Malinić S. The modern accounting system – the answer to the challenges of the environment, enterprise and management, 40 godina računovodstva i korporativnih finansija: 1-11, Zlatibor, AAAS, Beograd.
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COMPLEMENTARITY BETWEEN THE MARKET AND THE STATE AS A FACTOR OF MODERN MARKET ECONOMY EFFICACY: LESSONS FOR REPUBLIC OF SERBIA

UDC 338.242(497.11)

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Abstract. *Market economy is explained as a system characterized by private ownership and a self-regulating market mechanism which enables the coordination of the activities of economic actors. A thesis that only private entrepreneurship ensures economic prosperity is developed based on this concept, given that economic growth is directly determined by the degree of freedom of economic agents. With no intention to challenge the role of the market mechanism, private entrepreneurship and economic freedom, the author, rather, aims to bring to attention the existence of objective factors which in terms of the functioning of modern market economies introduce the need to establish cohesion between the market and the state, as well as the relevant coordination and control mechanisms. This view is based on the experience of the most developed market economies which have achieved their development goals largely owing to an appropriate symbiosis and complementarity of the market and the state. Accordingly, the aim of the research is to, based on different theoretical concepts and economic reality of modern market economies, underline the necessity that the Republic of Serbia should face the reality regarding the creation of its economic system that both the market and the state would be more successful once the complementarity is established.*

Key Words: *market, state, coordination of economic activities, economic performance, complementarity between the market and the state.*

INTRODUCTION

The ongoing trends concerning the functioning of modern economies, as the causes and consequences of the global economic crisis, primarily give a good reason for reconsideration of theoretical viewpoints, as well as practical experience relating to different ways of organizing and functioning of an economy. In accordance with the Latin

Received November 12, 2014 / Accepted March 25, 2015

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maxim that repetition is the mother of all learning and the position of P. Krugman [2012] that there is a good reason why the old books are back in fashion, we consider it necessary to reconsider the key questions referring to the position and the role of the market function and the allocation and coordination function of the state in the modern economy. Given the fact that the concepts of neoliberalism, extensive privatization and deregulation steered the economy into the vortex of the economic crisis - the greatest one after the Great Depression, it is necessary to, instead of addressing the causes of the crisis, create sustainable models of development that will result in improving economic dynamics, such as creation of new job opportunities. At the same time, this implies that, as indicated by P. Krugman [2012], the primacy of “destructive conventional wisdom” should be dismantled and arguments supporting expansionary policy offered; this policy is to be implemented in order to successfully overcome depression. In accordance with this approach, the attention is again given to the role of the state, which was considered undesirable in the period when the neoliberalism was the most influential concept.

Without questioning the role proven in practice related to the self-regulating market mechanism, economic freedom, individual entrepreneurial initiatives and autonomy of the individual economic agents, the need for the state to play a more prominent role is undeniable, not only in terms of protection of general and long-term interests, but also in terms of an essential factor that would be a driving force and a catalyst for rapid economic growth. This implies the need to discuss the interactions between the state and the market, not only from the standpoint of their confrontation and interpretation of state regulations as a “disruptive” factor in the functioning of the market mechanism, but also in terms of their mutual co-operation, i.e. a situation where a market system has a greater need for the presence of a state with its control and coordination mechanisms. This standpoint is supported by numerous arguments in favor of the fact that even in developed and efficient market economies, the implementation of effective state regulation in the economy of a particular state is fully justified and we can even say necessary. Moreover, the economic history provides sufficient arguments that the state is a crucial factor in the economic development, as evidenced by our extensive experience; it is in the most developed market economies where appropriate symbiosis between the state and the market made it possible to most fully accomplish their set development goals. At the same time, the most developed market economies, instead of allowing a conflicting relationship between the market and the state, foster that of a true partnership between the public and the private sector [Mesarić, 2001].

The concept of mutual dependence between the market and state, as well as between the allocative and coordination mechanisms, as the *main point* discussed in this paper, is *examined in order* to highlight the following key aspects distinctive for this concept:

- Synthesis of the self-regulating market mechanism and the relevant state legislation is one of the vital features of modern market economy;
- Regarding the extremely averse positions of the market and the state, there are a number of viewpoints that point to the possibility of combining liberal and interventionist conceptions;
- The shape, the scope and the methods of state intervention in economic sphere change with the development of the economy and the society, especially concerning the increased complexity of economic interaction;

- Complementarity between the market and the state is essential for the successful functioning of the modern market economy.

These are the *hypotheses* that will be tested in order to substantiate the necessity of objectification of mutual interaction between the market and the state in modern market economies:

H1: Bearing in mind that the coordination of economic activities is achieved through the market and the state as separate institutions, they need to be considered as equal, complementary and mutually dependent components of a single coordination mechanism.

H2: Bearing in mind that the coordination of economic activities is achieved through the market and the state as separate institutions, they need to be considered as equal, complementary and mutually dependent components of a single coordination mechanism.

Research *methodology* employed in this paper in examining the key aspects of the interaction and complementarity between the market and the state, as well as their implications for the level of success in terms of achieving the economic tasks, is primarily that of analytical description.

1. BASIC THEORETICAL CONCEPTS ON THE RELATIONSHIP BETWEEN THE MARKET AND THE STATE

There is a long tradition of economic concepts which consider that the only valid role of the state in the economy is the one that defines and enforces property rights and provides public goods, while any other form of government regulation is inevitably inefficient, unnecessary and counterproductive. Namely, it is believed that the state is unnecessary, because all the things the state can do are much more successfully done by the private sector. Therefore, a unilateral assertion that the private sector, due to clearly defined property rights, will always solve all problems more efficiently is established. In doing so, the fact that the existence of institutions that grant property rights, secure contract enforcement and availability of complete information as a precondition for the existence of an efficient market, is overlooked since this requires the active involvement of the state. At the same time, successful economic growth has, in most cases, been accompanied by high levels of state intervention, which represents a powerful counter-argument to the aforementioned general point of view. In other words, the key determinant for the success of economic activities is determined by the existence of an institutional environment favorable for the stimulation and realization of these activities. In this regard, it is important to point to the fact that the institutions cannot be established and developed in an environment where the influence of the neo-liberal model is dominant. The opposing views discussed above require taking a brief review of the different positions related to allocative and coordination mechanisms that are present in some of the most influential contemporary economic theories.

In terms of the neo-liberal concepts, the dominant view is that, in principle, it is not possible to include the state and the market in a particular coordination mechanism given that the state and the market represent mechanisms that are mutually exclusive. The market is considered to be a part of the economic system whose mechanism is based on

incentives and sanctions that are implemented by means of competitive struggle, while the state is seen as an element of the political system, which is why the coordination of economic activity is exercised by political rather than economic instruments [Гутник, 2002]. This leads to the conclusion that administrative coordination objectively cancels market coordination. Thus, for example, В. Рёнке [2002] starts from the premise that the task concerning the coordination in each particular case can be solved by prices or by the operation of state authorities. Between the price, as a market category, and the work of state bodies, coordination is impossible, thus a state of chaos arises. Accordingly, it is considered that the economic order can be maintained, either by the market, or by coordination through planning and directives. There is no third option. Such a rigid position on the market and the state (to a greater or a lesser degree) is typical of the majority of the modern economic science approaches, as a result of the dominant influence of neoliberal concepts.

Influenced by the neoliberal concepts, the hypothesis is formed which assumes that the market represents a basic coordination mechanism in terms of economic interactions, while the state, as a part of the political system, complements the market only to the extent to which the market itself is unable to fulfill its functions. However, neither the fundamentally different methodological approaches, nor ideologically opposed positions relating to solving many economic problems, prevent the theoreticians to arrive to the same conclusion: in a particular economy, state implements those actions which cannot be realized by the market in its highest efficiency. In fact, given the position that the market is fully effective only under certain, rather, restrictive assumptions, the main themes of the scientific debates are often appropriateness, scope, forms and methods of state intervention in the economy, without doubting the very principles of uniting the market and state coordination [Leković, 2006].

The state, as a subject of regulation, is present only because the market is unable to solve a certain problem in its functioning by employing its mechanisms. Here, we refer to *market failures*, which reduce the efficiency of coordination performed by self-regulating mechanisms and point to the inability of the market to achieve Pareto efficiency. Accordingly, the general principles of the functioning of the state in the economy are determined by the type of market coordination [Абалкин, 1997]. This approach is also typical of the representatives of other schools of economic thought, with the exception of those who support the concept of direct influence of the state on the economy. F. Hayek [1967] leaves the state out of economic interactions because the market, with its systems of competition and free price formation, is capable of self-organizing economic activity. In this process, each individual has information on prices, which is characteristic of the system as a whole, and at the same time, thanks to the personal knowledge of the actual situation, has the ability to be integrated into the overall system and to take measures that would allow him/her to generate maximum profits. On the other hand, by its intervention in the economy, the state distorts price signals and, consequently, impairs spontaneous order. Therefore, the state is considered as an element of the political system which is essential to facilitating the functioning of markets and, through legal mechanisms, ensuring compliance with the specific rules. Accordingly, F. Hayek emphasizes that the spontaneous order establishes itself due to the universal rules of conduct that protect private ownership. In such a system, it is necessary that the primary function of the state is limited to the control of these rules.

The supporters of the ordoliberalism (compared to the views of the supporters of the neoliberalism) point to the need for greater participation of the state in regulating economic interaction. According to П. В. Гутник [2007, 9], the representatives of this school of economic thought believe that it is unrealistic to reduce the role of the state in the economy only to the regulatory function, i.e. support to the business conduct rules. The role of government is fundamentally different and is manifested in the creation of rules, as well as in amending such rules when they cease to be effective. The corrective role of the state is accentuated, given that the market is not able to achieve its coordinating role without appropriate rules that are provided and rectified by the state. In fact, the distortions in economic processes are caused by the external factors that cannot be addressed by the market system itself, therefore the support of the state is indispensable.

However, according to Post Keynesians, the basic role of the state cannot be reduced merely to eliminating the negative externalities and monopolies. The role of the state is reflected in the enforcement of the warning or real coercion, in order to enable fulfillment of contractual obligations, i.e., the state is liable to ensure their implementation. As И. Розмаинский [2010] warns us, if there were not for such a role of the state, the confidence in the contract enforcement would be lost, hence forcing the economic agents to avoid entering into contracts, which brings into question the direct role of the market. Hinting at those economists who support the views of politicians who oppose higher spending saying that the government cannot create jobs; P. Krugman [2012] points to the need to address the functioning of the economy based on the evidence, not prejudice, bearing in mind empirical studies that have confirmed the effects of changes in government spending. Namely, the increase in government spending generates economic growth and hence creates new jobs, which explicitly means that the state represents an indispensable factor in the economic performance and success of the market economy.

The analysis of the relationship between the state and the market in terms of institutional economy includes viewpoints of the theorists who belong both to traditional institutionalism and new institutionalism (neo-institutionalism). As far as the traditional institutionalism is concerned, the state is seen as an institution that develops and provides general rules in order to increase prosperity and justice. In accordance with the methodological individualism, as the methodological approach of the traditional institutionalism, it is considered that the state should be included in the economy in order to facilitate the efficient functioning of the market. Regarding new institutionalism, the state is analyzed as the creator of formal rules and the guarantor of their enforcement, therefore a theory is developed which sees the state as an organization that brings together economic actors who seek to influence political decisions with a view to maximize personal gain. However, this approach fails to examine the market and the state as institutions of coordination; rather, it supports the approach characteristic of the neoclassical understanding of the functions of the state which is based on the concept of market failure: high transaction costs relating to the protection of property rights and competition, establishment of the information exchange channels, provision of public goods, etc.

The main problem the neo-institutional analysis is concerned with is how to restrict the power of the state, or, as O. Williamson [1985] puts it, to provide citizens with an appropriate set of *ex ante* protection against the possibility of *ex post* opportunism of the state. Analytical concepts dealing with the property rights, transaction costs and contract theory are very useful in terms of their application to the state. D. North [1981] sees the

state as an organization that possesses comparative advantages in terms of coercion. In other words, the state is the guarantor of the system of economic relations as it applies coercion along with other forms of economic activity.

In this way, the economic role of the state is that of regulating the economy as a unified system. On the one hand, it supports the functioning of the market mechanism; while on the other hand, the state corrects its functioning and eliminates negative consequences. It can be said that the major disagreements arise on the extent of government intervention in the economy; however, the prevailing position is that the state is obligated to act primarily concerning the different incidents of social failure. This is the generally accepted practice worldwide regarding the utilization of state property.

Therefore, it is safe to conclude that the main schools of modern economic thought consider the market and the state as belonging to the different sectors of society and therefore in opposition to one another. The market is seen as belonging to the economic sphere, while the state is seen as a part of the political system. Hence, their roles are interpreted as mutually compensating one another, whose polarities are different - economic principles of the market and political principles of the state authorities. Such an understanding simplifies the socio-economic reality, which is characterized by complexity, dynamism, comprehensiveness and equivocalness, which represents a significant risk in practice, since this opens the door to the possibility that each side is reduced to an unjustified minimum.

2. WHY IS THE STATE NECESSARY IN THE MODERN MARKET ECONOMY?

The analyzed theoretical approaches referring to the relationship between the market and the state rules provide an opportunity to make certain generalizations. Clearly, the point is to provide an answer to one of the key economic and social issues: how to organize the economy and the society in order to make better use of available resources? The answer to this question largely depends on the manner in which the relationship between the state and the market elements is established when making economic decisions. Not denying the fact that the market makes the most efficient mechanism of economic decision-making and allocation of the factors of production, one should take into consideration the fact that modern economies function as a combination of market and state regulation [Leković, 2006]. However, despite this reality, there are still dilemmas both in economic theory and economic practice about the character and the degree of state participation in the economy and its interference regarding the functioning of the market. The often neglected fact is that the state, as the creator of institutional arrangements in the economic system and the creator of instruments and measures of economic policy, has the responsibility for the performance of the economy as a whole, as well as the creation of a favorable environment in which the business entities operate. In this regard, it is necessary to establish such a role of the state that will not diminish the facilitating function of market competition, regulation and allocative mechanisms of the market, freedom, initiative and creativity of individuals and economic entities. Rather, the state should initiate, coordinate, direct and support the activities of autonomous economic entities to fully develop their entrepreneurial potential. In other words, the essential role of the state is that of a catalyst and an assistant, motivator and a helping hand of the private sector. This means that the role of the state is seen as a complement to the functioning of the market mechanism when this market mechanism is unable to solve the

economic problems adequately by itself. After all, the overall socio-economic development in the world in the 20th century has shown that we need an effective state that will support sustainable economic development and have a major impact on the economic and social well-being.

In search of the concept of a desirable relationship between the market and the state, it is necessary to start from the position that the state regulation does not replace the market mechanism - it supplements it. The lack of competitiveness in certain segments of the market is the main reason for the application of state regulations. In other words, the function of the state is to improve the functioning of the market mechanism. This function will be best achieved when complementarity is established between the market and the state. The concept of complementarity is based on the view that the coexistence of two or more constituent elements of a given system contribute to improving the performance of each particular element thanks to the mutual complementary relationship [Hall & Soskice, 2001].

When formulating a position on the relation between the market and the state, it is necessary to bear in mind that the economy is only one of the important constituent elements of a unique social organism whose components are closely connected. Therefore, when considering the relevant issues of socio-economic development, it is essential to equally treat actions, reactions and mutual relations of the basic actors - the government and the economy, as well as their contribution to achieving the goals of the society. Their interaction usually follows the following scheme: the state stimulates and regulates the economy and, at the same time, supports the organization of the society; the economy determines the possibilities and potential of the state and provides a clearer definition and achievement of the economic interests of society. In fact, although the self-regulating function of the market is irreplaceable in terms of business processes and motivating efficient operations of business entities, it is essential that the market is regulated; however, at the same time, measures of regulation and control must rely on the market mechanism, as well as neutralize adverse effects of the spontaneous operation of this mechanism. The most frequent, as well as the largest mistake that the state can make concerning the industry is to create policies that allow static, short-term benefits, since in this way innovation and economic dynamism are unintentionally hindered [Porter, 2008]. In its role as a catalyst and an instigator, the state should support companies that are struggling to raise the level of competitive advantage. Regardless of the fact that the government (state) does not create competitive sectors, since this can be done only by companies, it contributes to this goal by creating an environment in which companies can gain competitive advantage.

Taking into account the integrative relationship between the state, the society and the economy, O. Bogomolov [2010] indicates that the state in the economy is affected by the leading ideological doctrines: the state of social awareness, government policy, political orientation, professionalism and efficiency of the administrative apparatus and the legal responsibility of democratic institutions. In accordance with these relations referring to the state and the economy, i.e. the market, the reasons why the modern market economy cannot function successfully without the establishment of an effective mechanism of complementarity with the state are quite clear.

The neoliberal concepts insist on the view that it is only possible to make rational economic decisions under the conditions of unrestricted, free market, availability of complete information on all consumer preferences and knowledge of the demand and supply. However, the reality of the functioning of the market shows that the market cannot

successfully perform its regulatory role, since the information provided is incomplete and not equally available to all economic actors. B. Greenwald and J. Stiglitz [1986] show that free market cannot effectively perform its regulatory role since the information that it provides is incomplete and not available to all economic actors. In this respect, although the market mechanism is irreplaceable in terms of the self-regulation of economic processes and motivation of economic agents for effective and efficient operations, it is necessary that this mechanism, due to its limitations, is aided by the state in its corrective role.

By imposing the neoliberal development model as the only option, it is often ignored that in modern conditions there are other models of economy in which the state has a significant regulatory role. In this regard, the Report of UNCTAD [2009] entitled *The Global Economic Crisis: Failures and Multilateral Remedies*, given the state of the economies of the leading Western countries and the world economy as a whole, emphasizes that the “market fundamentalist laissez-faire of the last 20 years has dramatically failed the test “. According to this view, in order to overcome the problems that are the result of the systemic failures, it is necessary to review and even abandon key neoliberal viewpoints which enabled the full financial deregulation, which led to the global economic crisis due to proliferation of currency speculation.

In terms of the model that successfully fused both market and state regulatory and coordination mechanisms, one should mention the experience of the Scandinavian countries where the social orientation of the economy and government policy achieve very successful results over a long period of time. In this respect, L. Thurow [1997] emphasizes that the welfare state was not implemented by “wild leftists”, quite the opposite, its creators were learned aristocratic conservatives (Bismarck, Churchill, Roosevelt), who adopted the policy of social welfare, not to destroy, but to save capitalism.

Critics of the state's role in the economy believe that such a role is inefficient, due to the incompetence of its officials and the fact that it is too bureaucratic and corrupt, therefore the decisions made by the state cannot be considered objective. Although the author agrees with the above mentioned positions, he also wishes to point to the question whether the issues about the relationship between the state and the market are approached by taking into consideration comprehensive and objective assessments in respect to the market system. Namely, are the market participants infallible in their operations? People often fail to notice that private businesses that seek to increase their profits are also associated with numerous cases of business malpractice, tax evasion and evasion of other liabilities and even criminal activities. Therefore, as O. Bogomolov [2010] rightly points out, the dilemma between the free market or state control and involvement in the functioning of the market system is artificially imposed. Instead of this dilemma, it is necessary to establish an economic system where these two control and coordination mechanisms will be complementary and in function of successful operation and functioning of the economy and the state. In such a system, the state will contribute to creating a business environment that will be favorable for economic actors and will positively influence increase in both domestic and foreign competitiveness by creating an institutional environment and providing efficient management. At the same time, the task of the state is to support domestic economic actors in order to help them gain competitive ability for more equal participation on the global market. This approach is typical for the most developed market economies, and there is no reason to impose different business models on developing countries and economies in transition.

Given that the market is not able to establish and maintain economic balance, periodic recessions and crises are inevitable, the most serious consequences of which are the mass unemployment and the increase in economic and social inequalities. In addition, it is necessary to bear in mind that the pronounced liberalization preceded majority of the crisis, i.e., the functioning of unregulated or insufficiently regulated market. At the same time, given that the market is controlled by its strongest actors, it cannot have the role of an imaginary mechanism through which prices send signals that are the basis for making rational economic decisions by the economic actors. In this regard, government intervention in the economy is indisputable due to the economic, social and political realities of modern economies, since market coordination can be successful only if complemented by the state regulation [Hoff & Stiglitz, 1999]. Government intervention does not extrude market leverage, but protects competition and at the same time safeguards the interests of society. State regulatory rules complement self-regulation of the market, thereby creating the conditions to achieve optimal use of available resources and to enable sustainable economic growth. "The visible hand" of the state needs to be introduced in circumstances where "invisible hand" of the market fails in terms of resource allocation.

The attitude towards inflation is quite an interesting one, as it represents one of the most common phenomenon and indicator of macroeconomic instability. Typically, in accordance with the monetarist approach, inflation is explained as the phenomenon that is the result of disparity between the money supply and the real resources. In accordance with these interpretations, the restricting of the money emissions and limiting credit creation is recommended, thus sterilizing the money supply. What is overlooked is that inflation may be a result of rising production costs, due to the growth of raw material prices, higher wages, more expensive imports, etc. Also, the price increase is affected by various monopolistic agreements, inflationary expectations, tax burdens, political instability, and the degree of confidence in the stability of the economic system. Considering the aforementioned possible causes of inflation, it is necessary that the implementation of the anti-inflation program includes different methods whose creator and proponent is the state. The most effective way for establishing and maintaining price stability in the long-term is to stimulate the production and supply of domestic goods and services. The state is an important factor in stimulating the implementation of this economic strategy.

As one of the critics of the neoliberal doctrine, L. Tarrow [1997], contrary to the traditional interpretation of inflation, considers that there is no empirical evidence that moderate inflation has a negative impact on economic growth, i.e., the negative correlation between the inflation and rapid economic growth has not yet been verified. As an illustration of this viewpoint he mentions Japan, where, despite the high inflation rate, successful economic growth and development has been achieved. Tarrow's position is that growth is not hindered by inflation, but the government measures that imply restrictive monetary policies implemented in order to fight inflation. The consequence of the recession is the growth of unemployment. The people who have lost their jobs are left without income, therefore they do not have any benefits from price stability, but rather, they become victims of monetarist measures to curb inflation. Inflation has negative effects only when it grows into hyperinflation and it is when speculative businesses become more profitable than legitimate ones.

Concerning the issue of unemployment, the position of the neoliberals is that unemployment rate is high because people do not have proper qualifications for the jobs that

are offered. In this way, the responsibility for the situation of high unemployment is shifted from the state to the economy and the unemployed people. However, if this position is correct, the question is why the workers possessing required qualifications are not employed. The conclusion is that the problem is not in qualifications of workers seeking employment, but in fact, according to Krugman [2012], here we have the economy crippled by insufficient demand, in which the entire private sector is trying to spend less than it earns and the result is lesser income. By comparing an economy that is in crisis with a car that cannot start because its battery is empty, the author emphasizes that the problem is not in the economic machine, because it is as powerful as ever. This is a technical problem of organization and coordination. As Krugman [2012] puts it: "solve this technical problem and the economy will roar back into life". The solution to this "technical problem" is in higher government spending whose effects have been verified by empirical economic research.

In addition to the inability to maintain macroeconomic stability, which is why the cyclical recession becomes an inevitability of the market system, the market mechanism creates disparities in the distribution of income. According to J. K. Galbraith [1995], free operation of the market mechanism inevitably leads to unjustified inequality in income distribution. This leads to distortion in the exploitation of resources by "diverting them from *meeting the necessary needs of the majority* to satisfying the *most esoteric needs of minority*". The market, in this way, instead of rewarding differences in abilities and work output undermines the economic and social stability. To ensure that these deviations caused by the market distribution could be corrected, and in order to establish social equilibrium, it is necessary to progressively tax luxury products and to increase the supply of public goods and services. The implementation of these measures which target the distortions caused by the free operation of market mechanism requires an active role of the state. As an indicator of state intervention in the distribution of national income, the experience of developed market economies can be mentioned where the share of the state budget in GDP ranges from 35% to 60%.

Investments are one of the most important issues of every economic system. With this in mind, J. M. Keynes [1987] warned even before the Great Depression that important issues such as deciding on the level of savings and investments cannot be left to private initiative. Given that the investments represent the requirement for the economic growth and development, it is essential that the economy creates a favorable environment that will motivate investors to invest capital. This environment is not created by the economic actors; it is the result of rules by which economic activity takes place, i.e. institutional environment. The responsibility for creating such an environment and granting of its functioning lies with the state. If the state is effective, if the bureaucratic procedures are performed without hindrance and if the political stability is present, investors have confidence in the legal and economic system, which results in their willingness to invest in such an economy, which in turn drives economic dynamics and creates new jobs.

In order to establish symbiosis and complementarity between the market and the state, it is necessary that the ideology of neoliberalism, which promotes exclusive and ruthless pursuit of profit maximization, is replaced with a more comprehensive understanding of the economy, which will in a more inclusive way evaluate social, demographic, environmental and psychological consequences of economic decisions. In other words, it is necessary to establish a balance between individual and collective needs and interests, which means that the market mechanism should be complemented by regulatory and corrective action of the

state. As indicated by J. Stiglitz [2010], it is necessary that the ideologies of egoism and utilitarianism, represented by the neoliberal doctrine, be replaced by the ideology of humanism and solidarity. Only such an ideological paradigm can be the basis for an economically successful and socially acceptable society. It is vital to establish a true symbiosis between the market and the state regulation so as to reach complementarity. The state is expected to kick-start, direct, coordinate and assist the activities of autonomous economic entities to develop their full potentials. The role of the state should be understood solely from the perspective of creating objective conditions for the efficient functioning of the market mechanism. At the same time, in search of the way in which the state and the market could successfully cooperate and support each other (which implies that the state should be more efficient), it is necessary that the state relies more on the market and similar mechanisms.

3. RECOMMENDATIONS FOR THE ECONOMY OF THE REPUBLIC OF SERBIA

When the transition process began, its flow was directed in a one-way direction towards the development of the market system, according to a pattern created on the basis of neoliberal concepts, with the decisive influence of the *Washington Consensus*. Expectations that the development of the free market and its mechanisms would solve all the problems of restructuring and increased efficiency were dominant. Proponents of this concept believed that the implementation of liberalization, deregulation and privatization would lead to rapid transformation of the economy and thus create the conditions necessary to initiate the economic growth. This concept disregarded the reality that the economy can function based on the principles of economic liberalism only in special conditions which were not characteristic of any transitional country. Therefore, the dominance of the neoliberal concept is considered as one of the reasons for the large transition costs and social tensions, which are present in almost all countries in transition during the process of implementation of their socio-economic reforms. At the same time, market reforms implemented in China and India, which are characterized by unconventional economic policies, and which include a high level of market security, small extent of privatization, government-directed industrial policy, weak fiscal discipline and financial closedness [Rodrik, 2008], have resulted in high level of economic performance and most dynamic rates of economic growth.

Faced with the problem they wanted to solve as soon as possible, the creators of the programs for overcoming economic transition did not take into consideration the reality that in modern societies there are different forms of democracy and markets which are the products of particular historical circumstances, traditions of individual nations and the level of cultural development. Attempts to create an economic system based on the model of today's developed countries, such as the United States and EU member states, could not provide desired results because of ignoring the reality of the long-term historical development of these economies and societies, which is why this prefabricated economic models could not be immediately "imposed" on the countries which are at a much lower level of development. As O. Bogomolov [2010] points out, the methods of social engineering and shock therapy cannot produce a shift in the attitudes and behavior of people in a short time, nor force them to accept new spiritual and moral values. Imperceptive

acceptance of the model of social and economic system that works in developed countries, including the disregard of the historical experience of particular countries, led the majority of former socialist countries in serious economic and social difficulties. In the absence of a carefully planned strategy of the transition process, one-sided forms of democracy and market relations appeared, which resulted in sharp polarization of the society.

The experience in the implementation of the transition process, thus far, has confirmed that the active political, economic and social role of the state is essential, because the state represents the entity that will conceptualize, initiate, organize, regulate and control this process. The active role of the state does not imply the role of the state in the capacity of business owners and their administration, but as an architect of institutional arrangements and the bearer of the infrastructure development. Internal development and institutional relationships, which are essential for the creation of the system's stability and its efficiency, cannot be successfully achieved through general liberalization of economic relations. Key factors that have a decisive influence on the position about the manner of regulating economic relations and coordination of economic activities are the following:

- Despite the evident limitations and shortcomings, free market is necessary as a mechanism of self-regulation, motivation, dynamics and optimization of economic processes, however, it should be complemented with active government regulatory, corrective and complementary functions, as well as the protection of general social and long-term interests;
- When creating the economic system, the goal is not only to build an efficient, stable and dynamic economy, but, primarily, to build a just and humane society;
- The balance between the public and private interests, i.e. the achievement of economic efficiency and social equality should be provided by the active state involvement.

In terms of the extent of the involvement of the state in the economic activity, according to F. Fukuyama [2005], it is necessary to distinguish between the scope of the state competencies in exercising different functions and objectives, and the capacity of the state, which is reflected in its ability to clearly and transparently plan and implement policy decisions, which presents direct institutional competence. Unlike the scope of state competencies (security and protection of public order, social and health insurance, education, etc.), whose hierarchy is inconsistent, the capacity of the state actually involves institutional capacity, whose strengthening should be the top priority in every country. Institutional capacity implies the ability of the state to formulate and execute policies and enforce laws and regulations, to have an efficient and small public administration, to control corruption and bribery, to maintain high level of transparency and accountability of government institutions and, primarily, to guarantee the abidance and enforcement of the laws. The above mentioned properties imply variations in the stability of the state in the implementation of various functions. For example, the success of the state in securing public order and peace, rule of law, public health, education, economic regulation and the like will vary. It turned out that many countries that created their policies in accordance with the *Washington Consensus* during the transition process, and thus reduced the scope of state jurisdiction, weakened the existing institutional capacity, which resulted in introduction of new functions of the state that had not previously existed.

The state has special importance in an environment of incomplete institutional structure and structural imbalance, (as is the case with the Republic of Serbia and the majority of economies that are currently in transition) when it is necessary to take responsibility in terms

of setting the priorities of the transition process and in the creation and implementation of the economic policy. In terms of the economic environment, the role of the state is to create institutional framework and such business environment that will encourage and reward investors, both domestic and foreign ones, and motivate them to invest in innovative activities that include new technologies and more efficient ways of doing business, which is an essential prerequisite for profit maximization. At the same time, by creating a favorable institutional environment, the state contributes to the reduction of economic and any other risks, which is one of the key tasks of the state as a regulatory factor and which enables the more efficient functioning of the market itself.

Since the stimulation of economic growth and development is priority for the Republic of Serbia, as well as all other transition economies, one of the most acceptable concepts is that of a developmental state, which is essentially characterized by the following:

- Responsibility towards the economic, political, social, development and institutional issues;
- Active participation in investing and direct channeling of development processes;
- Establishing and regulating the relations between the economy and the policy that supports sustainable industrialization;
- Establishment of the professional and efficient control mechanism, which is distinctive for its managerial capabilities;
- Harmonization of the state intervention with the goals of the private sector and the functioning of the market mechanism, i.e., complementarity between the strong state and the free market;
- Promoting economic development based on productivity and competitiveness.

In seeking an answer to the question of what kind of relationship should be established between the market and the state in a particular country, it is necessary to bear in mind that there are no universal formulae for success. Some concepts are valid for one time period, but not for another, some concepts have proved successful in some countries but in others they had not been very successful. Social and economic reality indisputably shows that the state is always present in the economy and that no one, except a variety of extreme liberals, can claim that the state should be left out in this respect. The task of the economic theory is to persistently explore different combinations of market and state interaction in different conditions and in different environments, as the economic theory has itself evolved thanks to its successes as well as failures.

CONCLUSION

Creating the conditions necessary for the successful functioning of a market economy implies the need to clearly define the role of the state, i.e., to find a suitable form of its efficacy as an allocative and a coordination mechanism, in order to successfully realize the complementary and corrective function in terms of the market. In other words, an efficient institutional system that defines the environment in which the market operates is an imperative, given that in poor institutional environment an increase in the arbitrariness of the state authorities and their officials inevitably occurs which leads to the poor functioning of the market system. This is particularly significant for the societies where the free market is established through the process of transition, because the transition to a

market economy is not just about liberalization and the introduction of private property, but, above all, the establishment of adequate market institutions.

The significance of the state is supported by the fact that it is the state that introduces the essential harmony in functioning of the economy, and its role is exercised in accordance with its own institutional capacity. In order to consolidate its productivity, the following three interrelated institutional blocks are vital: defining the rules and ensuring their implementation; establishing competitive environment, both in the country and abroad; initiating establishment and promoting of partnerships both in the economic sphere and the society.

Modern economics has wholeheartedly embraced the institutional guardianship of the state, since, thanks to this kind of support, the economy was able to concentrate on the continuous improvement of its performance. In this way - more out of necessity than out of substantive systemic reasons - an alliance between the state and the economy is established. Accordingly, the economic necessity imposed the need to establish a symbiosis between the state and the market, sometimes acting as allies and other times acting as rivals. Theoretical and methodological analysis of different conceptions of the relationship between the market and the state in a modern economy, as well as references to the reality of the overall socio-economic development, provide sufficient arguments to confirm the hypothesis of this study.

In search of the optimal mode of the influence of the state on economic activity, the emphasis is on increasing the efficiency of the state in implementing its functions. Since the inefficiency of the state apparatus produces the additional non-production costs in the economy, it is necessary that the state follows certain market principles. This is one of the basic requirements that enables the state to fulfill its functions in terms of securing firm rules of the game for all economic actors and thus, in the best way, contribute to the creation and development of a true market environment. To put it briefly, the state and the market are connected by a network of interrelations and interactions, which include not only the components of conflict and substitutability, but also the equally firm elements of complementarity, which is a prerequisite for their effectiveness, as well as the economic performance of modern market economy.

Acknowledgement. *This paper is a part of the research project No. 179015 funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia.*

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KOMPLEMENTARNOST TRŽIŠTA I DRŽAVE KAO FAKTOR USPEŠNOSTI SAVREMENE TRŽIŠNE PRIVREDE: POUKE ZA REPUBLIKU SRBIJU

Tržišna privreda se tumači kao sistem koji karakterišu privatnosvojinski odnosi i samoregulišući tržišni mehanizam, kojim se ostvaruje koordinacija aktivnosti ekonomskih aktera. U skladu sa takvim shvatanjima, dalje se razvija teza da jedino privatno preduzetništvo omogućava ekonomski prosperitet, s obzirom da je ekonomski rast direktno uslovljen stepenom slobode ekonomskih subjekata. Bez namere da se ospori uloga tržišnog mehanizma, privatnog preduzetništva i ekonomske slobode, cilj je da se u radu ukaže na postojanje objektivnih faktora koji uslovljavaju potrebu da se, u funkcionisanju savremenih tržišnih privreda, ostvari uzajamna povezanost tržišta i države, kao koordinacionih i regulatornih mehanizama. Ovaj stav se temelji na iskustvima najrazvijenijih tržišnih ekonomija, koje su svoje razvojne ciljeve ostvarile, dobrim delom, zahvaljujući odgovarajućoj simbiozi i komplementarnosti tržišta i države. Shodno tome, rezultat istraživanja je da se, na bazi različitih teorijskih stanovišta i ekonomske realnosti savremenih tržišnih ekonomija, ukaže na potrebu da se u kreiranju ekonomskog sistema u Republici Srbiji uvaži realnost da će i tržište i država biti uspešniji kada je njihov međusobni odnos komplementaran.

Ključne reči: *tržište, država, koordinacija ekonomskih aktivnosti, ekonomska uspešnost, komplementarnost tržišta i države.*

THE STRATEGIC INTENTION OF MULTINATIONAL ENTERPRISES IN CORPORATE SOCIAL RESPONSIBILITIES IN NIGERIA

UDC 334.726(669)

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Abstract. *Multinational Enterprises (MNEs) around the globe are integrators and the grace for economic flight. One major helping hand given by Multinational Enterprises in the provision of capital intensive social amenities and infrastructures is obvious in the area of their social responsibilities. In this vein, the study examined the strategic intention of multinational enterprises in corporate social responsibilities in Nigeria. In the quest into the subject matter, this study gathered data and information through primary and secondary sources. The study randomly selected 500 respondents from the population of the study area (Nigeria). Data were analyzed with Likert Scaling Method and simple percentage method. It was discovered that some MNEs have demonstrated a Two-aim approach (which implies a win-win) as a strategy to keep their operations going in Nigeria, and likely, other developing countries of the world. It was concluded that the rationale behind their commitment to corporate social responsibilities is to establish balance of objectives between the Multinational Enterprises' home countries and host countries. The study therefore recommended that MNEs and the host countries should maintain two-aim approach, so as to ensure that the objective of one party is not hurt.*

Key Words: *multinational enterprise, social responsibility, development, strategy, profit repatriation, objectives*

INTRODUCTION

Over the years, the increasing trends in globalization have forced the economies of the world into an integrated whole. The integration of the world economies into one is a

Received November 15, 2014 / Accepted March 25, 2015

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phenomenon aptly called global village (Onodugo, 2012). There is consensus among scholars that technological changes and globalization agents are forces that have and will continue to transform the economic and social fabrics of the various nations (Chaykowski, 2002).

Multinational Enterprises are products of globalization, and they can be indisputably referred to as essential agents of globalization. The multinational Enterprises around the globe are logically viewed as integrators and the grace for economic flight. Multinational Corporations are usually very large entities having a global presence and reach (Kim, 2000). The colossal collection of efforts by a huge number of these giant entities is crucial to the economic headway of developing nations. In line with this, Onodugo (2012) posited that the number and activities of these MNCs have grown over time as Nigeria struggles to develop socio-economically as a nation.

In Nigeria, one major helping hand given by Multinational Enterprises in the provision of capital intensive social amenities and infrastructures is obvious in the area of their social responsibilities. These capital intensive social amenities and infrastructures are demands that have been a national phenomenon. So frequently neither government institutions nor companies or communities themselves have been properly equipped to respond to them (Culverwell et al, 2003). MNEs have often shouldered the responsibilities to complement the government effort in providing some social services and welfare programs in addition to their normal economic contributions. Burger (2011) expressed that Shell brought reliable lighting and electric power to people and small businesses which have never known it before, creating thousands of jobs, educating and training thousands in the process.

Research objectives

The purpose of this study is to systematically investigate and analyze the commitment of Multinational Enterprises to Corporate Social Responsibilities as a strategic approach to their operations in Nigeria, and also to investigate into the critics' view about MNEs.

1. THE CONCEPT OF MULTINATIONAL ENTERPRISE

The term Multinational Enterprise is used in various senses such as Multinational Corporation, Multinational Companies, Multinational Organization and even transnational corporation. According to Olumba (2009), multinational organizations are those whose operations transcend national frontiers or national boundaries and multinational enterprise is a firm which owns and controls income generating assets in more than one country and accounts for one-fifth of the worlds output excluding the centrally planned economies. Nickels *et al* (2002) viewed Multinational Company as an organization that manufactures and markets products in many different countries; it has multinational stock – ownership and multinational management. Multinational Enterprise, according to Ile (2000), is a score of small, medium and large sized firms operating in different countries. Ogbosor (2000) also viewed Multinational Corporation as any company conducting business in two or more countries and has at least 20 percent of the firms' assets or sales from business in countries other than where the parent company is located. In an attempt to create better understandings,

Okey (2007) expressed that Multinational Enterprises are often categorized into three broad groups which are:

- i. **Horizontally integrated multinational corporations**, whose management focuses on the production establishments situated in diverse countries to produce homogenous products.
- ii. **Vertically integrated multinational corporations**, whose management focuses on the production establishment in particular country/countries to produce products that serve as input/component to their production establishment in other country/countries.
- iii. **Diversified multinational corporations**, whose management focuses on the production establishment situated in different countries that are neither horizontally nor vertically integrated.

1.1. Some multinational enterprises in Nigeria

S/N	Multinational Enterprises	S/N	Multinational Enterprises
1	Exxon and Parker Nig. Plc	11	Up Bottling Co. Plc
2	G.Cappa Nig. Plc	12	Dunlop Nig. Plc
3	May and Baker Nig. Plc	13	Smithkline Beecham Nig. Plc
4	Arthur Andersen	14	Cadbury Nig. Plc
5	CFAO Nig. Plc	15	John Holt Nig. Plc
6	UAC Nig. Plc	16	Mobil Nig. Plc
7	Nestle Nig Plc	17	PZ Industries Nig.
8	Guinness Nig. Plc	18	Unipetrol Nig. Plc
9	Julius Berger Nig. Plc	19	Unilever Nig. Plc
10	Coca- Cola bottling company	20	Shell

Research survey, 2014

2. ENVIRONMENTAL FACTORS AFFECTING MULTINATIONAL ENTERPRISES IN NIGERIA

Owojor and Asaolu (2010) identified some of the critical environmental changes affecting Multinational Enterprises as:

- i. Political instability;
- ii. Capital requirement to meet economic changes;
- iii. Inadequacy of corporative cost advantage law;
- iv. Unstable exchange rate; and
- v. Unemployment dilemma in getting competent consultants to manage the business.

This paper dissects the environmental factors affecting Multinational Enterprises into internal and external factors. The internal factors include employee bartered work commitment, just-in-time material supply, management team disunity and scandals, industrial actions and so on. The external factors include terrorism, cultural factors, government policies, robbery attacks, talents hunt, economic instability, and so on. These elements are also defined as potential barriers to their further growth (Goldstein, 2009).

3. THE PERCEPTION OF MULTINATIONAL CORPORATION

The continuous operation of Multinational Corporations in Nigeria, despite the level of turbulences in the business environment, has drawn the attention of scholars into investigations. Some scholars deduced that the roles of multinational corporations are either secretive or selfish, and others upheld that their roles are inimical to economic well being in a logical way. Two schools of thought viewed Multinational Corporations in different ways. One upholds that the relevance of multinational corporations is immeasurable, and the other criticizes its presence particularly in the developing countries. Okey (2007) highlighted these two schools as shown below:

3.1. Dependency school

The Dependency school of thought viewed all activities of Multinational Enterprises in resident countries as being inimical to the general objectives. The school believes that Multinational Enterprises have always hacked into a nation's wealth, particularly, in the developing countries. Their activities are audible to the deaf and visible to the blind in such areas as:

- i. *Destruction of indigenous technology*
- ii. *The creation of unemployment*
- iii. *Exploitation of material and human capital*
- iv. *Political interference*
- v. *The production of some low quality goods in their host country*
- vi. *Pay discrimination*

3.2. Paternalistic school

This school of thought upheld that the activities of Multinational Enterprises in their host countries cannot be over-emphasized. The school viewed Multinational Enterprises as answers to the questions of deficiency or turnaround in their host countries' economy. The school also believed that Multinational Enterprises are highly significant to the economic growth and development of the Third World Nations through the following activities:

- i. *Foreign direct investment*
- ii. *Employment creation*
- iii. *Creation of new products*
- iv. *Technology transfer*

4. IS CORPORATE SOCIAL RESPONSIBILITY A STRATEGY FOR MULTINATIONAL ENTERPRISES?

A strategy states the course of actions to be taken in order to achieve an objective. It is one grand tool for improving business growth. The choice of social responsibility by most indigenous firms is backed by a particular long-term goal. Since a strategy is long term oriented, it is reasonable to hold a consensus that corporate social responsibility is a strategy. Chen and Liu (2012) opined that a strategy is the direction and scope of firms in the long run that will bring benefits for the firms through combinations and allocations of resources for carrying out the firms' major goals and missions within a challenging

environment. Multinational Enterprises' involvement in social responsibility can be viewed as good intentions that can establish the Two-Aim approach (mutualistic relationship). This approach involves a win-win commitment to socio-economic development of the host countries and the home countries of these Multinational Enterprises. Though, Bakan (2004) stated that:

A corporation can do good only to help itself do well, a profound limit on just how much good it can. The benevolent rhetoric and deeds of socially responsible corporations create attractive corporate images, and likely do some good in the world. They do not, however, change the corporation's fundamental institutional nature: its unblinking commitment to its own self-interest.

According to Ionescu and Oprea (n.d.), multinational corporations exploit host countries and their inhabitants because they capitalize all revenue which is obtained from a location, they migrate into other countries which offer greater advantages for multinational corporations and because these corporations follows only their own interests.

MNEs intervention in CSR is a strategy to do 'good-good' and balance up equations between the host country's economy and the home country's economy (the Enterprise's country). These will enable adequate measures of economic growth of these mutually benefiting nations. It is crystal clear that the crucification of these Multinational Enterprises is just the symbol of selfishness and parasitic intentions not uncovered. Over the years, series of researches have been directed towards exposing the behavioural pattern of multinational enterprises, particularly, in the area of social and economic perspectives. These researches failed to investigate or detail analysis on the causes of the behaviours of the multinational enterprises towards development in totality.

4.1. The two-aim approach

In Nigeria, we observed that most effectively functioning enterprises are the foreign enterprises. The result of this may be from the fact that most indigenous enterprises lacked a comprehensive method of matching business to the greater height. Neo-liberal economists contend that MNE are perhaps the most significant catalysts for sustainable development, because multinational corporations typically possess newer and cleaner technology and have better management practices which can be transferred to their subsidiaries in developing world (Hassan, 2013).

This approach provides a framework for the establishment of balances between two significant but conflicting interests, such as that of multinational enterprises and the host country. The approach attempts to advocate mutual commitment-mutual benefits, rather than parasitic notion observable through rational thinking and harming objectives between the two parties (the multinational enterprise and the host country). There is no doubt that no one country permits the operation of multinational enterprises without a particular objective, and no one multinational enterprise operates in another country without its particular objective. Having understood this, the natural law of fairness requires that each party struggles to achieve its objective in consideration of the other party's objective, since it is initially conceived as cooperation and not a game of conflict. Goluch (2012) posited that in case of games of cooperation, one is dealing with variable sum games –an

economically interesting phenomenon. A cooperation should be non zero-sum since it is backed up by mutual agreement and guiding principles. The aim of the host country is to fill the loopholes in the development process of its economy, and if the multinational enterprises must exist and operate within the host community, they must give out something to get something. That is to say, they must make the environment where they are operating conducive for the running of their business by way of employing the youth in the community as well as providing the basic social amenities such as construction of roads, building of schools for the host community, building of hospitals, enabling them to achieve their objectives among other things. By so doing, both parties stand to benefit mutually (from: adequate security, technological improvement, adequate revenue generation, better management practice, optimum utilization of resources, learning, human capital development, and so on).

4.1.1. The implication of the two-aim approach

This Two-aim approach is incapable of working isolatedly without mutual agreement and guiding principles. Once these agreement and principles are binding on both parties:

- i. Reconciliation and balance of interests will be achieved.
- ii. Under-performances of the economic agents (multinational enterprises) will become past events, both in the host country's national and global economy.
- iii. Solution to economic bottlenecks becomes the two parties' concerns.
- iv. In the case of Nigeria, corruption by some social and political dramatists who influence inapt practices of some multinational enterprises will reduce.
- v. Positive behavioral pattern towards sustainable development becomes enhanced.
- vi. Excessiveness and environmental degradation by some multinational enterprises will reduce.

5. THE GENERAL IMPACT OF MULTINATIONAL ENTERPRISES IN NIGERIA

In the real sense of global economic activities, no two parties ever get saturated. This is the reason why the 'selfishness of one is in the interest of gaining it all'. In their work, Okereke and Ekpe (2002) expressed that rather than re-incest their profits in the economy of the host countries, in to generate other economic activities and hence expand the economy, the Multi-National Corporations repatriate profits to their home countries in what is often referred to as capital flight.

In other words, the term 'perfect' has a mere dictionary meaning, as no single human treks without the head shaking. In spite of the positive economic contributions of Multinational Enterprises, there are numbers of negative implications of their activities. These activities are hugely fueled by some corrupt leaders and elder-statesmen, who benefit from the dilapidating conditions. Cole (2006) expressed that the activities of Multinational corporations led to an increase in anti-social activities like drug-abuse, prostitution, kidnapping and murder. The corrupt practices, coupled with inapt influences of the social and political dramatists are the source of distortion and confusion about the operations of these multinational enterprises. In his view, Onimode (1982) had pinpointed that a thorough empirical analysis of the impact of multinational enterprises on the Nigerian economy and consciousness will reveal the following:

- i. Profit repatriation
- ii. Technological backwardness
- iii. Structural distortion
- iv. Political instability
- v. Cultural degradation

Despite that, multinational enterprises are still better off as a tool for desired economic development. For many developing countries, multinational corporations represent the lowest bad thing which they can select; for these countries, the multinational corporations create new jobs, develop infrastructure and stimulate the demand growth (Ionescu and Oprea, n.d.). Thus, rather than ‘pollution havens’, multinational corporations create ‘pollution halos’ in developing countries through the export of modern technologies (Hassan, 2013).

6. RESEARCH METHODOLOGY

In the quest to investigate into the subject matter, this study gathered data and information through primary and secondary sources. The primary source includes questionnaires and interviews; while the secondary source includes textbooks, journals, theses, posts and the internet. The study randomly selected 500 respondents from the population of the study area (Nigeria). The data were analyzed with Likert Scaling Method and simple percentage method as shown below:

Likert Scaling, where S.A – Strongly Agree; A – Agree; N – Neutral; D – Disagree; and S.D – Strongly Disagree.

$$\frac{f}{n} \times \frac{100}{1} \text{ where } f = \text{frequency of response and } n = \text{number of respondents}$$

7. DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

Table 1 Questionnaire administration

Instrument	Frequencies	Percentage
Questionnaires distributed	500	100
Questionnaires returned	455	91
Questionnaires unreturned	45	9

Source: Field Survey, 2014

Table 1 above depicts that out of the 500 questionnaires (100%) distributed in the field, 455 questionnaires (91%) were returned and 45 questionnaires (9%) were not returned.

Table 2 Demography based on sex

Sex	Frequencies	Percentage
Male	157	34.5
Female	298	65.5
Total	455	100

Source: Field Survey, 2014

Table 2 shows that the surveyed respondents were 157 males (34.5%) and 298 females (65.5%).

Table 3 Demography based on residence

Area	Frequencies	Percentage
Rural Residence	112	24.6
Urban Residence	343	75.4
Total	455	100

Source: Field Survey, 2014

Table 3 shows that the survey consisted of 112 respondents (24.6%) from the rural area and 343 respondents (75.4%) from the urban area.

Table 4 Respondents' responses based on questions

S/N Questions	SA	A	N	D	SD	Total
	F(%)	F(%)	F(%)	F(%)	F(%)	F(%)
1 The presence of MNEs in Nigeria has helped the economy a great deal.	215 (47.3)	98 (21.5)	25 (5.5)	20 (4.4)	97 (21.3)	455 (100)
2 MNEs have often contributed to rural-urban development in the society.	144 (31.6)	100 (22.0)	24 (5.3)	37 (8.1)	150 (33.0)	455 (100)
3 The economy may be weak if all MNEs are evacuated from Nigeria.	156 (34.3)	83 (18.2)	15 (3.3)	119 (26.2)	82 (18.0)	455 (100)
4 MNEs cause environmental hazards and social problems	215 (47.3)	116 (25.5)	9 (2.0)	47 (10.3)	68 (14.9)	455 (100)
5 The MNEs operation's harms outwit their social responsibilities.	128 (28.1)	146 (32.1)	60 (13.2)	51 (11.2)	70 (15.4)	455 (100)

SA–Strongly Agree; A–Agree; N–Neutral; D–Disagree; SD–Strongly Disagree

Source: Field Survey, 2014

From Table 4 (Question 1): 215 respondents (47.3%) – strongly agreed; 98 respondents (21.5%) – agreed; 25 respondents (5.5%) were neutral; 20 respondents (4.4%) – disagreed; and 97 respondents (21.3%) – strongly disagreed that the presence of MNEs in the Nigerian economy has helped a great deal.

From Table 4 (Question 2): 144 respondents (31.6%) – strongly agreed; 100 respondents (22.0%) – agreed; 24 respondents (5.3%) were neutral; 37 respondents (8.1%) – disagreed; and 150 respondents (33.0%) – strongly disagreed that MNEs have often contributed to rural-urban development in the society.

From Table 4 (Question 3): 156 respondents (34.3%) – strongly agreed; 83 respondents (18.2%) – agreed; 15 respondents (3.3%) were neutral; 119 respondents

(26.2%) – disagreed; and 82 respondents (18.0%) – strongly disagreed that the economy may be weak if all MNEs are evacuated from Nigeria.

From Table 4 (Question 4): 215 respondents (47.3%) – strongly agreed; 116 respondents (25.5%) – agreed; 9 respondents (2.0%) were neutral; 47 respondents (10.3%) – disagreed; and 68 respondents (14.9%) – strongly disagreed that MNEs cause environmental hazards and social problems in Nigeria.

From Table 4 (Question 4): 128 respondents (28.1%) – strongly agreed; 146 respondents (32.1%) – agreed; 60 respondents (13.2%) were neutral; 51 respondents (11.2%) – disagreed; and 70 respondents (15.4%) – strongly disagreed that the MNEs operation’s harms in Nigeria outwit their social responsibilities.

7.1. Discussion of findings

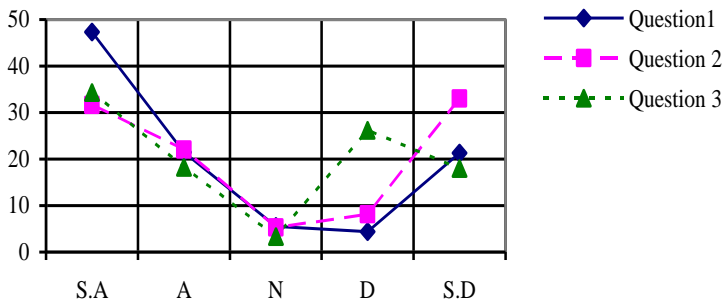


Fig. 1 Analysis of findings

Following Figure 1 line graphs above, it is crystal clear from question one that the country’s economy is no doubt a dependent economy. The respondents’ views reflect the high level of technology transferred into the country, creation of jobs, social development, improved standards of living and human capital development programs observed with MNEs. It is discovered that Nigeria needs more MNEs, and any attempt to repatriate all MNEs is dangerous to the health of the economy. It was also discovered from responses to question two that measureable development in some rural and urban areas are championed by these MNEs following the highest percentage of respondents. Responses in the light of question three also proved that Nigerian economy may be in a dilapidated condition if the MNEs decided to evacuate.

Summarily, the study found out that some MNEs have demonstrated a Two-aim approach (which implies a win-win) as a strategy to keep their operations going in Nigeria, and likely, other developing countries of the world. The intentions of critics against the operations of all MNEs are what the study is yet to discover.

CONCLUSION

Multinational Enterprises are essential agents of globalization that have often shouldered the responsibilities to complement government’s effort in providing some social services and welfare programs in addition to their normal economic activities in any host country. It is

explicit that this form of commitment to social responsibilities is a strategy to their operations. This strategic commitment of Multinational Enterprises to socio-economic development can be measured up in their effectiveness and efficiency, technology transfer, human capital development, job creation, provision of social amenities, healthcare services, and so on. Though, the aims of some Multinational Enterprises are kept confidential.

There are two schools of thought; one criticizes and the other supports the activities of Multinational Enterprises in the host countries. These two schools may be right based on varying views, but a fair deduction can only be made if the activities of Multinational Enterprises are evaluated individually, from state to state and country to country. The Nigerian economy, if properly diagnosed, is a clear paradigm for this view.

Paradoxically, any entity set up to make loss is never regarded as a business entity. The effort into doing business in a better way has led these Multinational Enterprises into strategic commitment to corporate social responsibilities. The rationale behind this is to establish balance of objectives between the Multinational Enterprises' home countries and host countries. Their strategic commitment to corporate social responsibilities in Nigeria and other developing countries is a 'Two-Aim approach' (that is, win-win strategy) to enhance continuous business operations.

Recommendations

This study recommended that:

- i. Government should attract and motivate foreign direct investment in Nigeria.
- ii. There should be an indomitable mutual agreement and guiding principles between multinational enterprises and the host country, Nigeria.
- iii. The two parties (MNEs and the host country) should maintain a two-aim approach, so as to ensure that the objective of one party is not hurt.
- iv. The government and its appropriate agencies should encourage the economic effort of Multinational Enterprises in Nigeria, as well as in other developing countries.
- v. Multinational Enterprises should find all means to avoid hazardous and anti-social activities.
- vi. Multinational Enterprises should intensify their commitment to corporate social responsibilities so as to convince critics that their socio-economic development intention is right.
- vii. Due to the fact that not all Multinational Enterprises have the good socio-economic development intention, the government should adopt a ranking system to enable them to focus on national development rather than the repatriation of profit.

Multinational Enterprises should endure paying the same tax payable in their home countries so as to observe the principle of fairness.

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STRATEŠKE NAMERE MULTINACIONALNIH PREDUZEĆA U POGLEDU KORPORATIVNE DRUŠTVENE ODGOVORNOSTI U NIGERIJU

Multinacionalna preduzeća širom sveta upotpunjuju i daju podsticaj za ekonomski razvoj. Velika pomoć koju pružaju multinacionalna preduzeća u pogledu kapitalno intenzivnih društvenih objekata i infrastrukture je očigledna u oblasti njihovih društvenih odgovornosti. U tom smislu, studija ispituje strateške namere multinacionalnih preduzeća u pogledu korporativne društvene odgovornosti u Nigeriji. U istraživanju ove teme, studija je sakupila podatke i informacije putem primarnih i sekundarnih izvora. Za studiju je metodom slučajnog uzorka izabrano 500 ispitanika iz populacije područja studije (Nigerija). Podaci su analizirani pomoću Likertove skale stavova i jednostavnom procentualnom metodom. Otkriveno je da su neka multinacionalna preduzeća koristila pristup dva cilja (koji podrazumeva pobjednik – pobjednik situaciju) kao strategiju da bi se njihovo poslovanje nastavilo u Nigeriji i, verovatno, drugim svetskim zemljama u razvoju. Zaključeno je da je princip njihovog zalaganja za korporativnu društvenu odgovornost uspostavljanje ravnoteže između ciljeva matičnih zemalja multinacionalnih preduzeća i zemalja domaćina. Studija stoga preporučuje da multinacionalna preduzeća i zemlje domaćini treba da zadrže pristup dva cilja, kako bi se osiguralo da cilj jedne strane ne bude povređen.

Ključne reči: multinacionalna preduzeća, društvena odgovornost, razvoj, strategija, repatrijacija profita, ciljevi.

GLASS CEILING PHENOMENON IN TRANSITION ECONOMIES - THE CASE OF SOUTH EASTERN SERBIA

UDC 316.647.82(497.11)

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Abstract. *The aim of the paper is to test the existence and the height of the glass ceiling for women in South Eastern Serbia. The research aims to determine the difference in the level of education between employed men and women, the participation of women in managerial positions, as well as the level of management in which they participate equally or participate at all. These issues are analyzed in the context of industry, type of ownership and size of the enterprise. The additional aim of the paper is to make a comparative analysis of business performances of enterprises in which women have a share in managerial positions, compared to the enterprises with an all-male management structure.*

Key Words: *glass ceiling, discrimination, business performances, South Eastern Serbia*

INTRODUCTION

Although theoretically conceived in developed economies, the phenomenon of the glass ceiling, that is invisible ceiling through which women can see higher hierarchical positions but cannot reach them [18], was and still is virtually present in the transition countries. The ideology of gender equality was officially the ideology of the former communist system countries, but in practice, the domination of men in the public and in the business sphere was a fact [15]. Removing the barriers for women's career promotion is one of the aspects of reaching gender equality and exploiting the full potential of all members of society. Given the persistence of the traditional values in the Serbian society [10, p. 1097; 19, p. 46], the assumption is that the women in Serbia are in a worse position than the women in most EU countries regarding this issue. Therefore, breaking the glass ceiling for Serbian women is of a particular importance for their professional and individual development and for the progress of this transition society as a whole. The existence and

Received October 8, 2014 / Accepted March 25, 2015

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height of the glass ceiling for Serbian women will be evaluated in the business context of the South Eastern Serbia.

Apart from the gender equality issues, involving women in management teams has been gaining in importance given the fact that gender-diversified management teams can improve the quality of decision making and management. In that sense, the relationship between the increased participation of women in management teams and business performances should be examined.

The paper is structured as follows: The conceptual framework for developing hypothesis and the hypothesis themselves are presented in the second section of the paper. After explaining the methodology and showing the research results in the third part of the paper, these results are discussed and certain concluding remarks are presented. Limitations of the study and propositions for further research are presented in the final part of the paper.

1. CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

The glass ceiling refers to the invisible barrier that keeps women away from the managerial positions, especially away from the top management level [22]. This ceiling is *made* of glass which makes it invisible, but nevertheless the existence of the barrier limits the vertical carrier movement of women [2]. If the glass ceiling exists, women are unable to move up to higher management levels despite their qualification and abilities [16]. In most EU member states women make more than half of new university graduates, but they are still the underrepresented gender in a decision making positions [8]. Basic indicators on secondary education in the Republic of Serbia show that half of the pupils in the regular upper secondary education are girls [25]. More than half of the newly enrolled students in Serbia are women also [24]. More important for the management potential of women is the fact that 59% of all graduate students in the tertiary education in Serbia are women [25]. Women represent the majority of graduate students in almost all levels of studies in the Republic of Serbia (Table 1).

Table 1 Gender composition of graduated students by level of studies

Level of studies	% of graduated women students (Republic of Serbia)	% of graduated women students (Region of the South Eastern Serbia)
All levels of studies	59%	60%
First stage studies	57%	63%
Basic academic studies	57%	61%
Basic vocational studies	57%	63%
Second stage studies	60%	58%
Master and integrated studies	60%	58%
Specialist vocational studies	43%	58%
Specialist academic studies	69%	50%
Third stage studies	48%	53%
Doctorate academic studies	48%	53%

Source: [25]

Going down from the national to the local level, the participation of women in the number of high and higher educated individuals in the South Eastern Serbia is slightly lower – but still almost equal to the relative number of men (Table 2).

Table 2 Population aged 15 and over by educational attainment and sex in the South Eastern Serbia

	Total	male	% male	female	%female		
Total	1347323	661251	100%	49.08%	686072	100%	50.92%
Without educational attainment	50823	9472	1.43%	18.64%	41351	6.03%	81.36% ¹
Primary education	314513	152185	23.01%	48.39%	162328	23.66%	51.61%
Secondary education	605683	334124	50.53%	55.16%	271559	39.58%	44.84%
High education	68440	36642	5.54%	53.54%	31798	4.63%	46.46%
Higher education	99472	51146	7.73%	51.42%	48326	7.04%	48.58%
Unknown	6700	3128	0.47%	46.69%	3572	0.52%	53.31%

Source: [25]

In the context of the official data for the general population level, the first hypothesis that will be tested refers to the educational level of the employed men and women in the South Eastern Serbia. Therefore, the following hypothesis is defined:

H1: *There is no significant difference in the level of education of the employed men and women in the South Eastern Serbia.*

Women represent about one half of the work force but only for a minority of them carrier advancement means reaching managerial positions [17]. Working men have more experience in managerial roles than working women [11; 26]. As a barrier that prevents carrier advancement for women, not because of their lack of education, but because of their gender, glass ceiling can exist at different levels, but it mainly blocks the advancement toward the top management positions [20]. Not only are they less likely to be managers at all, but the probability of being a top manager is lower for women as well [1; 4; 14]. When they do have certain managerial experience, women dominantly gained it in the operational management level [11]. Related to the discussion about the educational level, it can be stated that although there is no difference in that regard, there is a difference in the management experience of men and women, in favour of men.

Although growing, the rate of women's participation on boards is still low. In 2013 only one in six members, that is 16.6% of the board members of large publicly listed companies in the EU 27 were women [7]. Keeping the current dynamics, it would take 50 years to accomplish the EU goal of at least 40% of each gender in the boardrooms². The

¹ It is interesting to note that the significant majority of all individuals without educational attainment are women. It is reasonable to assume that the majority of these women are older. Nevertheless, this fact signals that women have a significantly worse socio-economic status.

² Of the 33 countries covered by the European Commission database, only two – Iceland and Norway – are close to this goal, and both countries have introduced a quota system for the composition of business boards [7]. The *quotas* instrument is aimed to achieve a wider and deeper participation of women in different spheres of public life. Defining quotas for the inclusion of the under-represented gender in corporate management is a

situation is not better in the USA as well. In the US, women represent more than a half of the population, and almost a half of the workforce but only 12% of the corporate officers of the Fortune 500 companies are women [21]. Regardless of the fact that there are more graduated women than men, and that there are more working women that are professional experts – the number of men legislators, administration officials and managers is greater than the number of women in these occupations in the Republic of Serbia [23]. Less than one third (29%) of the legislators, administration officials and managers in the Republic of Serbia are women [ibid.]. Given the available data, it seems that the glass ceiling phenomenon is a statistical fact and that it represents one kind of the subtle form of gender discrimination in the workplace [22].

This discussion leads to a development of the hypothesis regarding the gender composition of the business management structure in the South Eastern Serbia. Therefore, it is hypothesized that:

H2a: *The number of female managers is significantly lower than the number of male managers in any level of managerial positions.*

H2b: *The male centred composition of the management structure is particularly pronounced in the top management level.*

Given their relational perspective [3], the involvement of women in management teams can encourage dissemination of information, and thus facilitate decision making [13]. Women have multiple roles in their lives, and they are often forced to balance between their personal and professional obligations [5], so this can make them more competent for multitasking [13]. This reasoning has been proved by certain studies whose results show that gender diversified management teams contribute to business performances [8; 13], and particularly in firms that are pursuing high growth [6]. Studies show that those companies which promote women workers are more successful [9], and that those companies which use the full potential of their employed women are the ones that have competitive advantage and greater results with regards to profits and sustainability [12]. In line with the presented results, the third hypothesis has been developed:

H3: *There is a positive correlation between gender diversified management teams and better business performances.*

2. METHODOLOGY AND RESULTS

The research presented in this paper included 119 enterprises and 24 entrepreneurs and corresponds to a proportional structure of the employers in the South Eastern Serbia. The research was conducted in January and February 2014. The questionnaire was designed for employers with questions concerning the gender structure of employees, education level of employees (the share of higher educated employees), management structure (the number of top, middle and operational management positions) and the

measure that causes different reactions, but its supporters state that this is a measure for an effective realization of the gender equality goals.

amount of earnings realized in the respondent companies. The structure of the sample according to gender and educational level of employees is presented in Table 3.

Table 3 Educational and gender structure of the sample

	High education	Other levels
Education	92%	8%
	Female	Male
Gender	41%	59%
High educated employees	44%	56%

The methods which are used in order to conduct analyses are: descriptive statistics, chi-square test, z-test, correlation analysis. The sample includes 15564 employees, 6338 of which are female. Such gender structure (40.72% of female employees) corresponds to the global gender structure of the labour force in South Eastern Serbia (40.48% of female employees) and it is slightly less than the country share (41.98%). The structure of the sample regarding the participation of employed women is presented in Table 4.

Table 4 Participation of female employees in the research units

	Female employees participation				Total
	0%	Up to 50%	Over 50%	100%	
Enterprises	7	76	32	4	119
Entrepreneurs	3	8	7	6	24
Total	10	84	39	10	143

According to the data in Table 4, there are 11 enterprises and 9 entrepreneurs which are so-called “purely male” (7 enterprises and 3 entrepreneurs) or “purely female” (4 enterprises and 6 entrepreneurs). Given the fact that it is reasonable to analyse the glass ceiling phenomenon in gender diversified business environments, these units will be excluded from the analyses.

From the aspect of business type, all enterprises and entrepreneurs in the sample were classified into four groups: (1) construction companies, (2) industry, (3) service companies and (4) companies in the field of recycling and ecology. The reason why recycling is separated from the rest of the industry is the strategic and economic significance which the development of this branch has not only for South Eastern Serbia, but for the whole of Serbia as well. Namely, the latest report of the European Commission, at the very moment of the commencement of accession negotiations with the EU, clearly emphasizes that environmental protection in Serbia is at a low level. The structure of the sample according to business type and percent of female employees is presented in Table 5.

The Chi square test showed that there is no dependence between the analyzed types of business sectors and the share of female employees ($p=0,386$).

Table 5 Share of female employees in different business sectors

Share of female employees		Business sector				Total
		Construction	Recycling and ecology	Industry	Service companies	
0%	Count	1	0	7	2	10
	% within sector	20.0%	.0%	8.0%	4.9%	7.0%
Up to	Count	4	8	49	23	84
50%	% within sector	80.0%	88.9%	55.7%	56.1%	58.7%
Over	Count	0	1	27	11	39
50%	% within sector	0.0%	11.1%	30.7%	26.8%	27.3%
100%	Count	0	0	5	5	10
	% within sector	0.0%	0.0%	5.7%	12.2%	7.0%
Total		5	9	88	41	143

The number of high educated employees in the sample is 1228. The number of high educated female employees is 539 and they represent 8.50% of total females in the sample and 43.89% of all high educated employees. The highest share of women in the structure of high educated employees is in the field of recycling and ecology. The average share of highly educated women by business sectors is given in the following table.

Table 6 Average share of high educated women in different business sectors

Sector	Construction	Recycling and ecology	Industry	Service companies	Average
Women's share in high educated employees	35.60%	54.22%	48.76%	51.63%	49.47%

In order to test hypothesis H1, the level of education is expressed through percent of high educated employees. So, this hypothesis can be formulated in the sense that there is no difference in the percent of high educated employees between employed men and women.

There are 9226 men in the structure of employees in the sample. 689 are highly educated, which makes 7.47% of the employed men. The significance of the difference in participation of highly educated men and women was tested by using the *z-test*. The realized value of the significance level of the test ($z=0.66$, $p=0.509$) indicates that there is no statistically significant difference between the share of highly educated men and women in the population of the employed individuals in South Eastern Serbia.

The number of male managers in the sample is 597, while the number of women occupying management positions is 317, which means that the number of men in managerial positions is almost two times higher. Regarding the relative structure of managers, it can be noted that 65.32% of the management positions in the sample belong to men, while women's participation is 34.68%. According to the applied testing procedure, the significance of the difference in the participation of women and men in managerial positions ($p=0.0002$) led to the conclusion that the number of female managers is significantly lower than the number of male managers in any level of management position.

The levels of top and middle management in the sample are also dominated by men. Within 334 positions of top and middle management, 235 positions are occupied by men,

while women take only 99 positions. The relative structure of the top and middle management positions according to gender is 70.36% compared to 29.64% in favour of men. According to the formulated hypotheses that male centred composition of the management structure is particularly pronounced at the top management level, the one-tailed test of the significance of the difference between two independent proportions has been applied. The test result confirmed the accuracy of the hypothesis ($p=0.0001$).

Testing the hypothesis about the correlation between gender diversified management teams and better business performances is based on variables related to the women's share in management positions and the revenue per employee in 2013 and the average amount of earnings. As an appropriate measure of correlation, the Pearson Correlation Coefficient was calculated. The results obtained by calculation, as well as the significance level, are presented in the table below.

Table 7 Value of Pearson correlation coefficient between selected variables

Variables	Revenue per employee in 2013	Earnings
Women's share in all management positions	-0.026 (0.788)	-0.062 (0.493)
Women's share in top and middle management positions	0.080 (0.407)	0.022 (0.808)
Women's share in operational management positions	0.091 (0.346)	0.036 (0.693)

According to the results presented in the table above, it can be seen that there is negative correlation between the women's share in all management positions and the selected business performances measures. If the participation of women in various levels of management is considered separately, the correlation with business performances measures is positive, but weak. These results do not support the hypothesis about positive correlation between gender diversified management teams and better business performances because their statistical significance is very low.

3. DISCUSSION AND CONCLUSION

When it comes to participation in groups of highly educated people generally, discrimination against women cannot be noticed, since their participation is a little less than 50%. Although Table 6 indicates that there is a difference in average share of highly educated men and women, the results of hypothesis testing ($z=0.66$, $p=0.509$) show that there is no statistically significant difference between the share of highly educated men and women. These results are in line with the statement of the first hypothesis that there is no significant difference in the level of education of the employed men and women in South Eastern Serbia. Inappropriate levels of education, therefore, cannot be an excuse for the fact that women are underrepresented in the management structures.

In accordance with the assumption that there is a glass ceiling for women in South Eastern Serbia, the statistically testing procedure shows that the number of female managers is significantly lower than the number of male managers in any level of managerial position. More precisely, there is no statistically significant difference between the shares of highly

educated men and women – 65.32% of management positions in the sample belong to men, while women's participation is 34.68%. The conclusion is based on p -value, which equals 0.0002, which shows that hypothesis H2a should be accepted.

As the discussion goes on, new reasons for confirming the glass ceiling phenomenon appear. More precisely, the analysis of the hypothesis that most directly concerns this phenomenon, H2b, is based on the fact that the relative structure of the top and middle management positions according to gender is 70.36% compared to 29.64% in favour of male managers. The P -value confirms the accuracy of this hypothesis ($p=0.0001$).

The results of the last hypothesis analysis are not clear enough to lead to obvious and firm conclusions. Even though the results of the correlation analysis between women's share in all management positions and business performances indicate negative values, the conclusion is blurred with the results of the same kind of analysis concerning correlation of women's share in specific levels of management (top, middle, operational) and business performances (positive values are indicated). Therefore, the H3 hypothesis cannot be accepted based on the data used in this research and analysis.

4. LIMITATIONS OF THE STUDY AND FURTHER RESEARCH

This study is an initial step in revealing the existence and height of the glass ceiling in South Eastern Serbia. The presented analysis is limited by the available data, the data which was gathered as an additional part of a wider project that is not primarily focused on the glass ceiling issues. This data limitation became obvious particularly in the part of testing the H2b hypothesis. Namely, the structure of the questionnaire (which was not specially defined for this research) did not provide a clear distinction between the middle and the top management levels. Further on, the results of testing the H3 hypothesis could have been different if another performances measure had been used. Together with exploring the height of the glass ceiling toward the top management levels, further directions for academic research of this phenomenon are also related to a need for a deeper analysis of determinants of the glass ceiling phenomenon, and for investigating the awareness of this issue among the employees and employers in Serbian companies. Only this kind of holistic approach to the problem can give a solid base for defining measures in order to break the glass ceiling.

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FENOMEN STAKLENOG PLAFONA U EKONOMIJAMA U TRANZICIJI – PRIMER JUGOISTOČNE SRBIJE

Cilj rada jeste istraživanje postojanja i visine staklenog plafona za žene u regionu Jugoistočne Srbije. Namera je da se istraživanjem utvrdi postojanje razlika u nivou obrazovanja između zaposlenih žena i zaposlenih muškaraca, prisustvo žena na menadžment pozicijama, kao i nivoa menadžment pozicija na kojima su žene podjednako, ili na kojima su uopšte zastupljene. Navedeni aspekti biće sagledani u kontekstu pojedinih grana, privrednih subjekata različite veličine i vlasničke strukture. Pored toga, u radu će biti prikazani i rezultati komparativne analize poslovnih performansi privrednih subjekata u kojima su žene zastupljene na menadžment pozicijama i onih u kojima nisu.

Ključne reči: stakleni plafon, diskriminacija, poslovne performanse, Jugoistočna Srbija.

EMPLOYEE MOTIVATION AND REWARD SYSTEM IN LOCAL GOVERNMENT

UDC 005.88:352

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Abstract. *Since the beginning of the 80s of the last century, many changes in the contemporary business environment have contributed to the economy of Serbia having problems regarding business improvement and motivating employees. Business improvement, employees motivation, and knowledge generating is certainly a major problem in most of transition countries. Facing new circumstances, business systems require flexible behavior, in regard to changes in business environmental conditions. Knowledge and team work are main and key drivers of business productivity growth in all business areas, and because of that, motivation and rewarding of employees are both the condition and assumption of productivity growth in private and public business sector. In this paper, the authors research and analyze the system of motivating and rewarding employees in local government, which evolves under specific political, security and economic conditions.*

Key Words: *contemporary business conditions, motivation system, rewarding employees, motivators, team work*

INTRODUCTION

New business conditions require changes in business behavior of economic entities. Traditional business and employee motivation and reward systems, which were, many years ago, the key factors in a stable economic environment, are not able to fulfill the goals determined in front of them today, because of their static nature, inappropriate attitude towards employees and limited motivation that was focused only on salary. The future belongs to those business systems which will be able to adjust to the changes, and to be most innovative and flexible. Innovation, flexibility, communication, learning and acceptance of changes are the essence of development of new employees' motivation and rewarding system in business systems, organizations and institutions, both in private and in public sector, including also local governments.

Received December 14, 2014 / Accepted March 25, 2015

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By arrival of foreign companies, domestic private business systems intensively, and public sector gradually have accepted experience from most developed countries in the sense of doing business and motivation and rewarding systems. Such experiences are transferred from public sector to the local governments. The way of doing business is connected to the improvement of quality, strengthening of research and development function, permanent work on the innovation of knowledge, especially in information and communication technology domains. There is also a need for constant improvement of knowledge, skills, abilities and values of employees and managers, which in sum increase the level of motivation to achieve targeted goals. Non- material incentives are represented in form of various recognitions and work measurements, participation in managing, shaping and determining work, public commendation, organizing of seminars, paid courses etc. All of that is needed to secure desirable employees' behavior. In that sense, in this paper, we will first give theoretical basis, then key elements and forms of incentives in motivating and rewarding systems for employees, after which we will set the hypothesis, explain research methodology for development of motivation and rewarding systems for employees in Local government "City of Priština", and in the end we will show the results of research with appropriate discussion and give conclusions.

1. THEORETICAL BACKGROUND: MOTIVATION AND REWARD SYSTEM OF EMPLOYEES AND KEY FACTORS

The traditional business system which could have been proved as effective in a more stable business environments is no longer able to cope with challenges and problems that new business conditions bring due to its limitations in contemporary business environment (Sekerez, 2003, 210). Many of our economic entities have organizational structure founded during the self-management period, which had such main values as: maximum employees' protection, guaranteed work place, and their right to make decisions about the management of the company, which represent strong obstacles for employees' adoption of new business systems (Maslow, A. (2004); Janićijević, N. (2008); Jovanović- Božinović, M., Kulić, Ž., Cvetković, T. (2004); Grinberg, Dž., Baron, A.R. (1998)).

According to the forecasts of the leading experts in the fields of economics and management, the dominant influence on the development of the current companies will be (Matić, 2007, p.12-14):

- economic,
- social,
- information,
- political environment.

When it comes to the economic environment, primary business goals are maximum profit and minimal costs, with models, methods, techniques and instruments for achieving this goal in the sense of minimization of activity costs which do not add value for buyers, and with maximizing activity costs which add value for buyers, because all that leads to the maximization of profit (Šarčević, M., Balotić, G. (2011)).

Social impact implies the integration of economic and social values, with stronger accent on the preservation of business environment. Information environment has a special impact on business operations, because with the introduction of high productive, information and communication technologies, conditions are created for increasing

effectiveness and efficiency of modern business systems, as well as application of modern models, methods, techniques and instruments of managing.

In order to make a profit, it is necessary to follow the modern trends in the development of science and technology, advancements of information technology and modern management information system. Better knowledge of all the types of information technology enables better communication in the global market and favorable results in terms of international economy. Political environment is very important, especially in respect of making important strategic decisions. The government regulation and the political system in the country enhance or limit impact of all factors of environment, on existence, growth and development of business systems.

Complex and altering business conditions in the new business environment require flexible behavior from the economic entities with regard to the changed business conditions. In order to adapt to the business, it is required from the management structure to be ready for the appropriate actions that will contribute to increasing competitiveness. A necessary condition for this kind of action is the motivation and incentives for all of the employees, starting from the head managers to the executors of tasks. In order to survive, an economic entity has to implement a reward system as one of the company's motivational policy factors, which will include both the management structure and the staff of the company as a whole and its organizational units (Gajić, 2003, 190; Malinić, S. (2000); Trklja, R. (2010)). According to this, key factors for building and development of the new reward and motivation system are (www.telecollege.dcccd.edu):

- **Employee salary** for full working time, commonly speaking, is projected to fulfill all basic employee's needs. Possibility to earn bigger salary by doing the same work in the same period of time encourages managers and all employees to change their working position within their current business system or outside the current business system. It should be emphasized that the increased intensity of work in current working place can be the cause for extra earning, on condition that the system of motivation and reward predict that issue. However, it must be also emphasized that "*money is not the only factor of motivation, but far away from other factors of motivation*". Namely, with growth of living standard, the significance of this motivator is decreasing, and building of adequate motivation and reward system in company demands incorporation of current potential motivators such as rewards, material or non material stimulations, promotion of work satisfaction and enrichment of work, participation in decision making and collective negotiation, possibility of research in preferred area and similar motivators.

- **Working conditions** are another important factor for the development of the new reward and motivation system. For some people, good working conditions are related to career advancement, and for the others, to health, lifestyle, standard of living etc., and in both cases working conditions can be the factor for bigger engagement of employees and better result achievement. Good working conditions enable the activation of creative energy of employees and relieve the feeling of discomfort which characterizes poor working conditions. On the other hand, bad working conditions in longer period of time will affect employees' motivation negatively, and they can be the cause for leaving current business system.

- **Work organization** is also an important factor that management would need to address in order to encourage employees to make a greater effort and better performance. Good work organization will enable each employee to find their place and contribute to accomplishment of work tasks and objectives of the organization. Revised terms of business operation require work within teams with responsibility and authority. For an

efficient operation of a team and team management, the team composition is of exceptional importance, operation mode and objectives of the team, as a group of people, which are, together with the head of the team, directly involved in realization of a particular task or project. Teams have the responsibility and authority within the new business environment. They are transferred from the managers to the team members, so that they manage their own operations by themselves, they have authorization to make decisions concerning the tasks entrusted to them, and bear the consequences if the task is not completed as it was planned, or if satisfactory performance is not achieved. In contrast, the lack of good working organization cancels employees' devotion effects and affects them discouragingly.

- It is very important that the management fosters fair **interpersonal relationships** and collaboration among employees, creating a climate of understanding and awareness of legitimate rights of workers. Working climate and culture means creation of conditions for progressing at work, personal affirmation, professional development, more responsible, creative and interesting work, awards for work, etc. Such climate and culture will encourage employees to research for possibility of acquiring competences, which will contribute to the increase of work efficiency.

- Extremely important factors which make people think good about themselves and have a positive impact on the reward and motivation system are strong **competitive instinct and learning** throughout life. It is the energy in person, which encourages his/her competitive potential. Competitive instinct is constantly raising the level of knowledge and skills, especially leadership skills, thus creating huge potential for dealing with the increasingly complex and dynamic global economy.

Motivation and reward system means that harmonization and achievement of different individual needs of employees are in line with the goals of business system. Properly placed reward system is directed to bigger productivity of employees and to the success of business system. New system of rewarding encourages high level of motivation and responsibility in taken commitment, which, for business system, is possibility for attracting competent persons (Čamilović, S., Vujić, V. (2007).

Rewarding system involves the existence of incentives in material and non material form. Material incentives are shown in form of salaries, stimulations, encouragements, bonuses, benefits in form of life, social, health and pension insurance, and they can be earned as substitute for inputted labor of employees.

Non-material forms of incentives contribute to the increasing of the motivation of employees by meeting the needs that are not related to money or other material rewards. Non-material work incentives are related to (Vidaković, 2012, 166; Malinić, 2000, 138; Henderson, I.R. (2000); Janković, I. (2006)):

- higher order needs (need for recognition and respect);
- self-affirmation and development of personal skills;
- the opportunity to research within the desired field;
- the opportunity for advancement through the hierarchy of management structure;
- feeling of satisfaction with the achieved performance and achievement of the generally established goals, the work environment, interpersonal relationship in the workplace;
- working conditions, clean and healthy environment; management style, job enrichment, job improving;
- prestige, status, reputation etc.

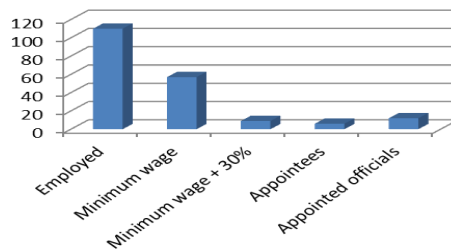
Afore determined reward and motivation system is valid for all business systems, organizations and institutions, whether they perform their activity in private or in public sector. It is valid, also, for systems in local governments. On the example of local government 'City of Priština' with seat in Gračanica, we will survey the development level of employees' reward and motivation system, in the sense of implementation level of theoretical and practically applied forms of rewards in local governments of developed countries (Pantić, S. (2010)).

2. RESEARCH METHODOLOGY AND HYPOTHESIS FORMULATION

The local government unit "City of Priština" was founded in 1946 as an administrative center of the Autonomous Kosovo-Metochia area, within the People's Republic of Serbia, and in 1963, within the Autonomous Province of Kosovo and Metochia. Until the war of 1999, it was headquartered in Pristina and included 14 Secretariats with 271 employees. After the war in Kosovo and Metochia, the local government unit 'City of Pristina' was dislocated to Gračanica, as the state bodies of the Republic of Serbia which should take care about all aspects of the development of Serbian community, although "Constitutional Framework for Provisional Self-Government in Kosovo" was proclaimed by the decree (Uredba br.2001/9) by the Special Representative of the UN Secretary-General, and taking into account the decrees (Uredba br.1999/1 od 25.jula.1999.god.) of the United Nations Interim Administration Mission in Kosovo (UNMIK) and its amendments on the Authority of the Interim Administration in Kosovo.

In other words, it is the area that is now under the patronage of the international community, the area which apart from numerous economic, social, demographic and personnel problems, is faced with a problem of personal safety and the safety of citizens. Also, Albanian Authorities have declared independence in February 2007. On the other hand, The Constitution of the Republic of Serbia, within the Seventh section precisely regulates the territorial organization of Serbia, defining an autonomous province, local government and cities. Named entities have legal entity status (Article 176), and responsibilities for their development. In respect of that, local government 'City of Priština' is governed by principles and system of Republic of Serbia, and employees' motivation and reward system must be based on laws and rules of the Republic of Serbia.

Local government 'City of Pristina', at the time of study, has 194 employees, 110 of them are employed, 57 are working on the minimum wage, 9 of them on the minimum wage +30% (Zaključak Vlade Republike Srbije, 05 broj 02-4586/03-01 od 17.07.2003.god.), 6 are appointees and 12 are appointed officials. Review of this structure is depicted in the Graph 1.

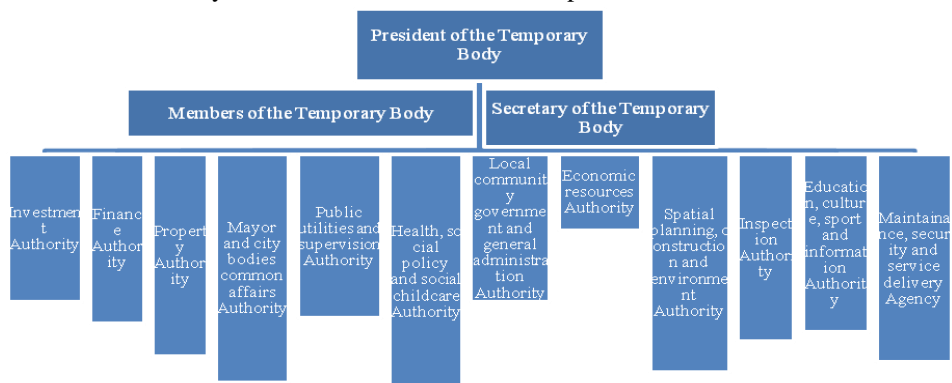


Graph 1 Number of employees of local government – "City of Pristina"

Local government 'City of Pristina' besides development activities, in the operative part provides to its beneficiaries (Zakon o matičnim knjigama („Sl.glasnik RS”, br. 20/2009):

- Document notarization services,
- Issuance of birth certificates,
- Issuance of certificate of citizenship,
- Parental and child support services,
- Cadastral Services (real estate certificate, certificate of ownership, blueprints and deeds),
- Internally displaced persons services provided by the Commissioner for Refugees,
- Payment of fees to the young mothers in collaboration with the Ministry of Labor and Social Affairs etc.

Based on the Rule Book on the organization and Decisions on the city governments (Odluka o gradskim upravama grada Prištine), hierarchical and functional organizational structure of the local government unit "City of Pristina" is established, which ensures the exercise of activities in accordance with the business principles. The organizational structure of the "City of Pristina" is shown in the Graph 2.



Graph 2 Organizational structure of the local government "City of Pristina"

Management structure of the 'City of Pristina' consists of 5 members of the Temporary Body,¹ and the Secretary. Within the local government of the 'City of Pristina' there are 12 Authorities with 2 to 3 divisions as separate organizational units.

The subject of the study is the level of development of motivation and reward system of local government from the aspect of involvement, primarily, theoretically investigated and practically applied form of rewards in developed economies.

Researches are based on the following hypotheses:

Hypothesis 1: In the local government 'City of Priština', employees prefer salaries and material forms of incentives, which are in line with dynamic of salary payment.

Hypothesis 2: Employees in local government 'City of Priština' are not satisfied with current motivation and reward system.

¹ Službeni glasnik Republike Srbije br.073/2013, kao i Rešenje o imenovanju predsednika i članova privremenog organa u Gradu Prištini doneto na Vladi Republike Srbije 24 broj 119-7131/2013 od 16.08.2013.god.

Hypothesis 3: Motivation and reward systems of local government 'City of Priština' do not motivate employees to increase quality, engagement, creativity and innovativeness of work.

The research was conducted with the survey and comparing obtained results with theoretically investigated and practically applied motivation and reward system in developed economies. Keeping in mind the complexity and delicacy of subject research, as well as the fact that the respondents have different levels of education, work profile, different age and interests, the questionnaire for the purpose of this work included 70 working personnel from total number of 110 working personnel in the local government 'City of Priština'.

The survey was conducted according to precise guidelines, so that the obtained data are considered to be reliable. The questionnaires were distributed to the Authorities. From a total of 70 respondents, which is the size of the sample of this survey, 43 respondents answered the questions, which represents 61% of the sample which is considered relevant for this research. With the aim of getting more quality research the respondents are divided according to:

- a) respondent's gender,
 - b) respondent's years of service,
 - c) respondent's education level
 - d) functions in the company.
- a) respondent's gender was defined on two possible levels as follows:
- male respondents,
 - female respondents.

The number and structure of respondents by gender is presented in table 1.

Table 1 Respondent's gender

Employees		Number	Participation percent
Gender	Male	23	54%
Gender	Female	20	46%

b) respondent's years of service i.e. working experience, was defined on the four levels, by number and percentage share, which is shown by Table 2.

Table 2 Respondent's years of service

Employees	Number	Participation percent
From 0 to 10 years	8	19%
From 11 to 20 years	14	33%
From 21 to 30 years	17	39%
Above 30 years	4	9%

c) respondent's education level was defined on the four levels, according to number and percentage share: skilled workers (VKV), secondary education – IV level (SSS), higher degree – VI level of expertise (VŠS) and graduate level – VII level of expertise (VSS), which is shown in the Table 3 below:

Table 3 Respondent's education level

Employees	Number	Participation percent
SW	1	2%
SE	23	53%
HD	2	5%
GL	17	40%

d) functions in the local government defined on the two levels by number and share is shown in Table 4.

- managers,
- executors.

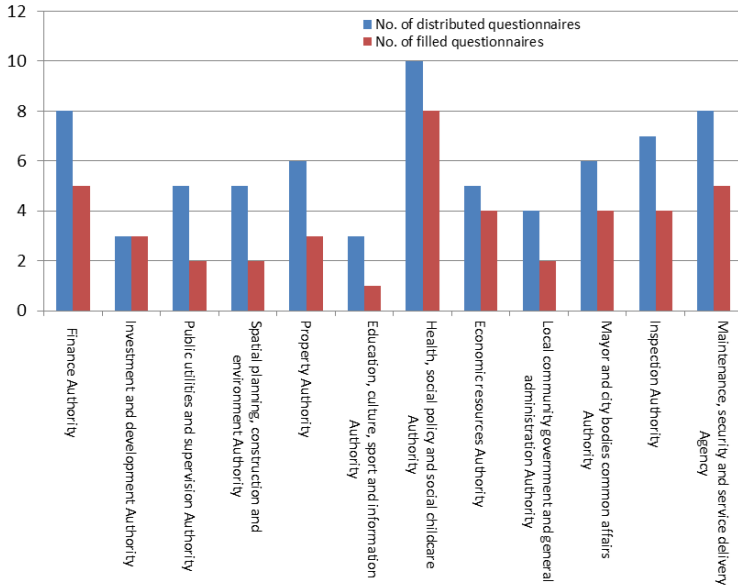
Table 4 Functions in company

Employees		Number	Participation percent
Function in company	Managers	8	19%
Function in company	Executors	35	81%

In addition, Table 5 and Figure 3 show disposition of participants on the 'City of Pristina' Authorities, as well as employees' degree of responsiveness.

Table 5 Distribution of questionnaire participants by the "City of Pristina" Authorities

City Authorities	No. of distributed questionnaires	No. of filled questionnaires	Degree of responsiveness (%)
Finance Authority	8	5	62,5%
Investment and development Authority	3	3	100%
Public utilities and supervision Authority	5	2	40%
Spatial planning, construction and environment Authority	5	2	40%
Property Authority	6	3	50%
Education, culture, sport and information Authority	3	1	33,33%
Health, social policy and social childcare Authority	10	8	80%
Economic resources Authority	5	4	80%
Local community government and general administration Authority	4	2	50%
Mayor and city bodies common affairs Authority	6	4	66,7%
Inspection Authority	7	4	57,14%
Maintenance, security and service delivery Agency	8	5	62,5%
Total	70	43	61,4%



Graph 3 Distribution of questionnaire participants by the "City of Pristina" Authorities

All employees in local government filled out the same questionnaire, which included a total of 11 multiple-choice questions.

3. RESEARCH RESULTS AND DISCUSSION

The main indicators of the sample structure with respect to the essential characteristics of the respondents are presented within this research as tables and graphics. In data processing software packages such as Microsoft Office Word 2007 and Microsoft Office Excel 2007 have been used. The total number of the respondents was 43. The number of female respondents was 23, and male 20. The respondents that have 0-10 years of service were 8, 14 respondents have 11-20 years of service, 17 respondents have 21-30 years of service and 4 respondents have above 30 years of service. Among the surveyed there were 8 managers, and 35 executors. The majority of sample consists of male respondents, who have 21-30 years of service, secondary education and are executives.

During the research respondents chose from the offered answers. The questions have been conceived according to the main characteristics of the new motivation and reward system.

Satisfaction with a job is one of important assumptions for growing work intensity or productivity, which is essential of new motivation and reward system, from which arises the first question:

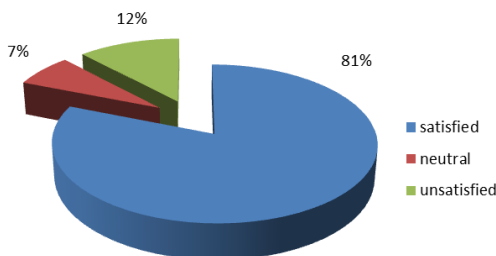
Question number 1:

Are you satisfied with your job?

Offered answers:

- satisfied,
- neutral,
- unsatisfied.

Results in percentages are given on the graph 4.



Graph 4 Structure of answers to the question: Are you satisfied with your job?

As you can see on the graph, 81% of the respondents were satisfied with their job, while 7% were neutral, and 12% of the respondents were unsatisfied. This proves that more than half of the respondents were satisfied with their job, but there are some which are unsatisfied and neutral. 8 respondents are unsatisfied or neutral, which shows that there is a growing tendency towards changing the job and leaving the local government. Objectively there is no chance for changing or leaving current job position in given circumstances, because there are no attractive jobs in local government at the present, and by leaving local government they will practically lose their job, because there are no other chances for finding jobs on their territory.

Good working conditions give, beside salary that secures material condition for existence, activation and creative energy, and in line with that we ask them the second question:

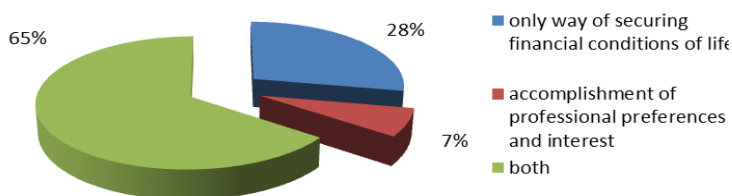
Question number 2:

What does the job that you are currently doing in the company mean to you?

Offered answers:

- only a way of securing financial conditions of life,
- accomplishment of professional preferences and interests,
- both.

Results in percentages are given on the graph 5.



Graph 5 Structure of answers to the question:

What does the job that you are currently doing in the company mean to you?

As we can see on the graph, 68% of respondents chose the third answer which means that the largest number of respondents believes that their job will bring them both the financial conditions of life and accomplishment of professional preferences and interests. It may show that the largest number of employees in local government are assigned jobs and tasks for which adequate salary is determined and on which professional propensity and interests can be realized. However, 28 % of respondents said that their job represented to them a way of ensuring the financial conditions of life, not a way for realization of professional affinity and interest, and that a limitation of possibility for finding other jobs, forces them to stay on these jobs and tasks. It is interesting that 3 respondents or 7 % of the respondents see their jobs and tasks like a basis for realization of professional affinity and interest.

As one of important tasks of management in all business system, including the local government, is permanently following work and dedication of employees, and their results, with the aim of objective and fair evaluation and measurement of height and shape of rewards, it is logical to answer the next questions:

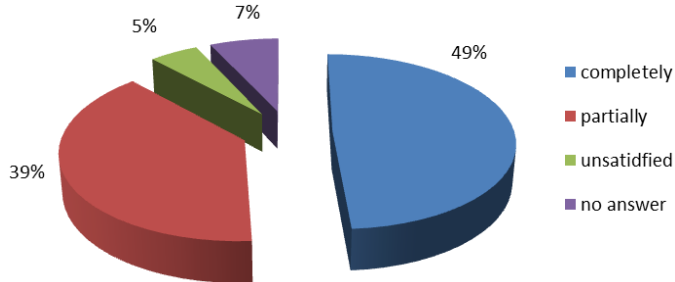
Question number 3:

Are you satisfied with the attitude of your immediate supervisor towards you?

Offered answers:

- very satisfied,
- mostly satisfied,
- not satisfied,
- no answer.

Results in percentages are given on the graph 6.



Graph 6 Structure of answers to the question: Are you satisfied with the attitude of your immediate supervisor towards you?

This graph clearly shows that 49 % of the respondents claim that their work and dedication are permanently growing and that their immediate supervisor have correct attitude towards them, but under the economic crisis the reward in any form is absent, except maybe occasional commendations. However, 39 % of the respondents consider that the attitude of immediate supervisors is only periodically correct. Two respondents consider that their work is not evaluated in the adequate way, and three respondents have not formed an opinion about the relations between the superior and inferior.

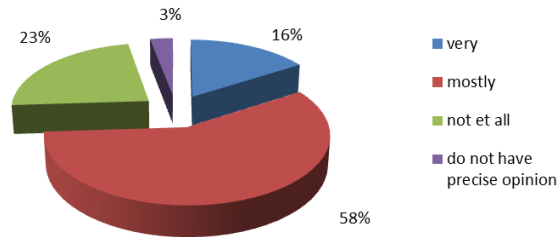
The salary is a key element of all motivation and reward system, so it logically imposed the following questions:

Question number 4: Are you satisfied with your salary?

Offered answers:

- very satisfied,
- mostly satisfied,
- not at all satisfied,
- I have no precise opinion on the topic.

Results in percentages are given on the graph 7.



Graph 7 Structure of answers to the question: Are you satisfied with your salary?

58% of the respondents were partly satisfied with the salary level. General discontent was manifested by 23% of the respondents. Relatively small number of respondents, only 7 or 16% are very satisfied with their salary, and 1 respondent does not have precise opinion about that. Besides that, we can conclude that a very small number of respondents is satisfied with their salary level.

Incentive in any motivation and reward system appears in material and non material form. Which type of incentives are performed by employees in analyzing local government was the fifth question.

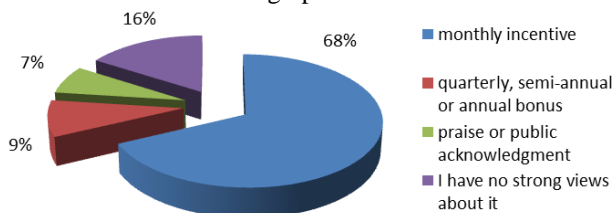
Question number 5:

What type of incentive, in your opinion, has the greatest impact on the employees?

Offered answers:

- monthly incentive,
- quarterly, semi-annual or annual bonus,
- praise or public acknowledgment,
- I have no strong views about it.

The structure of answers is shown in graph 8.



Graph 8 Structure of answers to the question:

What type of incentive, in your opinion, has the greatest impact on the employees?

On the graph it can be clearly seen that the incentive in material form is preferred by 77% of the respondents. From that number, 29 respondents preferred monthly incentive to quarterly, semi-annual or annual incentive. These answers are logic, having in mind the answers to question number 5. Only 3 respondents prefer praise and public acknowledgment, as non-material form of incentive. Through these answers to questions number 5 and 4, the hypothesis number 1 is proven, which means that the local government 'City of Pristina' employees prefer only salary and material form of incentives which are delivered with the dynamics of salary disbursement.

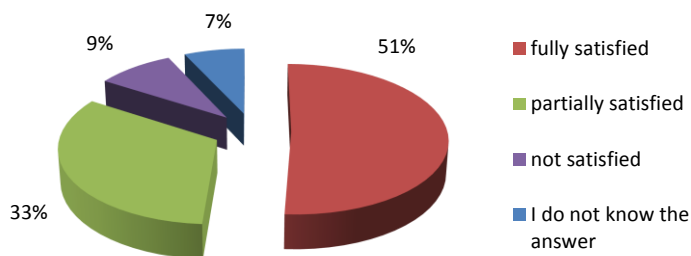
The possibility of advancing in carrier is one of the important aspects of working conditions, as an element of motivation and reward system, and because of that for the system evaluating it is necessary to ask the following question.

Question number 6: Are you satisfied with the opportunities for advancement?

Offered answers

- fully satisfied,
- partially satisfied,
- not satisfied,
- I do not know the answer.

The structure of answers is shown in graph 9.



Graph 9 Structure of answers to the question:
Are you satisfied with the opportunities for advancement?

From 43 respondents, 6 of them believe that they have conditions for advancement, 21 of them consider that conditions are partially satisfactory, 13 respondents believe that good conditions do not exist and 3 respondents do not have any opinion about the conditions for advancement.

Good motivation and reward system stimulate work quality, engagement, creativity and inovativity, and because of that we ask the respondents to answer the next question.

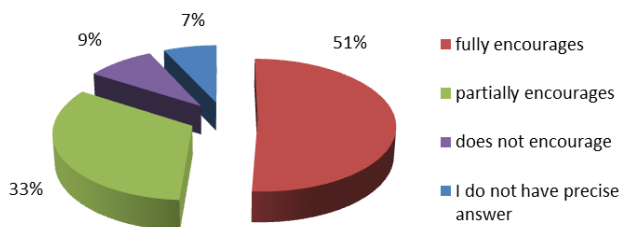
Question number 7:

Does, in your opinion, the reward system within the local government encourage quality of work, devotion, creativity and innovativeness?

Offered answers:

- fully encourages,
- partially encourages,
- does not encourage,
- I do not have precise answer.

The structure of answers is shown in graph 10.



Graph 10 Structure of answers to the question: Does, in your opinion, the reward system within the local government encourage quality of work, devotion, creativity and innovativeness?

On the graph it can be clearly seen that only 3 respondents, or 7%, believed that the reward system within the company fully encouraged quality of work and devotion, 22 of them, i.e. 51%, said that it was partially encouraging, 14 respondents (33%) said that it was not encouraging, and the rest of respondents do not have precise answer. Having in mind the above stated, we proved hypothesis 3, that motivation and rewarding system in local government 'City of Priština' does not motivate employees to work with more effort, devotion, creativity and inovativity.

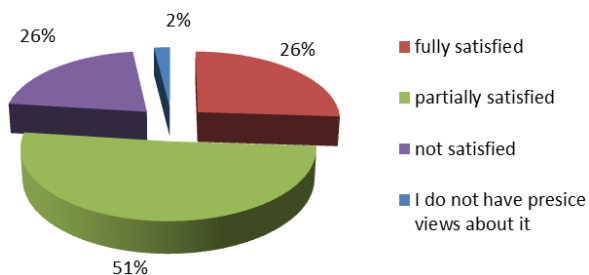
Question number 8:

Are you satisfied with the emphasis that local government puts on vocational and professional education and staff development (seminars, foreign languages, training courses, workshops...)?

Offered answers:

- fully satisfied,
- partially satisfied,
- not satisfied,
- I do not have precise views about it.

The structure of answers is shown in graph 11.



Graph 11 Structure of answers to the question: Are you satisfied with the emphasis that local government puts on vocational and professional education and staff development (seminars, foreign languages, training courses, workshops...)?

The graphical illustration clearly shows that more than 50% of respondents are not satisfied with emphasis that the local government puts on vocational and professional education and staff development; 26% of respondents are partially satisfied, as many as 21% of respondents do not have an answer to this question. Only 2% of respondents are

satisfied with emphasis that the local government puts on vocational and professional education and staff development. All that goes in favour of hypothesis 3..

Conditions necessary to be met for promotion at work are an important component of quality motivation and reward system. Whether such conditions exist was the next question.

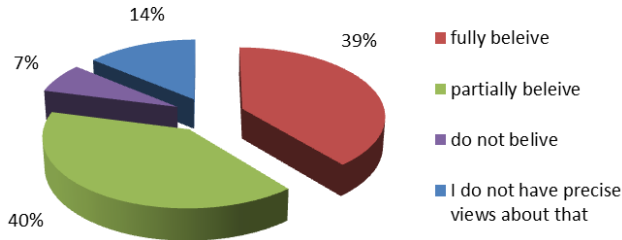
Question number 9:

Do you believe that you have all conditions for career advancement within the Authority?

Offered answers:

- fully believe,
- partially believe,
- do not believe,
- I do not have precise views about that.

The structure of answers is shown in graph 12.



Graph 12 Structure of answers to the question: Do you believe that you have all conditions for career advancement within the Authority?

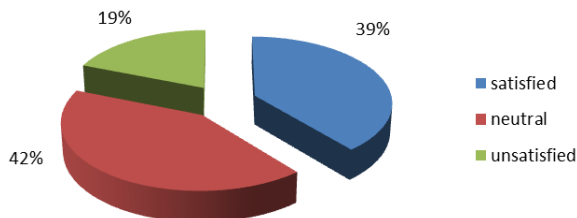
We obtained the following results from the survey: 6 respondents (14%) believe they have all conditions for advancement within the company, 17 respondents (39%) believe that they have partial conditions, 17 of them (40%) said that there are no satisfying conditions, and only 3% of the respondents did not have precise views about it. By looking at these answers we can get the impression that employees do not have all the necessary conditions for career advancement within the 'City of Pristina', headquartered in Gracanica.

Question number 10: If you could change your job you would be:

Offered answers:

- satisfied,
- neutral,
- unsatisfied.

The structure of answers is shown in graph 13.



Graph 13 Structure of answers to the question on willingness to change jobs

Because the respondents answered as follows: 17 respondents (39%) would be satisfied if they changed their job, 18 of them, which represents 42%, gave a vague answer, while 8 respondents would be unsatisfied with changing their job; it can be concluded that majority of the respondents were not satisfied with their current job, and expressed a desire to change it.

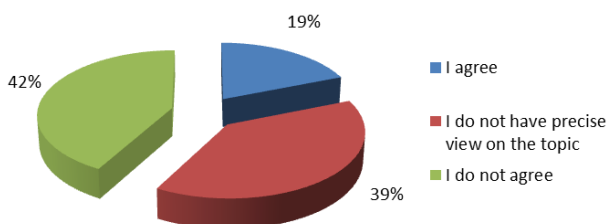
Question number 11:

Do you agree with the research results which suggest that the motivation of employees is above the earnings?

Offered answers:

- I agree,
- I do not have precise view on the topic,
- I do not agree.

The structure of answers is shown in graph 14.



Graph 14 Structure of answers to the question: Do you agree with the research results which suggest that the motivation of employees is above the earnings?

Based on the answers to the last question from the questionnaire, it can be seen that the greatest motivator in the 'City of Pristina' is salary, and that there is no investment in new forms of rewarding (by professional specialization, seminars, training courses etc) in order to adopt to the newly formed business conditions and changes

CONCLUSION AND RECOMMENDATIONS

Dramatic changes in the environment, during which the traditional reward and motivation systems have "lost track of time", created the need for establishing a new reward and motivation system based on non-material form of rewarding that is characteristic of new business environment. Modern management puts the greatest emphasis on people, recognizing their knowledge, skills and abilities as its most valuable resource. According to the new concept of employees management, motivation and rewarding, special importance is attributed to the problem of hiring a person as an independent individual and holder of professional knowledge. In order to achieve success in business, economic entities and local government units need to motivate and adequately reward employees for performing entrusted tasks. It is necessary to build such a reward system that will serve the motivation of employees that will represent the optimum combination of financial and non-financial rewards determined by the objective evaluation of the contribution of employees to achieving the goals of organization.

Quality research of motivation and reward system in local government 'City of Priština', with seat in Gračanica, showed that system is developed in framework of specific political, security and economic conditions, and as such, system could not be capable of developing in the sense of adoption of non-material motivators that are prevalent in modern systems of motivation and rewards. Such motivation and reward system had created low level of employees' satisfaction and productivity, without the possibility of promotion and progress in career, system in which the salary is the main motivator, non-material rewards appear in rudimental form, and conditions and form of work organization are not far from traditional systems. The perspective of such motivation and reward system can be relatively good, if foreign capital intended for the arrangement of public sector came forth from the Republic of Serbia, and at the end in public sector of Serbian community at Kosovo and Metochia.

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MOTIVACIJA ZAPOSLENIH I SISTEM NAGRAĐIVANJA U LOKALNOJ SAMOUPRAVI

Od početka 80-ih godina prošlog veka, mnoge promene u savremenom poslovnom okruženju su doprinele tome da privreda Srbije ima problema sa unapređenjem poslovanja i motivacije zaposlenih. Poslovno poboljšanje, motivacija zaposlenih i generisanje znanja su svakako veliki problemi u većini zemalja u tranziciji. Suočeni sa novim okolnostima, poslovni sistemi zahtevaju fleksibilno ponašanje prema promenama u poslovnim uslovima sredine. Znanje i timski rad su glavni i ključni pokretači rasta poslovne produktivnosti u svim oblastima poslovanja, i zbog toga, motivacija i nagrađivanje zaposlenih su uslov i pretpostavka rasta produktivnosti u privatnom i javnom poslovnom sektoru. U ovom radu autori istražuju i analiziraju sistem motivacije i nagrađivanja zaposlenih u lokalnoj upravi, koja se razvija u specifičnim političkim, bezbednosnim i ekonomskim uslovima.

Ključne reči: *savremeni uslovi poslovanja, system motivacije, nagrađivanje zaposlenih, motivatori, timski rad.*

DEVELOPING BONUS PLANS FOR MANAGERS IN ORDER TO MAXIMIZE VALUE FOR OWNERS

UDC 005.88

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Abstract. *Rewarding managers in the corporate enterprise means that they receive profit for achieving planned performance while for achieving above the planned level they receive various types of stimulation. Bonuses are the most common form of incentives for managers that are paid in proportion to their contribution to the success of the business. In the corporate enterprise it is necessary to develop such a system of rewarding managers which will motivate them to act in accordance with the interests of owners and encourage them to undertake those risky business activities that will contribute to the maximizing of the value for owners.*

In order to ensure guidance for managers towards the continuous improvement of companies' performances, developed bonus plans should be based on performance measures important to the owners (measures are based on: concept of accounting result, concept of economic results and cash flow concept). For rewarding top managers, the application of measures based on the concept of the accounting result that directly correspond to the price of shares is the most appropriate for the calculation and payment of bonuses (yield rate implied by the price of shares, yield rate provided by the manager in the strategic plan, as well as the price of the capital). For managers of business units it is not always possible to establish a direct link between rewarding and the movement of share prices, therefore the most suitable criteria for the calculation of bonuses are the criteria based on the concept of economic result (the most suitable is EVA) and criteria based on the cash flow (the most suitable is SVA). Rewarding managers on the operational level of management is linked to performance, which in essence represents macro or micro value drivers, that can be directly linked to the performance of these managers.

Rewarding managers also implies that short-term and long-term incentives are balanced in their compensatory package, which also applies to the bonuses. Efficient compensatory system should contribute to the harmonization of the individual goals of the managers and the objectives of the owners, in the short and long term, and to ensure fair distribution of bonuses in the management structure. Rewarding managers by bonus disbursement should ensure readiness and loyalty of the management to achieve the expected yields for the owners not only in short, but in the long run as well.

Received November 14, 2014 / Accepted March 25, 2015

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Key Words: *bonus plan, bonus bank, bonus, investment yield, economic value added, shareholder value added*

INTRODUCTION

In the modern corporate enterprise, in which the function of ownership is separated from management function, the development of compensatory system (reward system) represents an important step in achieving the primary objective of business i.e. maximizing value for owners. Despite the fact that the goals of the managers often differ from the objectives of shareholders, the task of management is to realize the expectations of the owner.

Different interests of managers and owners can evoke agency problem (the problem of decision-making by management which are not in the interest of the owner). In addition to solving this problem, the development of an adequate system of remuneration should contribute to directing the behavior of managers and other employees towards continuous improvement in business performance and creating value for its owners. This requires for the compensatory system to be based on performance criteria important for the owners. Selected performance criteria should enable the determination of the contribution of managers to the achieved success and level of adequate financial and non-financial incentives that may be significant for meeting the objectives of managers and owners, and thereby reducing agency costs.

As components of compensation packages for managers there appear: earnings (basic salary), stimulations, various types of benefits (supplementary pension insurance, life insurance, etc.) and other benefits (soft loans, free legal and financial advice, paid seminars, as well as some non-monetary benefits). Rewarding a manager entails that they gain profit for the achievement of planned (target) performance, whereas achievement above the planned level brings special incentives. In the structure of incentives most frequently occur: raise of the base salary on a monthly or annual basis, special awards for achieving above average results, lump-sum payments (for professional engagement for example), options on shares for top managers and others. Still, the best-known form of stimulation are bonuses, which are not an integral part of their earnings, but are realized on the basis of the contribution of managers to the business success of the company.

The planning of a bonus in the short run is done through bonus plans, and bonus payments may be immediate or delayed, usually in cash. Long-term motivation of managers is realized through various instruments of their involvement in the ownership, typically through a free allotment or sale of shares under certain conditions. As far as long-term planning of a bonus as a form of compensation for managers is concerned, it is achieved through a bonus bank, as a special bonus fund.

In the compensatory system based on values there are multiple solutions for rewarding managers at different levels of governance through bonuses, and they vary in terms of performance criteria through which the performance of managers is monitored (the performance criteria based on: the concept of accounting result, the concept of economic results and cash flow concept).

The subject of this paper are bonus plans developed in order to reward managers in accordance with their contribution to the success of the business based on various performance criteria significant to the owners of the capital. The aim is to show the different types of bonus plans for managers who depart from the performance criteria based

on different concepts of results (the concept of accounting result, the concept of economic results and cash flow concept), as well as to highlight their advantages and disadvantages in the context of the motivation of managers to contribute to maximizing value for capital owners in the corporate enterprise.

1. TRADITIONAL BONUS PLAN BASED ON THE CONCEPT OF ACCOUNTING RESULTS

Based on the performance criteria significant to the owners bonus plans for managers differ: bonus plans based on the concept of accounting results, bonus plans based on the concept of economic performance and bonus plans based on the cash flow concept [12, 153-170]. This division is in accordance with the classification of criteria of success significant for the owners of the capital in three groups [12, 65-103]: criteria based on accounting profits (EPS, ROI, RONA, ROCE, ROE)¹, criteria based on economic result (EVA, MVA)² and criteria based on cash flow concept (FCF, ROGI, CFROI, TSR, TBR, CVA, SVA)³.

Bonus plans for managers based on the concept of accounting result in the calculation and payment of bonuses start from the accounting performance criteria such as absolute criteria (operating profit, net profit, etc.) and different types of yield rates on capital invested in the business.

The traditional bonus plan is based on the concept of accounting result and has the following essential characteristics [21, 131-133]:

- target bonus is related to planning (target) financial performance,
- the minimum level of performance that must be realized in order to achieve bonus is provided and
- there is no upper limit for the payment of a bonus.

The traditional bonus plan based on the concept of accounting result is presented in figure 1.

In most cases, traditional bonus plan provides a minimum level of performance which provides rewards at the level of 80% of target performances. Below this level, the bonus is not earned. The maximum bonus is calculated at the level of 120% of target performance. Traditional bonus plans, mainly in corporations in developed countries, include a payment of a 50% bonus in the case of a minimum level of performance, and 150% reward at achieving maximum performance level.

¹ Earnings per share (EPS), Return on investment (ROI) Return on net assets (RONA), return on capital employed (ROCE), return on equity (ROE)

² Economic profit or economic value added (EVA), market value added (MVA)

³ Free cash flow (FCF), cash flow return on gross investment (ROGI) Cash flow return on investment (CFROI), Total shareholder return (TSR) Total business return (TBR), cash value added (CVA), Shareholder value added (SVA)

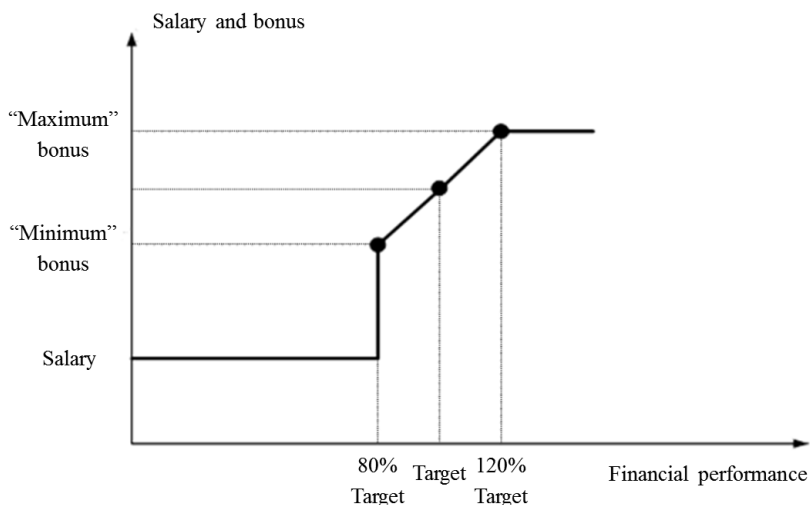


Fig. 1 Traditional bonus plan based on the concept of accounting result

Source: [21, 132]

Disadvantages of traditional bonus plan from the standpoint of maximizing value for the owners are the following:

- accounting performance criteria (operating profit, yield rate on capital employed) often do not have a strong connection with creating value for owners [21, 133]; added value for owners need not always be achieved if there is an increase of accounting performance criteria, which can happen when a positive yield rate on investments can not cover the total cost of capital, and there will be a reduction in shareholder value, although there is no basis for compensation payment;
- this reward system may condition speculative behavior in managers of business units; this implies that, in the case where managers have achieved performance which provides maximum bonus in the current period, they can postpone income for the next period; that way they can apply a redistribution of income in successive accounting periods, allowing them a maximum bonus for a longer period;
- there may be problems in defining new performance targets for the next accounting period; successful managers of business units will be punished with new bonus plan for the next fiscal year because of the reduced opportunities for achieving superior performance that are anticipated at a higher level and are more difficult to achieve compared to the previous period; unsuccessful managers of business units will, in turn, be rewarded because their new bonus plan reduces the level of performance targets and does not set ambitious goals;
- traditional bonus plan may initiate a conflict while achieving the goals (short and long-term) of managers and owners; with this bonus plan short-term results are pushed in the foreground, which is often only in the interests of managers but with long-term negative consequences for both managers and owners;
- traditional bonus plan is not conducive to good managers, while for mediocre managers fees are guaranteed;

- managers set the target performance and report on their accomplishment, which can lead to manipulation by managers which can affect the level of bonus paid; on the one hand, traditional bonus plans can often be subjective, because managers are the ones who design the financial parameters of success, which opens up space for underestimating potential (target) levels of performances; On the other hand, inadequate accounting policies and low targets performances may influence managers in the financial statements to present unrealistically high achieved performance and achieve high bonuses [5, 103].

In practice, a linear bonus plan is known, based on performance criteria based on the concept of accounting result which seeks to limit, i.e. eliminate manipulating of managers to some extent, which can lead to poor management decisions and have a negative impact on the value for the owners. This bonus plan emphasizes the principle of paying for realized performances, rather than potentiate the determination of objectives and the lower and upper limit of the bonus, so that it defines a bonus formula by which the bonus is directly tied to specific performances [11, 129]:

$$\text{Achieved performance} \times \% \text{ Bonus}$$

If, however, an objective is determined, formula for determining bonuses would look like this:

$$\text{Target performance} \times \text{Effectiveness of achieving target performance} \times \% \text{ bonus}$$

Linear bonus plan is shown in figure 2:

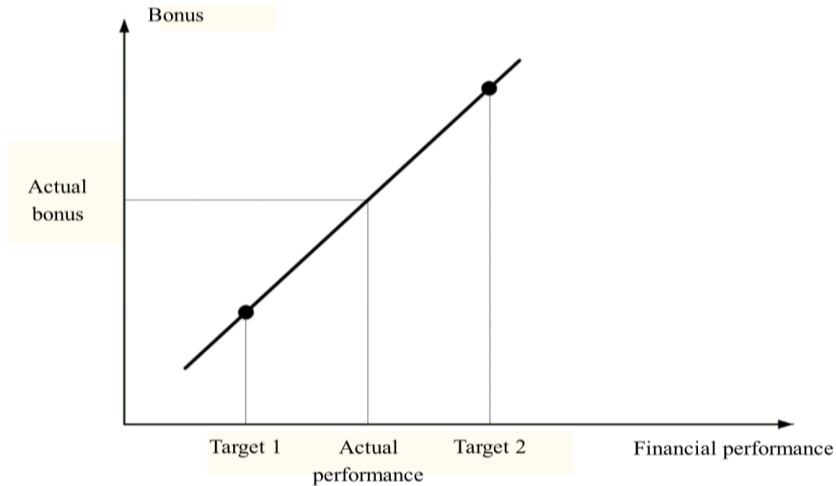


Fig. 2 Linear bonus plan
Source: [8, 98]

The position and slope of the bonus in the chart are very important. If this curve moves to the right in the creation of the compensation plan, it means that the possibility to receive bonuses is hindered, while the movement of the curve to the left indicates the facilitation of opportunities to obtain bonus. This bonus plan allows you to set the curve

of the bonus on long-term projection of accounting performance criteria and the development of enterprise, which is an advantage over the traditional bonus plan. The disadvantage is that it is not easy for the managers to accept the linear model of determining bonuses because objective-based bonuses are deeply embedded in their thinking. Also, the disadvantage of this bonus plan is that the success of its application will depend on selected accounting performance criteria that are used to define the objectives, positioning of the bonus line and its slope.

It should be noted that the bonus plans based on the concept of accounting result are particularly suitable for the calculation and payment of incentives to top managers. To determine the bonuses of top managers the most appropriate yield criteria based on the accounting concept of results which directly correspond to the price of shares are as follows: yield rate implied by the share prices and the yield rate provided by the manager in the strategic plan, but also the cost of capital [17, 110]. Theorists who favor these performance criteria argue that their use of remuneration enables harmonizing of the interests of top managers with the interests of the owner and that they should be rewarded only if they meet or surpass market expectations⁴.

Bonuses for managers of business units (divisions) can also be determined using the bonus plans which start from performance criteria based on the accounting concept of results. Most appropriate performance criteria for this level of managers are: net gain⁵, the rate of return on capital employed (ROCE), return on equity (ROE)⁶. However, as mentioned, performance measures do not directly correspond to the share price, they are considered insufficiently appropriate for rewarding managers of business units.

For managers at lower (operational) levels of management bonus plans based on performance criteria that fall within the domain of macro and micro drivers of value are suitable. Usually, these criteria are based on the concept of accounting result complemented by specific non-financial criteria that can be linked to the performance of the managers at this level of management.

The deficiencies of the performance criteria based on the accounting concept of results influenced the change in the basic postulation of successful business enterprises and in the placing of new demands in the sense of performance measurement and enterprise management. All this has resulted in the development of more suitable concepts of performance measures in the function of creating shareholder value. Certain conditions should be met for a performance measure to show success of the company and an increase in the value for owners [21, 34]:

- there should exist an adequate database on the basis of which performance measure may be determined in practice;

⁴ In the setting of the system for rewarding managers the following relations are typically used:

Capital sum of market expectations = Corporate rate of return implied in the price of shares - capital cost, and

Planned surplus or deficit = Corporate rate of return anticipated strategic plan – Corporate rate of return implied in the price shares.

The difference, however, between the capital sum of market expectations and planned surplus (or deficit) is a part of the capital sum of market expectations that managers must achieve. For more see: A. Rappaport, "Creating Shareholder Value: A Guide for Managers and Investors", The Free Press, 1998, p. 110.

⁵ Bonus Plan defines a certain percentage of the realized net profit of business units (divisions).

⁶ The application of these rates implies the definition of profitability rates and comes to the profit potential that divisional manager needs to realize. If they achieve lower profitability, there is no basis for stimulation, but for punishment. For the realized rate of profitability higher than the target, divisional manager is rewarded.

- it should provide an opportunity for detailed analysis;
- there should exist a direct relationship with the created value of an enterprise;
- it should evaluate the performance of the company, taking into account the risk and expected yield of the owner;
- there should be a possibility of comparison with other enterprises;
- it should also allow use in lower organizational units of the enterprise;
- it should stem from the assumption that the main goal of the enterprise is the long-term growth of capital value.

With this in mind, it is considered necessary that the bonus plan for managers proceed from those performance measures that would be a good basis for remuneration, on the one hand, and in relation to the contribution of managers to the created value for owners, on the other hand. Hence, in practice, there has been the development of bonus plans based on performance criteria that enable better measurement of projected and created value for the owners in relation to criteria based on the accounting concept of results. These are bonus plans based on the concept of economic results and cash flow concept, which will be presented in the next two sections.

2. BONUS PLAN BASED ON THE CONCEPT OF ECONOMIC RESULT (ECONOMIC PROFIT)

The group of criteria based on the concept of economic result starts from the economic result (economic profit), which represents the difference between the accounting net result (profit) and cost of total capital (own and borrowed). The concept of economic profit in contemporary business becomes the conceptual basis for the development of new criteria for measuring the newly created value for owners (EVA, MVA, discounted economic profit) [12, 153-184]. Economic Value Added (EVA)⁷ occurs in the 90s of XX century, when it was patented as the "invention" of Stern, Stewart & Co.; it is similar to economic profit with the inclusion of numerous modifications of accounting data when calculating⁸. Among other things, EVA has proved to be a good measure for the development of bonus plans for managers, because it shows the absolute amount of value that the enterprise had realized or lost during the year [19, 66]. In theory and in practice there are two known versions of the bonus plans based on the concept of EVA: original and modern bonus plan based on the concept of EVA.

The original version of the bonus plan that is based on the concept of EVA has been an important tool for the creation of strong, sustainable and cost-effective incentives. Original EVA bonus was calculated at a certain percentage of EVA [21, 135]:

⁷ EVA is calculated as follows:

a) *Commercial approach: $EVA = NOPAT - (WACC \times IC)$, wherein:*

NOPAT - net business (operating) profit after tax

WACC - average weighted price of capital

IC - invested capital

b) *Financial approach: $EVA = (ROIC - WACC) \times IC$*

ROIC - profitability of invested capital

(ROIC - WACC) – range of return

IC - Invested Capital

⁸ There are 160 possibilities to adjust the gain according to generally accepted accounting principles (GAAP), however, it is not necessary in every enterprise to make all the adjustments, given that some components are of negligibly small value. Because of this it is considered that the economic value added (EVA) is only one of the variants of residual profits.

$$\text{Bonus} = x\% \times \text{EVA}$$

which can be shown in figure 3:

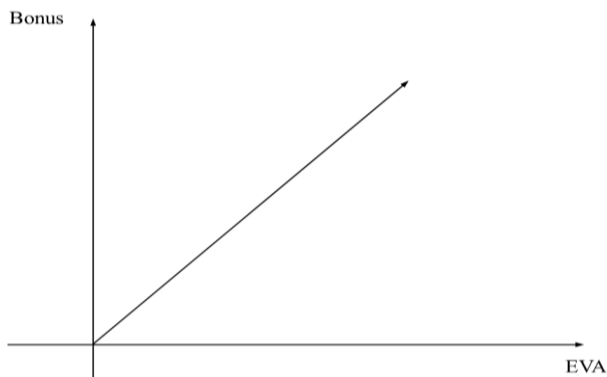


Fig. 3 EVA original bonus plan

Source: [21, 135]

Compared to traditional and linear bonus plans which are based on the accounting performance criteria, the original EVA bonus plan provides realistic bonus payments in accordance with the contribution of managers to the created value for owners. However, the EVA bonus plan was not fully able to realize all the goals of compensations. The shortcomings of the original bonus plan are as follows:

- this bonus plan provides bonuses to managers of business units in the case when the rate of return on investment is higher than the cost of capital; if the rate of return on investment equals the cost of capital, managers will not get bonuses; in cases where managers improve performance (for example from a negative rate of return to the rate of return that corresponds to the cost of capital) it is unfair because they lose their bonuses;
- this bonus plan can be expensive for the shareholders in the event of problems in calculating EVA criteria; for example, if the capital is stated at historical accounting value instead of the market value, EVA will be positive, even if the owners do not get a fair return on invested capital;
- even when EVA is well calculated, the bonus plan does not take into account the fact that the market value of the company is reflected next to the property value and the value of possible future growth; as the shareholders pay for both components of the market value of the company, they expect a return of the entire market value of their investment and future growth; positive EVA enables the realization of the first component only, but if there is a decrease in stock prices at the same time, EVA bonus plan will contribute to the creation of high costs for shareholders because they are obligated to pay a bonus; conversely, negative EVA, which is accompanied by an increase in stock prices and the creation of opportunities for future growth, will condition the absence of bonuses;
- complicated calculation of EVA performance can increase the effective cost to shareholders and make this bonus plan expensive for them, and therefore, in order to create incentives that will not result in excessive costs for the shareholders, it is necessary to focus on changes in EVA performance; this has led to the development of

the original EVA bonus plan in terms of its reliance on the percentage of a certain level of EVA and the percentage of change in EVA:

$$Bonus = (x\% \times EVA) + (y\% \times \Delta EVA).$$

Such calculation of bonuses avoids the problems that occur with the original bonus plan, because the percentage that is applied to the expected EVA can provide a good incentive for managers, while the percentage from the improvement of EVA can provide a competitive bonus.

Further development of the bonus plan has been directed towards designing a modern bonus plan that is based on the improvement of EVA criteria. There are three reasons for this:

- changes (improvements) of EVA criteria enable efficient incentives,
- changes (improvements) of EVA can be calculated and applied in every company (in those with a positive as well as in those with a negative EVA) and
- EVA changes (improvements) provide a direct connection between a bonus and the return to the shareholders.

The total bonus in modern EVA bonus plan equals the sum of the target bonus and the percentage (fixed percentage of excess EVA improvement) of differences between the actual and expected EVA improvement [21, 139]:

$$Bonus = Target\ bonus^9 + Incremental\ (additional)\ bonus, \ or$$

$$Bonus = Target\ bonus + y\% (\Delta EVA - EI)$$

ΔEVA – improvement of EVA (EVA 1 - EVA 0)

EI – expected improvement of EVA (EVA interval)

y – fixed percentage of excess EVA improvement.

Representation of modern EVA bonus plan is given in figure 4:

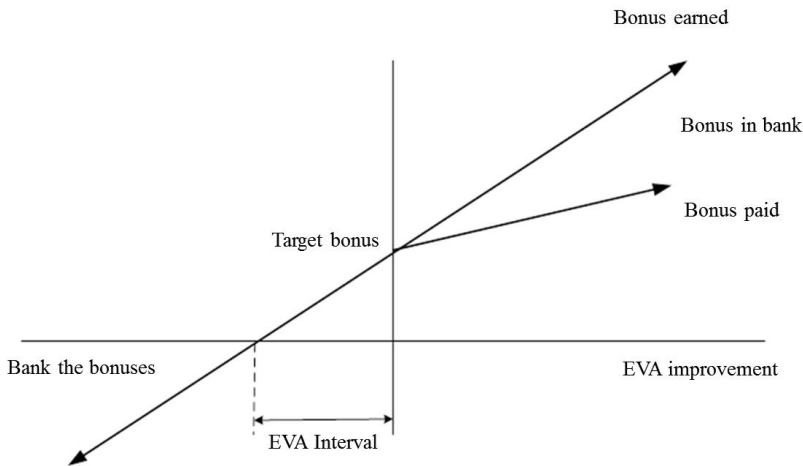


Fig. 4 Modern EVA bonus plan

Source: [21, 139]

⁹ Target bonus, according to the advocates of such a plan is necessary to make it more consistent with the practice in the labor market in relation to the payment of bonuses for planned or expected performance.

The chart shows that the total bonus earned is the summation of the target bonus and a fixed percentage of EVA improvement. The target bonus is consistent with the practice of bonus that is valid at the market manager, and is provided on the basis of expected EVA improvement.

Contemporary bonus plan is determined annually in a process called calibration of bonus plans¹⁰. Three key points are determined in the process [21, 141]:

- target bonus,
- expected EVA improvement and
- EVA interval (EI).

The target bonus of an enterprise/ business unit is determined at the level of the target bonus of the enterprise with similar competence. Business unit managers will achieve the target bonus if they achieve the expected EVA improvement. Then the expected EVA improvement should bring the return on the market worth of their investments in the amount of the price of the capital to the shareholders, which is identical to their expectations. If the expected EVA improvement is exceeded, managers will gain bonus above target bonus, however if the expected EVA improvement is not achieved, their bonus will be below the level of the target bonus.

In order to truly align the interests of managers and owners, the expected EVA improvement should reflect investors' expectations in terms of performance. Only when the expected improvements of EVA are realized will the investors get a refund i.e. the return on market value of their investments. A good approach in evaluating the expected EVA improvement involves extrapolation of a series of future expected EVA improvements which includes the current stock price of the enterprise¹¹. Also, the EVA advocates recommend the use of perennial and predefined expected EVA improvement, because the annulment of EI each year can result in rewarding of poor performances with lower EI and punishing of good performances with higher EI.

EVA Interval (EI) should be defined so that managers receive zero bonus for achieved zero level of return (refund) for shareholders. To determine the EVA interval it is necessary to establish the excess return on the market value of investments (enterprises) via the formula [21, 142]:

$$\text{Excess return} = \text{WACC} \times \text{market value of investments in the company}$$

WACC – average weighted cost of capital

EVA interval is then determined as follows:

$$\text{EVA interval (EI)} = \text{Excess return} / ((1 - \text{WACC}) / \text{WACC}).$$

When the adjustment of the expected performance of EVA and EVA interval (EI) is based on market expectations, it is possible to align managers' fees with investors' return. However, that can put a lot of pressure on managers and create a problem for their retention and motivation. In order to prevent this, the adjusting of the expected performance of EVA and EI can be performed, consistent with the desired probability of zero bonus during the period covered by the plan.

¹⁰ Bonus plan calibration - According to Young, S., O'Byrne D., F, S.

¹¹ The approach in the implementation of EVA in the original EVA bonus plan involved a combination of EVA from the previous years and set goals related to EVA in previous periods.

A problem that can arise from focusing on EVA performance of the current period at the expense of future performance can be solved by using a system of EVA bonus bank. The basic idea behind EVA bonus bank is that managers are only paid a portion of the bonus (one-third) which had been earned during the period, while the remaining part (two-thirds) of the bonus is transferred to the next year. EVA bonus bank provides:

- taking into account the long term interests of the owner,
- limitation of large variations in the payment of bonuses,
- payment of bonuses to managers in accordance with the improvement of EVA and
- linking of short-term and long-term decision-making.

Continuity in the payment of bonuses will only exist if there is sustainability in increasing EVA. Otherwise there will not be payments of bonuses. Such a situation should affect the managers to focus on achieving long-term, sustainable improvements of EVA, and not on the current performance of the EVA. These incentives can be strengthened by using non-financial criteria such as customer satisfaction, product innovation, etc. These criteria, along with the movement of stock prices, can facilitate understanding of problems in the actions taken to improve EVA in the current period.

EVA bonus bank enables retention of the managers, because the leaving manager has to sacrifice a fee earned in the previous period, which would be paid in the future. EVA bonus bank at the same time provides an opportunity for good managers (with a large positive bonus in the bank) to remain in the company and encourages bad managers (with the negative balance in the bank) to leave the company.

The advantages of a modern EVA bonus plan are:

- objectivity in the definition of planned (target) performance in accordance with the expected value for the owners;
- encourages good managers to remain with the company, and bad to leave it;
- contributes to resolving the agency problem ie. encourages managers to make decisions in accordance with the interests of the owner;
- enables the connection of short-term and long-term incentives for managers in order to get them closer to the interests of the owners and to maximize value for owners.
- provides remuneration of managers at the business unit level.

Disadvantages of modern EVA bonus plan are:

- some authors argue that the movement of EVA performance does not adequately monitor the movement of share prices, and for that reason it is not so good for rewarding managers, as thought by the advocates of application of EVA concept in the development of bonus plans;
- there are limitations to this bonus plan which are conditioned by cultural differences in certain countries [7, 46-74]; in countries whose national culture is characterized by uncertainty avoidance, low degree of individualism and difficulty in accepting challenges EVA bonus plan will be ignored, while in countries whose national culture is characterized by individualism, readiness to change in the organizational structure of the corporate enterprise EVA bonus plan will be well accepted;
- it requires implementation of the EVA concept at all levels of management, which may cause a problem of delegation of responsibility in the achievement of EVA performance at the operational levels of management; it showed that EVA is not suitable for use in rewarding managers at the operational management level, because it

is not possible to reliably determine the relationship between the contribution of their work and created values for owners;

- differences in tendencies towards risk taking in business among managers at different levels of management and owners can be a problem in the development of EVA compensatory system in the corporate enterprise; managers of business units are more afraid of risks in the business than top managers and owners;
- shows certain limitations, i.e. it is not always a suitable foundation for rewarding in corporate enterprises which operate in emerging markets, as well as in industries with cyclical movement [21, 142-145].

3. BONUS PLAN BASED ON A CASH FLOW CONCEPT

In the compensatory system based on cash flow performance criteria, the remuneration of employees is mainly done according to the following criteria: total business return (TBR) and shareholders value added (SVA).

TBR in the development of bonus plans based on cash flow concept proved to be suitable for rewarding managers in long and short term. TBR¹² can be used as a basis for compensatory system in two ways: firstly, in the case of long-term investments, when used to measure the created value during several years (usually five years) and secondly, as a basis for defining annual objectives to be achieved in order to achieve long-term results¹³.

The level of bonus based on TBR is determined as follows:

$$\text{Bonus} = \text{TBR} \times \text{target bonus}$$

At the business unit level, rewarding of managers based on TBR is a common approach of the phantom option plan [21, 421-422]. The level of remuneration established by this plan is obtained by applying a fixed percentage to the increase of the shareholding wealth. Increase in shareholding wealth represents the difference between the shareholding wealth at the end and shareholding wealth at the beginning of the observation period.

In this system of planned bonuses, rewards for managers of business units depend on the size factor of the net operating profit after taxes (NOPAT-a¹⁴), which is used for calculating the value which remains to the owners with extinguishing businesses. And the impact of that residual value in forming a basis for rewarding compared to the achieved yearly performances makes this compensatory system inferior to the reward system based on the concept of EVA, as well as the one based on the concept of SVA.

Compensatory system for rewarding managers of business units based on SVA¹⁵ provides reward only in the case of achieving superior SVA. The calculation of superior SVA is done in six steps [18, 91-101]:

- the first step - projection of value drivers: the rate of sales growth, NOPAT rate and the rate of incremental investment in fixed assets and net current assets. The

¹² TBR is calculated using the formula:

$$\text{TBR} = (\text{Net present value of cash flow} / \text{Net cash invested in assets}) \times 100\%$$

¹³ In planning the level of annual operating profit, which will provide the desired level of TBR.

¹⁴ Net Operating Profit After Tax

¹⁵ SVA is calculated as follows:

$$\text{SVA cumulative for project period} = \sum_{t=1}^n \frac{\Delta \text{NOPAT}_t}{\text{WACC}(1+\text{WACC})^{t-1}} - \sum_{t=1}^n \frac{\text{Increment. investment}_t}{(1+\text{WACC})^t}$$

projection is performed on the basis of historical performances, business plans of a business unit and strategic moves of the competition;

- the second step - translating the projected value drivers into the projections of annual cash flows and determining the present value of projected annual cash flows using the price of capital (this is the price of capital specific to a particular business unit). Obtained projections lead to the valuation of each business unit;
- the third step - the aggregation of value of each business unit to check whether the aggregate amount is approximately equal to the market value of the entire enterprise;
- the fourth step - determining of expected annual SVA in the planned period (usually three years). This is done on the basis of projected cash flows;
- the fifth step - the calculation of the realized SVA at the end of each year. The calculation is done as in the previous step, but this time using the actual rather than projected data;
- the sixth step - determining the difference between realized SVA and expected SVA. If the realized SVA is higher than the expected SVA, realized SVA is superior. This positive difference is the basis for rewarding managers of business units.

Compensatory system based on the concept of SVA is suitable for rewarding managers of business units because it can be developed in the long-term (usually for a period of three years). This is done because the creation of value is a long-term phenomenon. Thus setting the annual level of performance, the realization of which brings a bonus, must be based on long-term planning of maximizing value for owners. In this compensatory system, rewarding managers of business units is carried out according to the three-year plan of variable SVA called a rolling three-year plan of variable SVA.

CONCLUSION

In the corporate enterprise managers are those who govern and decide on the allocation of capital, and the owners are striving to control them and to ensure that they are taking actions that will lead to increase of their wealth.

Bonuses are an important element in the structure of compensations (incentives) for managers. In the foundation of bonus payments to managers there is the intention to establish a strong link between managerial behavior and realized business performances, as well as to motivate them to take action in order to maximize value for the owners. Development of bonus plans that are based on measures significant to the owners (measures based on concept of accounting result, measures based on concept of economic result and measures based on cash flow concept) contributes to that.

In theory and in practice there are two known types of bonus plans based on the concept of accounting result - traditional and linear bonus plan, developed by using accounting performance measures (absolute profitability measures, different types of rates of return on invested capital, but also measures that are directly related to the movement of stock prices such as yield rate implied in the price of stocks, the yield rate anticipated by managers in the strategic plan and the cost of capital).

The advantages of a traditional bonus plan are: remuneration of managers is based on the target bonus which is linked to a planned (target) financial performance, there is a lower and upper limit for the payment of bonuses and it is particularly suitable for rewarding top managers, as well as those at the operational level (in combination with other performances).

The disadvantages of this bonus plan are: accounting performance criteria often do not have a strong connection with creating value for the owners, and bonus payments may not always be accompanied by the creation of value for the owners; it may condition the speculative behavior of managers of business units so it will hold off revenues for the next accounting periods and thus provide bonuses for a longer period; it may initiate a conflict in achieving short-term and long-term interests of managers and owners, because short-term results are placed in the foreground; it is not conducive to good managers, while it guarantees bonuses for mediocre managers; managers set the target performances and report on their achievement, which can lead to manipulation by managers that can affect the level of bonuses paid.

Linear bonus plan based on the accounting criteria of performance in the calculation and payment of the bonuses starts from the accomplished accounting performances or from the achievements of effectiveness of target performance. It also enables long-term projection of accounting performance criteria and the development of enterprises, which is an advantage over the traditional bonus plan. However, what is criticized in this bonus plan is that success in its implementation will depend on the chosen accounting performance criterion and is not popular with managers because of their propensity to calculation and payment of bonuses which are based on a set goal.

In order to eliminate serious deficiencies of bonus plans based on the concept of accounting result, there has been a development of bonus plans based on the concept of value for the owners (based on the concept of economic result and cash flow concept), which provide rewarding of managers according to their contribution to the created value for owners. In practice, EVA (original and modern) bonus plans and bonus plans based on TBR and SVA proved the most suitable.

Proponents of EVA concept believe that the EVA performance measure is best suited for rewarding managers. This is supported by: objectivity in the definition of planned (target) performance in accordance with the expected value for the owners; the possibility of bonus payments to managers according to their contribution to the created value for the owners (even when the negative EVA is achieved) in the short and long term; contribution to solving the agency problem and retaining good managers, while bad managers are encouraged to leave the corporate enterprise. There are still some objections to EVA bonus plans: some authors believe that the movement of EVA performance does not adequately follow the movement of share prices; the implementation of the EVA concept is required at all levels of management (and it is not good enough for rewarding managers at the operational level); differences in tendencies to taking risks in business can cause a problem with managers and owners in the development of EVA compensatory system in the corporate enterprise and the limitations of this bonus plan conditioned by cultural differences across countries.

From bonus plans based on cash flow concept SVA bonus plan proved to be most suitable in practice. It provides rewarding of managers with almost the same benefits as the EVA bonus plan, only in remuneration it starts from the calculation of the realized SVA and its comparison with the expected SVA. The disadvantages are the complexity and high cost of construction of this compensatory system for rewarding managers.

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RAZVIJANJE BONUS PLANOVA ZA MENADŽERE U CILJU MAKSIMIZACIJE VREDNOSTI ZA VLASNIKE

Nagrađivanje menadžera u korporativnom preduzeću podrazumeva da oni za ostvarivanje planiranih performansi dobijaju zaradu, a za ostvarenja iznad tog planskog nivoa dobijaju različite vidove stimulacija. Bonusi su najčešći vid stimulacija za menadžere koji se isplaćuje srazmerno njihovom doprinosu ostvarenom uspehu poslovanja. U korporativnom preduzeću potrebno je razviti takav sistem nagrađivanja menadžera koji će ih motivisati da deluju u skladu sa interesima vlasnika i podstaknuti ih da preduzimaju one rizične poslovne aktivnosti koje će doprineti maksimizaciji vrednosti za vlasnike.

Radi obezbeđenja usmeravanja menadžera u pravcu kontinuiranog poboljšanja performansii preduzeća razvijeni bonus planovi treba da budu zasnovani na merilima performansi značajnim za vlasnike (merila zasnovana na: konceptu računovodstvenog rezultata, konceptu ekonomskog rezultata i cash flow konceptu). Za nagrađivanje top menadžera kao osnova za obračun i isplatu bonusa

najpogodnija je primena merila zasnovanih na konceptu računovodstvenog rezultata koja direktno korespondiraju sa cenom akcija (stopa prinosa implicirana u ceni akcija, stopa prinosa predviđena od strane menadžera u strategijskom planu, kao i cena kapitala). Za menadžere poslovnih jedinica nije moguće uspostaviti uvek direktnu vezu nagrađivanja sa kretanjem cena akcija, pa su se za obračun bonusa kao pogodnija pokazala merila zasnovana na konceptu ekonomskog rezultata (najpogodnija je EVA) i merila zasnovana na cash flow-u (najprimerenija je SVA). Nagrađivanje menadžera operativnog nivoa upravljanja se vezuje za performanse koje u svojoj suštini predstavljaju makro ili miropokretače vrednosti, a koje se mogu direktno povezati sa učinkom rada ovih menadžera.

Nagrađivanje menadžera, takođe, podrazumeva da se u njihovom kompenzacionom paketu izbalansiraju kratkoročni i dugoročni podsticaji, što važi i za bonuse. Efikasan kompenzacioni sistem treba da doprinese usklađivanju individualnih ciljeva menadžera i ciljeva vlasnika, u kratkom i dugom periodu, kao i da obezbedi pravednu alokaciju bonusa u upravljačkoj strukturi. Nagrađivanje menadžera isplatom bonusa treba da obezbedi spremnost i lojalnost menadžmenta da ostvari očekivane prinose za vlasnike ne samo u kratkom, već i u dugom roku.

Ključne reči: *bonus plan, bonus banka, bonus, stopa prinosa na ulaganja, dodata ekonomska vrednost, dodata vrednost za akcionare.*

NEEDS AND SPECIFICS OF ENSURING EFFECTIVE INTERNAL AUDIT

UDC 657..6

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Abstract. *In modern business conditions, internal audit has significant potential for creating added value for the company and improving its operations. The extent to which internal audit will realise its objectives is primarily determined by the level of its effectiveness. In this regard, the authors of the paper, in addition to highlighting the importance of internal audit for achieving the strategic goals of the company, deal with the specifics of ensuring its effectiveness. These specifics are related to the issue of measuring the effectiveness of internal audit, as well as to identification and analysis of the factors that largely determine the achieved level of effectiveness of internal audit.*

Key Words: *internal audit, internal audit effectiveness, measures of effectiveness, factors of effectiveness*

INTRODUCTION

The development of internal audit, from its emergence until today, has been characterised by continuous expansion of the scope of its work and the powers granted to internal auditors. In addition, a particularly important period of development refers to the last fifteen years, when, under the influence of rapid and continuous changes in the business environment, the companies' exposure to various risks, especially financial scandals of the late twentieth and early twenty-first century, the establishment and functioning of internal audit in the company has become one of the most important prerequisites for the success of companies' business. In parallel with the focus on the role and importance of internal audit for the improvement of companies' business, it has been completely logical that the issue of ensuring its effectiveness will be opened. This is because only effective internal audit can meet all the demands that are placed in front of it and aimed at creating added value for the company.

The basic prerequisite of ensuring and increasing the effectiveness of internal audit is, certainly, the development of adequate approach to its measurement. The application of quantitative and qualitative methods that have been developed in practice, especially the

Received November 20, 2014 / Accepted March 25, 2015

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choice of effectiveness measures that will best present the efficiency of internal audit in the creation of added value for the company, makes the issue of ensuring the effectiveness of internal audit very specific. Furthermore, when the effectiveness of internal audit is taken into consideration, one must bear in mind that this is a very dynamic category, determined by multiple factors. For these reasons, an important step in ensuring the effectiveness of internal audit is to identify factors that largely determine the level of effectiveness achieved, and then ensure their continuous improvement.

1. THE IMPORTANCE OF INTERNAL AUDIT AND THE NEED OF ENSURING ITS EFFECTIVENESS

In the modern business environment, internal audit has become an independent business function, which explores, questions, analyses, assesses, and monitors the operation of a certain entity, in order to improve the effectiveness of its operations. However, from its emergence to the present day, internal audit has been subject to continuous changes. These changes have been primarily related to the field of activity of internal audit, as well as the responsibilities, powers, and positions that internal auditors have had in the company. In fact, although it initially focused on the monitoring and control of bookkeeping in order to reduce errors, criminal activity, property alienation, and the like, the advent of management, i.e. the separation of the function of ownership from the function of management, has brought new powers to internal audit. Specifically, internal audit has been given the responsibility to monitor, examine, control, and evaluate the work of internal control systems, whereby the scope of activity has not been limited to accounting and finance, but also to business operations in general. Thus, the traditional concept of investigation, known as the financial audit, has been replaced with a modern concept, which is in theory and practice known as operational audit, which provides internal audit with a high level of control in all business functions of the company that are managed.

However, in the last fifteen years, the extremely complex environment in which the companies operate the new laws and other regulations, and the financial collapses of the late twentieth and early twenty-first century (Kapoor, Brozzetti, 2012, 32) led to a significant expansion of the scope of work and the role of internal audit. Specifically, internal audit is expected to be focused on understanding the risks that could adversely affect the organisation, as well as the establishment of a mechanism to monitor the risk and control it, with a view to its elimination or, at least, reduction. It is also expected to provide support at each stage of the change in the management process, to provide guidance in the design of work processes, to identify possibilities of improvement, and the like. So, in addition to providing assurance, internal audit has been given a significant advisory role, aimed at adequate establishment and improvement of the processes in the company. In this way, the role and activities of modern internal audit are focused on adding value to the company, which is particularly emphasised in the definition of internal audit given by the Institute of Internal Auditors, according to which internal audit is an “independent, objective assurance and consulting activity designed to add value and improve an organisation’s operations. It helps an organisation accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes” (IIA). The contribution and importance of internal audit to the improvement of a company’s operations, depending on the role and scope of its work, is shown in Figure 1.

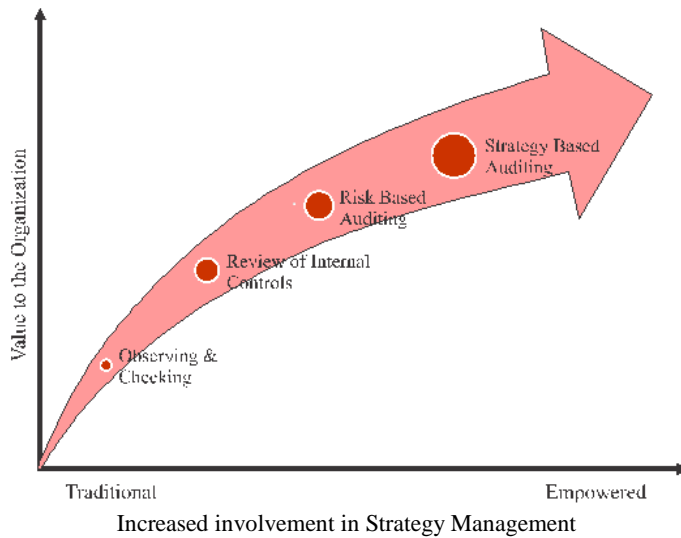


Fig. 1 Trends in Internal Audit

Source: Aksoy, Bozkus, 2012, 1287

So, today, it is indisputable that internal audit is a highly professional activity, aimed at examining and evaluating the functioning of the entire business system and providing opinions and advice to improve its operations. By focusing its roles and activities on the implementation of the strategic goals of the company, internal audit represents an indispensable participant in the management of the company.

However, changes in the “mission” of internal audit have caused the companies to, apart from the “simultaneous and consistent redesigning of roles and activities of internal audit” (Arena, Azzone, 2009, 44), focus significant attention on ensuring its effectiveness. This is because the adequate establishment of internal audit within the company does not imply necessarily that the company will have some benefits from it, or that internal audit will contribute to achieving the company’s objectives. More precisely, only effective internal audit can justify its existence, provide the best way of carrying out its roles, and meet the expectations that have been placed in front of it. In fact, if the effectiveness of internal audit is seen as “the degree of fulfilment of the objectives for which internal audit has been established” (IPPF Practice Guide), it can be said that it becomes effective when it contributes significantly to the success of business operations through subsequent and preventive action. Through subsequent action, aimed at evaluating the effects of past events, i.e. results achieved and errors made, internal audit aims to correct such errors and irregularities and prevent their recurrence in the future. On the other hand, through preventive action, aimed at providing help and support to management in identifying future risks, proposing the establishment of an adequate system of internal controls which will bring those risks under control on time, providing advice for improving the efficiency and effectiveness of business processes, and the like, internal audit contributes to the success of the overall business operations. Specifically, achieving a satisfactory level of effectiveness of internal audit ensures the effectiveness of the audited process and the company in general (Mihret, 471).

Furthermore, by achieving the appropriate level of effectiveness, internal audit, in fact, shows how and to what extent it contributes to the improvement of business operations, and proves its value to the company, which, certainly, gets the appropriate reputation. This further implies that internal audit is accepted by the executive management, the board of directors, and owners of the company, as a strategic partner in company management. In such situations, stakeholders observe internal audit as an independent source of objective advice, helpful in implementing corporate governance, risk management and control process management, which helps companies achieve strategic, operational, financial, and goals of regulatory compliance. They also see it as a catalyst of improving the effectiveness and efficiency of the company through internal review and recommendations based on the analysis and compilation of data and business processes.

For these reasons, the internal audit profession today focuses more attention precisely on improving its effectiveness, as a prerequisite not only of its contribution to the improvement of company management and the creation of added value, but also of further survival.

2. APPROACHES TO MEASURING THE EFFECTIVENESS OF INTERNAL AUDIT

The first step in ensuring the effectiveness of internal audit is to establish adequate approach to its measurement and evaluation. This view is fully justified by the fact that, as stated by Kaplan and Norton, if you cannot measure it, you cannot manage it. The need for measuring and evaluating the effectiveness of internal audit is especially emphasised in the International Standards for the Professional Practice of Internal Auditing, according to which “the chief audit executive must develop and maintain a quality assurance and improvement programme that covers all aspects of the internal audit activity” (ISPP 1300). This programme ensures assessment of the effectiveness and efficiency of internal audit, and its required components are both internal and external assessments.

Measuring the effectiveness of internal audit, as the issue that has become particularly important, at the same time set a challenge that is reflected in the selection of relevant measures of effectiveness, i.e. the fulfilment of the tasks and objectives of internal audit. The Institute of Internal Auditors indicates that the source that should be consulted in the selection of measures of effectiveness is the International Professional Practices Framework, pointing to the compliance of the work of internal auditors with the International Standards and Code of Ethics, as the prerequisite of internal audit best practice. In this regard, the Institute has defined several approaches to assessing the compliance of internal audit with the standards. However, although they provide important information, these approaches have significant shortcomings, which are primarily reflected in the fact that the choice of measures is inadequate. These shortcomings are specifically related to the fact that the provided response categories limit the application of descriptive statistics. Furthermore, measuring effectiveness on the basis of obtaining explanations or descriptions provides qualitative data that indeed is important, but prevents the application of statistical analysis. In addition, some approaches do not include all standards. Characteristics and disadvantages of the recommended approaches are given in Table 1.

Table 1 Approaches to measuring the effectiveness of internal audit

Year	Scales	Component assessed	Limitations
2003	Categorical	<ul style="list-style-type: none"> -Purpose, authority and responsibilities -Independence -Objectivity -Proficiency -Due professional care -Quality assurance and improvement in internal audit function -Providing assurance and generating improvement in the organization 	<ul style="list-style-type: none"> -Subjective measures -Limit answer to Yes or No
2006	<ul style="list-style-type: none"> -Subjective answer e.g.: Explain, Describe -Categorical 	<ul style="list-style-type: none"> Organizational and environment -Background of the organization -Risk management -Governance -Accountability and oversight -The internal audit functions -Background of internal audit functions -Internal audit practice environment -Relationship with senior management and board -Management of activities -Information technology. -Internal Assessment of: -Ongoing review -Periodic review 	<ul style="list-style-type: none"> -Very subjective measures -All are open ended questions -There is no specific question to tap individual components assessed
2007	<ul style="list-style-type: none"> -Categorical -GC, generally conform -PC, partially conform 	<ul style="list-style-type: none"> -Planning -Purpose, authority and responsibilities -Internal assessment -Professional development -Quality assurance program -Policies and procedures -Resource management -Organizational independence -Risk management -Recording of information -Engagement supervision -Communicating results -Engagement planning 	<ul style="list-style-type: none"> -Categorical in nature -Some of the standards are not covered

Source: (adapted from: Kasim, Hanafi, 2009, 3404-3405)

The disadvantages of the above-mentioned approaches to measuring the effectiveness of internal audit, among other things, imposed the need for the application of quantitative methods that are easy to understand and based on existing data that can be easily collected. It is believed that the applied quantitative measures more clearly indicate the effectiveness of internal auditors. Research conducted by Ernst & Young in 2007 shows that the most commonly used quantitative measures of effectiveness are: the degree of realisation of internal audit plan, i.e. setting implemented activities in relation to the planned activities in a given period of time, and the time required for the issuance of the final internal audit report. Moreover, commonly used measures in practice include: determining eligibility of internal auditors (number of auditors who possess professional certificates, number of years of experience, etc.) and determining the length of time that auditors spend during the day performing audit activities and the time they spend doing other administrative tasks.

Arena & Azzone (2009, 48) point to another objection to the approaches recommended by the Institute of Internal Auditors, emphasising the fact that the harmonisation of procedures, activities, and qualifications of internal auditors with the standard requirements in itself does not mean at the same time the achievement of a high level of effectiveness of internal audit. These, as they call them, *process measures*, do not indicate the level of achievement of the objectives of modern internal audit, which are reflected in meeting the information needs of stakeholders and consequently improving the overall business of the company and creating the added value. For these reasons, these authors believe that the more appropriate are *output measures*, which relate to: the percentage of internal audit recommendations that management adopted and implemented, the satisfaction of management, and others. Certainly, *outcome measures* of internal audit are recognised as well, which are reflected in savings in costs, increased profits, higher prices of shares of the company, and the like, which are the result of implementation of internal audit recommendations. However, the fact is that it is very difficult to isolate the contribution of internal audit to these measures, which makes it difficult to apply them in practice.

A significant contribution to the measurement of efficiency of internal audit is given by Ziegenfuss, who developed 84 measures of effectiveness, classified into the following four groups (2000, 40):

- Internal audit input: the experience of employees, number of certified internal auditors, the average number of years of experience of internal auditors, the number of hours of training, and the like;
- Internal audit environment: the number of management requests for internal audit, the audit committee's satisfaction, management expectations from internal audit, and the like;
- Internal audit process: the percentage of implemented audits in relation to the planned ones, the number of objections in relation to the work of internal auditors, the accomplished number of hours of work in relation to the budget, and the like, and
- Internal audit output: the number of recommendations, the number of recommendations implemented by the management, the number of improved processes based on internal audit recommendations, the average response time to management requests, and the like.

The combined application of qualitative and quantitative measures, aimed at identifying the harmonisation of the work of internal auditors with professional standards and expectations of stakeholders, implies a comprehensive approach that enables adequate

measurement of the effectiveness of internal audit and its contribution to the creation of added value, as the foundation on which it is based.

3. FACTORS OF EFFECTIVENESS OF INTERNAL AUDIT

Bearing in mind the specifics of measuring the effectiveness of internal audit, primarily in terms of the selection of adequate measures, the logical conclusion is that the effectiveness of internal audit is a dynamic category, conditioned by multiple factors. In this regard, the identification of factors that to a great extent determine the level of achieved effectiveness of internal audit is an issue discussed by many authors. Therefore, Arena & Azzone (2009) claim that available resources and competence of internal audit team, internal audit involvement in risk management, and the relationship between the audit committee and internal audit strongly determine the effectiveness of these functions. Furthermore, Gansberghe (2005) believes that the greatest impact on the effectiveness of internal audit is exerted by ownership, established organisational and regulatory framework in the company, legislation, resources, and professionalism of internal auditors. Soh & Martinov-Bennie (2011) believe that the structure, status, relationships of internal audit function with stakeholders, and competence of internal auditors are the factors with the greatest impact.

Our starting standpoint is that the effectiveness of internal audit is primarily determined by competence, independence, and objectivity of internal auditors. However, the attitude of stakeholders towards internal audit, in terms of supporting it and relying on its work, largely depends on the harmonisation of internal audit plans with the strategic plans of the company, as well as approaches and the ways in which internal audit reports to the stakeholders.

3.1. The competence of internal auditors

Achieving a high level of effectiveness of internal audit is influenced by the competence of internal auditors, which is, as Sarens (2009, 4) argues, determined by: education of internal auditors, their working experience, professional certificates, continuing education and the establishment of development programmes, possession of behavioural and technical skills and competence. A strong impact of the competence of internal auditors on internal audit effectiveness has resulted in the numerous studies on this topic. Thus, Arena & Azzone (2009, 45) indicate that competent auditors are able to provide advice that will contribute to the improvement of the internal control system, to adequately complete their work, to use their experience to find consistent solutions and adequately respond to the complex and conflicting situations. Belay (2007, 10) suggests that the competence of the chief audit executive and the audit team is the basis for the establishment of a systematic and disciplined approach to evaluation and improvement of business processes in a company. Soh & Martinov-Bennie (2011) indicate that only with the possession of a broad spectrum of knowledge in finance, audit, business management, technology, and legal regulations, can internal auditors produce the expected results.

In addition, within the scope of the global research into the specific issues related to internal audit practice, the Research Foundation of the Institute of Internal Auditors focused special attention on the competence of internal auditors, and came up with the report which identifies and discusses key competences that modern internal auditors must have: general competences, behavioural skills, and technical skills. The overview of these skills is given in Table 2.

Table 2 Key competences of internal auditors

General competencies	Behavioral Skills	Technical Skills
Communication skills	Confidentiality	Understanding business
Organizational skills	Judgement	Business process analysis
Problem identification and solution skills	Team player	Identifying types of controls
Ability to promote value of internal audit	Facilitation	Operational and management research skills
Conflict resolution/negotiation skills	Leadership	Problem-solving tools and techniques
IT skills	Change catalyst	Financial analysis tools
	Work independently	Statistical sampling
	Governance and ethics	
	sensitivity	
	Objectivity	

Source: (Bailey, 2010, 5, 11, 17)

Character traits of internal auditors determine the possession of some of the above-mentioned skills. However, most of these skills are acquired through education and experience in carrying out audit activities. However, although once acquired competences, knowledge, and skills undoubtedly contribute to the proper performance of internal audit activities, they need to be continuously improved through a variety of trainings, education, and development programmes. Even the Rules of Conduct of the Code of Ethics for Internal Auditors state that “internal auditors shall continually improve their proficiency and the effectiveness and quality of their services”. Certainly, significant opportunities for this are mainly in the hands of internal auditors who are members of relevant professional organisations that are focused on the development of theory, and especially the practice of internal audit. Through constant organisation of various educational workshops, research, and dissemination of knowledge about the possible contribution of internal audit to the improvement of the overall business of companies, and gathering of internal auditors from different countries in order to exchange knowledge and experience, these organisations play an important role in the continuous improvement of the competences of internal auditors. In addition, these organisations provide training programmes for acquiring professional titles that specifically affirm the competence and qualifications of internal auditors.

3.2. Independence and objectivity of internal auditors

Independence and objectivity are concepts on which internal audit has always been based, and which significantly determine its effective realisation. However, the expansion of its role brought these concepts to the fore, for the reason that the simultaneous provision of assurance and advisory services can make internal audit the subject of many conflicts. In addition, the issue of objectivity of internal auditors is particularly pronounced given that they are actually employed by the company to which they provide such services (Stewart, Subramaniam, 329).

The importance of ensuring a high level of independence and objectivity of internal audit has made professional bodies focus particular attention on these issues. Thus, the International Professional Practices Framework, which was developed by the Institute of Internal Auditors, already in the definition of internal audit states that it is “...an independent, objective assurance and consulting activity...” In addition, numerous performance standards are focused on the issues of providing (1) independence as “freedom from conditions that

may be a threat to the ability of the internal audit to impartially perform its tasks”, and (2) objectivity as “unbiased mental attitude that allows internal auditors to perform their tasks in such a way that they believe in the result of their work as well as in the fact that no concessions have been made in terms of quality”. With this in mind, it is quite reasonable to say that the effective functioning of internal audit is largely determined by the independence and objectivity of internal audit, in terms of defining the scope of its work, the implementation of activities, and reporting of results (Kondić, Petrović, 2012, 132). The level of achieved independence and objectivity of internal audit is determined by: the relationship between internal audit and company management, audit committee effectiveness, and competence of auditors (Kamau, Nduati, Mutiso, 2014, 133-134).

In fact, although modern internal audit carries the title of a strategic partner to the company management, primarily because it provides advice aimed at improving management process, it does not mean that management should regard internal auditors as “their” employees and include them in the daily management activities. Management’s expectations that internal auditors will be actively involved in the management activities, and vice versa, a greater impact of management on work planning, budget approval and implementation of the internal audit activities may significantly jeopardise the independence and objectivity of internal audit. Therefore, the establishment and effective functioning of the Audit Committee, as a body that is composed of non-executive members of the management board, may significantly ensure the independence and objectivity of internal audit in relation to the company management. Specifically, the Audit Committee needs to confirm the charter, approve the internal audit plan and budget, and evaluate its work. Certainly, a higher level of Committee’s effectiveness, which is, among other things, determined by the possession of different expertise of its members, means a greater contribution to the independence and objectivity of internal audit. This is because the members of the Audit Committee who have different financial, technical, and other expertise can better understand the work programmes, activities, and results of internal audit, and thus better evaluate the performance of its work. Therefore, practical advice 1110-1 states that internal audit should only administratively report to the management (on matters related solely to the daily operations of companies), but not functionally (on issues relating to the scope of work, internal audit planning, etc.).

In addition to the internal audit relationship with its stakeholders, a factor that significantly affects the independence and objectivity of internal auditors is their competence. This is because the auditors who possess a high level of different knowledge and skills, common sense, critical thinking, and analysis are able to independently and objectively perform tasks that are within the scope of their work.

3.3. Internal audit planning

The effectiveness of internal audit is largely determined by the focus of its work on the planned tasks. Internal audit planning defines the work priorities, establishes goals that are to be achieved, defines the control measures to ensure that the internal audit objectives are met, and ensures efficient and effective use of audit resources. The responsibility for proposing a plan is in the hands of the chief audit executive, who must establish plans based on risk assessment that is carried out at least once a year. The chief audit executive is obliged to consider the expectations of senior management, the board, and other stakeholders in terms of internal audit opinions and other conclusions, send requests for the appropriate resources, and ensure that they are sufficient and effectively used (ISPP 2010). Depending on

the time period, as well as the level for which the planning is done, we distinguish between planning at the level of internal audit function, which involves strategic and annual planning, and planning at the level of individual processes/engagement. The relationship between these levels of planning is reflected in the fact that strategic and annual planning form the basis for developing a plan of individual engagement.

Strategic planning of internal audit is crucial for the achievement of a high level of audit effectiveness, as it involves defining strategies, goals, and directing its work towards the fulfilment of defined strategic goals of the company. In this way, strategic internal audit plan is an “instrument that improves the position of internal audit and emphasises its importance within the company” (Cecere, Nadeau, 2013, 40). According to the guidelines of the American Institute of Internal Auditors, strategic planning involves: introduction to the goals of the company; consideration of the International Professional Practices Framework; introduction to the expectations of stakeholders; harmonisation of the mission and vision of internal audit with the goals of the company; defining critical success factors and performance of SWOT analysis (Institute of Internal Auditors, 2012). This allows for the definition of specific and measurable objectives of internal audit, which will be supplemented by performance indicators that need to be regularly monitored. In addition, although it is adopted for a period of three to five years, a strategic plan is a very dynamic category, which is reviewed and adapted to changing circumstances.

Based on the strategic plan, an annual internal audit plan is developed, which defines goals and tasks, i.e. the number and scope of audits to be realised in the coming year, which should be in accordance with the internal rules and the complexity of individual work tasks. Furthermore, this plan gives a detailed description of human and other resources necessary for the smooth implementation of planned activities. The annual audit plan is based on an annual risk study, which defines and assesses risk areas within company’s business and quantifies risks in terms of intensity. A study based on the principles of meticulousness and comprehensiveness provides a greater likelihood of making a quality internal audit plan, and thus achieving better final results (Dančić, Janić, 2012).

Finally, internal auditors must determine and document the objectives, scope, and perform precise allocation of resources for each individual engagement. Individual engagement planning implies that auditors consider: (1) the goal of the activity being audited, and the way to control the execution of the procedures, (2) significant risks to the activity, and the manner in which the potential impact of risk can be reduced to an acceptable level, (3) the adequacy and effectiveness of risk management and control system in comparison to the relevant control framework or model, and (4) the possibility of significant improvement of the risk management and control system (Pickett, 2006, 143-144). A careful individual engagement plan that includes all the necessary elements is a step towards achieving the annual and strategic plans of internal audit.

3.4. Internal audit reporting

Realisation of the role of internal audit includes the control of the work of others, which makes the existence of risk of controlled parties’ aversion to internal audit totally realistic. For these reasons, adequately designed internal audit mode of communication with its users, as well as the quality of internal audit report, significantly determine the level of acceptance and the recognition of the importance of this function. Specifically, in addition to providing information on what the performed audit has revealed, internal auditors need to

convince stakeholders of the value and objectivity of the auditor's findings, and thus encourage and stimulate management's actions towards change and improvement (Sawyer, Dittenhofer, Scheiner, 2003, 689). By providing explanations as to why a particular process is audited, which errors are detected, and what are the causes of these errors, as well as by giving recommendations about what should be done to correct the error (Moeller, 2009, 352), internal audit is able to produce the expected effects. In doing so, in addition to reporting to the audit committee and the company's management, internal audit should establish an appropriate communication strategy with other parts of the company. This strategy should be focused on: *raising awareness of the role of internal audit* by publicising the role, activities, and achievements of internal audit on the company website, in short brochures, etc; *active involvement of management in the audit process*, in terms of consultation during the drafting of the audit plan, the completion of audit procedures, organisation of workshops dealing with risk, and the like, and *proactive actions in order to create added value for the company*, by supplementing each individual audit plan with objectives relating to efficiency, effectiveness, cost-effectiveness, and results achieved, and involvement in the work of groups dealing with issues of strategic development as observers or advisors (Cox).

Furthermore, the form and structure of the internal audit report are determined by numerous factors. However, according to the International Standards for the Professional Practice of Internal Auditing, the report should include a minimum of: a description of the goals and an explanation of why the engagement has been performed; scope, i.e. activities that have been audited and the time period covered by the audit, and the results of engagement – observations, conclusions, opinions, recommendations, and action plans. A particularly important part of the report are recommendations regarding process improvement in the company, i.e. eliminating the causes of problems, which internal auditors suggest and use to urge management to take action in order to increase performance and achieve the desired results of the process. The importance of recommendations is particularly emphasised if internal auditors present the criterion/condition that is desirable to achieve, then the current state of affairs, the actual causes of deviation from the desired state, and, finally, the effect, or risk exposure due to the above-mentioned deviations (Sawyer, Dittenhofer, Scheiner, 2003). In addition, it is important to rank the recommendations according to the degree of risk, because it will be a guide to the company management to identify the most important recommendation that needs to be put into practice first. When preparing reports, internal auditors must take into account the report quality in terms of accuracy, objectivity, clarity, conciseness, constructiveness, completeness and timeliness of information.

In addition to adequate reporting on the work results, the stakeholders' trust in the work of internal audit and its effectiveness are significantly increased if internal audit periodically demonstrates its importance and reports on the quality of its work. In this regard, Valencia (2012) points out some of the methods that internal audit can apply: (1) reporting on the annual number of hours spent auditing in relation to the total number of working hours, including hours spent on training, administrative tasks, and the like, (2) reporting on the quality of work, which can be expressed by the number of management's requests for internal audit, the time needed to respond to these requests, and the like, (3) reporting on the skills of internal auditors that can be expressed by the average number of years of experience, number of certified internal auditors, and the like, (4) reporting on the number of recommendations that produced financial benefits: cost savings, cost reduction, and the like.

CONCLUSION

There is no doubt that through its dual role, which is reflected in the provision of assurance and advisory services, as well as through a systematic and disciplined approach to evaluating and improving the effectiveness of risk, control, and process management, internal audit provides a great contribution to the company in achieving its goals. However, the establishment of internal audit function, in terms of assigning responsibility and power to internal auditors, is no guarantee that it will achieve its goals. Issues that have to be addressed specifically are aimed at ensuring the effectiveness of internal audit, as the basic prerequisite of meeting increasing number of expectations that have been placed before this function.

The prerequisite of ensuring the effectiveness of internal audit is the establishment of adequate approach to its measurement. This issue has been discussed by a number of theorists and practitioners, which caused the development and application of different methods – both qualitative and quantitative. Each of these methods, whether qualitative or quantitative, has certain limitations, which is why practice suggests their combined use. Moreover, practice applies different measures of effectiveness of internal audit. Specifically, output measures, related to the satisfaction of the management with internal audit, the percentage of implemented recommendations of internal audit, and the like, are considered to be the ones that best reflect the achievement of the goals of modern internal audit.

Furthermore, an essential prerequisite for ensuring the effectiveness of internal audit relates to the identification of the factors that determine the degree to which internal audit contributes to the improvement of company management and the achievement of its strategic goals. Among the factors with the greatest impact, the following are identified: competence of internal auditors, i.e. internal auditors' experience, membership in professional organisations, possession of certificates, and the like; independence and objectivity of internal audit, i.e. internal auditors' cooperation with stakeholders, reporting lines, and the like; internal audit planning, i.e. harmonisation of internal audit plans with the strategic goals of the company and the needs of stakeholders, and approaches to internal audit reporting, i.e. quality, timeliness, and structure of reports. The strength of the impact of these factors on the effectiveness of internal audit causes their continuous review and improvement.

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POTREBA I SPECIFIČNOSTI OBEZBEĐIVANJA EFEKTIVNOSTI INTERNE REVIZIJE

U savremenim uslovima poslovanja interna revizija poseduje značajne potencijale za kreiranje dodatne vrednosti za preduzeće i unapređenje njegovog poslovanja. Mera u kojoj će interna revizija realizovati svoje ciljeve prvenstveno je uslovljena nivoom njene efektivnosti. U tom smislu, autori se u radu, pored isticanja značaja interne revizije za ostvarenje strateških ciljeva preduzeća, posebno bave specifičnostima obezbeđivanja njene efektivnosti. Te specifičnosti se odnose kako na pitanje merenja efektivnosti interne revizije, tako i na identifikovanje i analizu faktora koji u najvećoj meri determinišu ostvareni nivo efektivnosti interne revizije.

Ključne reči: *Interna revizija, efektivnost interne revizije, mere efektivnosti, faktori efektivnosti.*

ECONOMIC ASPECT OF ELECTRONIC CIRCUIT DESIGN AND MANUFACTURING IN REPUBLIC OF SERBIA

UDC 621.38(497.11)

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Abstract. *Almost every activity of an electronic system design is closely related to technical as well as to other fields of science. The most important aspect for the future “life in the market” of the electronic product is the economic aspect. Foreign direct investment can greatly affect the R & D in the field of electronic industry. The fact that the electronic circuits’ industry affected and affects all areas of social development, requires the establishment of the correlation between electronic circuit design and manufacturing, and economics in general. In this paper, we will try to analyze the position of Serbia’s electronic industry perspectives on the global electronic circuit market, considering costs of their development and manufacturing.*

Key Words: *effects of FDI, electronic circuits, IC design, electronic circuit testing, IT*

INTRODUCTION

The historical moment that we live in today, represents a turning point between machines and the information society. Observed from the production point of view, we are witnessing the transition from the era of raw material processing to the era of information and energy (Litovski, 2000). Describing the period of machine era, we could say that the value of a product and a profit it was bringing, came from raw material i.e. its mass. In that way, a classification of the branches of industry was made: chemical, metal, plastic, food and other industries. Industrial products nowadays, on the other hand, are examples of multitechnological complexity. Such products are airplanes, computers, cars, telecommunication systems, consumer electronics etc.

The profit now mostly comes from software, built-in electronics, and special high-tech materials. According to some studies, the information carries two-thirds of the new products' value (Litovski, 2000; Ungson, Trudel, 1999: 60-65). Advances in technology,

Received October 24, 2014 / Accepted March 25, 2015

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especially in computer-aided logistics, computer-aided product design, and modern communications enable large companies to overcome classic factory work. There are many cases of companies where profit coming from new technologies reached almost 100% of the global profit.

The profit from electronic devices industry grows every year. Technologies supporting this industry are developing rapidly. This is particularly noticeable in the mobile devices industry. In (Osborne, 2014.) according to the worldwide mobile electronic devices' shipments' statistics from 2013 and 2014, an estimate was made that in 2015 a 2.592.000 thousands of units would be sold. This is shown in Table 1. It gives a detailed view of the worldwide demand for most popular mobile electronic devices.

Table 1 Worldwide device shipments by segment (thousands of units)

Device type	2013.	2014.	2015.
Traditional PCs (Desk-Based and Notebook)	296 131	276 221	261 657
Ultramobiles, Premium	21 517	32 251	55 032
PC Market Total	317 648	308 472	316 689
Tablets	206 807	256 308	320 964
Mobile Phones	1 806 964	1 862 766	1 946 456
Other Ultramobiles (Hybrid and Clamshell)	2 981	5 381	7 645
Total	2 334 400	2 432 927	2 591 753

(Source: Gartner, June 2014)

Having this in mind, one can conclude that the key issue in today's economy development lies in following new trends of electronic devices as well as software that they require. Achieved and expected profit depending on device Operating systems for the period 2013-2015 is presented in Table 2.

Table 2 Worldwide device shipments by operating system (thousands of units);

Operating system	2013.	2014.	2015.
Android	898 944	1 168 282	1 370 893
Windows	326 060	333 419	373 694
iOS/Mac OS	236 200	271 115	301 349
Others	873 195	660 112	545 817
Total	2 334 400	2 432 927	2 591 753

(Source: Gartner, June 2014)

Computer aided design (CAD) becomes a key industrial and economic activity, no matter of the product type. There are several reasons for such a trend. First, the complexity of new technologies is becoming so high, that nothing could be designed without a computer. Computer designing becomes the most important activity that consolidates the development, production and product placement at the market. On the other hand, the most significant factor for the competitiveness of a product is its quality. When high quality of the product is easily achievable, companies that still want to be competitive now have to offer newly designed products that no one else offers. As stated back in 1983 [Re83], the delay of just six month in putting a new product to the market, reduces the profit of the

product for additional 50%. There are plenty of modern industrial products (mostly electronic), whose time for development lasts longer than the product itself. The key activity to overcome such a scenario is the efficient design. In this way CAD becomes one of the main drivers of the industrial development.

1. ECONOMIC STATE AND THE FUTURE OF SERBIA'S ELECTRONIC INDUSTRY

The importance of FDI for economic growth in the modern economy is becoming increasingly evident on two grounds (Damijan et al, 2003). Quantitative growing importance of FDI, measured by total FDI flows or state, beyond the absolute values of key economic indicators such as GDP, exports and domestic capital investment (Marković 2010). Qualitatively, TNK, as the main SDI agents become dominant participants in the world economic space by integrating themselves into the basic methods of economic activity and investment, trade in goods and services, transfer of technology and financial flows. To the potential host country, FDI brings an integrated package of tangible and intangible resources (capital, technology, management, marketing, organizational knowledge, training, workforce, etc.) that serve as an alternative to labor migration and as a stimulus to economic development (Marković, Janković-Milić, 2013). Investment package, on the one hand, supplemented by available domestic factors of production both creates the conditions for new employment and work, and encourage, on the other hand, the growth of the host country through technology transfer, training, workforce, establishing a connection with the rest of the local economy and creates local roads producers to the world market. Serbia has indeed become an attractive location for foreign direct investment and now that foreign investors are finally beginning to invest in it and its capital, it is necessary to do a lot of things (Mencinger, 2003). This primarily refers to the continued political and economic stability, the adoption of the new system of laws with European standards (including the adoption of the Law on Foreign Investment, which would guarantee the rights of foreign investors), rescheduling and partial write-off of foreign debt, as well as the implementation of more aggressive promotional policies and strategies. It also requires faster and further implementation of initiated economic reforms, addressing legal and regulatory issues related to foreign investments, the use of the tried and tested but also finding new incentives to attract FDI, the inclusion of Serbia in international financial and political organizations, and the like. Otherwise, foreign investors would still continue to be treated as a high risk area, extremely unattractive for investment, which in our economy due to the lack of domestic capital and modest inflows of FDI, may have devastating consequences (Hausmann, Pritchett, Dani, 2005).

While investment in all sectors of the economy is needed and welcomed, the following sectors have been identified as those who could contribute most to considering the competitive advantage you have or may have in Serbia:

- Agriculture and food processing industries: food and non-food agricultural products, with an emphasis on organic products,
- Car Parts: Focus on companies-suppliers of new factory car and truck manufacturers / heavy vehicles,
- Banking and financial services
- Engineering: specialized services, designing, building on a "turnkey", and so on.
- Wood industry: first, the production of wood furniture, which is based on craft skills,

- Information and communication technology (ICT): products and services with the possibility of software, administrative and business services, call centers, initiatives that are based on the ability of universities / research centers,
- Pharmaceutical / healthcare / clinical research and the chemical industry,
- Public-Private Partnerships: Energy / Telecommunications / Infrastructure / metallurgy, mining and exploration / traffic checkpoints and distribution centers,
- Textile industry: short-term production branded clothing and orientation specific markets,
- Tourism.

The above sectors are distinguished for the following reasons:

- They have the potential to create a significant number of new, permanent jobs.
- Projects SDI many of these sectors can enable progress in certain areas in Serbia.
- Projects in these sectors may increase exports.
- It is possible to connect local companies and attract foreign companies-suppliers and service industries.
- Provide sectors to develop globally.
- The new foreign direct investment in these sectors is in southeastern Europe.

Serbia is becoming interesting for the investment. According to the data of National bank of Serbia, since 2005 Serbia has received about 13 billion of Euros in direct investments. This is shown in Table 3. As seen from Figure 1, due to different, mostly political impacts, the investment trend was not always increasing.

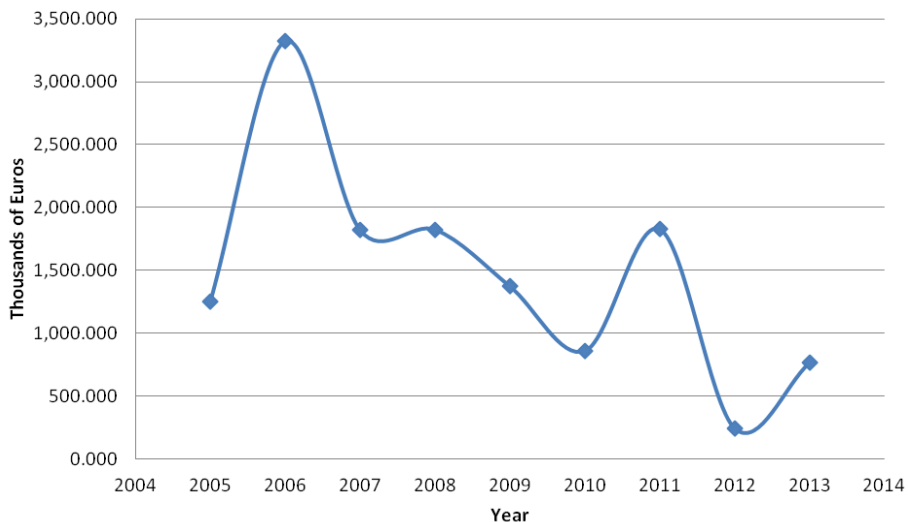


Fig. 1 Trend of direct foreign investments in Serbia for the period 2005-2013

Table 3 Serbia, Foreign direct investment, net in the period 2005-2013, by country (in thousands of Euros),

Country	2005.	2006.	2007.	2008.	2009.	2010.	2011.	2012.	2013.
Austria	168 864	409 815	848 627	330.567	234 149	145 850	154 693	55 275	40 646
Norway	24	1 296 061	2 326	4 025	-526	1 567	953	3 451	3 535
Greece	183 137	672 010	237 108	33 338	46 724	24 450	9 958	-296 053	29 057
Germany	154 868	645 370	50 516	59 572	40 101	32 921	76 591	43 444	48 391
Italy	14 759	49 087	111 504	333 665	167 386	42 296	128 068	81 709	43 912
The Netherlands	80 387	-176 560	-24 199	336 711	172 267	200 100	240 840	1 386	131 094
Slovenia	149 854	154 529	64 033	70 659	34 290	80 859	-108 387	52 560	24 480
The Russian Federation	11 722	12 713	1 700	7 903	419 751	6 993	74 187	18 503	45 295
Luxembourg	88 331	4 839	185 226	48 576	6 002	6 739	812 829	64 435	22 604
Switzerland	45 922	-4 223	70 458	82 319	62 883	50 643	47 742	78 389	49 012
Hungary	24 613	179 260	22 901	21 891	17 787	15 488	67 591	504	45 686
France	34 816	79 087	61 458	53 810	7 150	17 089	113 652	14 304	-1 080
Croatia	30 356	17 446	26 802	100 428	19 938	37 928	4 918	118 959	-5 548
United Kingdom	51 444	77 977	-21 054	10 122	51 842	53 344	-6 174	39 541	32 848
Montenegro	0	10 466	152 631	54 078	-3 608	-64 947	5 621	-8 747	102
USA	16 067	-20 593	23 536	35 624	12 583	54 779	25 633	28 051	16 759
Bulgaria	0 651	42 034	34 350	14 605	1 291	9 745	793	29 654	7 587
Slovakia	21 578	15 959	2 320	935	24 512	32 531	-4 830	-13 449	2 661
Belgium	10 306	4 160	17 276	12 000	2 366	3 536	5 006	1 672	43 659
Israel	11 588	3 681	19 397	-494	52	1 703	223	1 042	2 041
Latvia	5 208	8 178	2 645	482	1 065	80	1 715	3 093	7 396
Liechtenstein	-32 839	-14 595	-1 916	3 375	174	814	9 867	-429	854
Cyprus	56 697	-300 383	99 901	1 795	26 348	44 953	42 581	39 776	8 682
Bosnia and Herzegovina	3 599	-13 582	-622 496	-47 327	340	-22 000	-9 800	143	5 559
others	118 317	169 871	455 780	255 755	27 605	82 665	132 637	-115 344	163 304
Total	1 250 268	3 322 606	1 820 831	1 824 413	1 372 473	860 125	1 826 908	241 869	768 534

(Source: National Bank of Serbia 2014)

Nevertheless, one should have in mind that foreign companies that are mostly oriented in electrical and electronic devices manufacturing and Information technologies (IT), such as: Bosch, Yura, Panasonic, Siemens, Intel, Telenor, Cisco, SAP, Mobilcom Austria, Leoni, Oracle, Seavus, Schneider electric, invested in Serbia (SIEPA, 2014). This may sound promising for the future of this branch of industry. The drop of the direct investment does not have to appear worrying. It is reasonable to conclude that after establishing the productivity and quality, those companies in Serbia could earn for themselves.

Considering global Serbian industry, electronic industry holds a good, second position, being one of the largest exporters with 844.7 mil. Euros in 2013. (Electronic machines, systems and devices). On the other hand, import of the same goods in 2013. was about 654.8 mil. Euros, putting this sector at the fourth place of import significance (SIEPA, 2014).

To design and produce an integrated electronic circuit (IC), that is a chip, many steps must be followed. They are shown in Figure 2 (Ernst, 2009). Each one of these steps can be quite difficult.

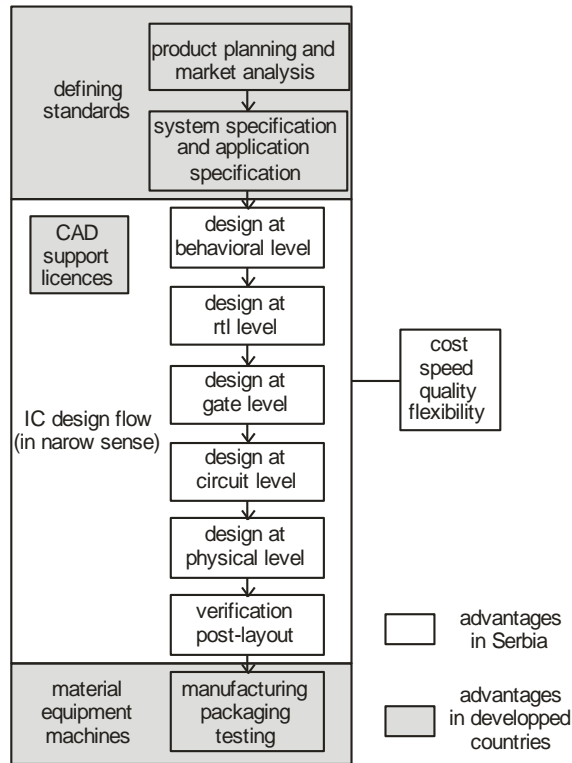


Fig. 2 IC design flow

Serbia is still not ready to start a project that can perform the entire flow. We simply are still not ready for it. It requires huge investments in infrastructure for material preparation facilities, for manufacturing and for testing floor facilities. On the other hand, a relatively cheap workforce, in the neighborhood of highly developed European countries, can be a plus. In comparison to other neighboring countries, Serbia has favorable geographic position, stimulates the creation of new jobs, and tax rate on profit is among the lowest in Europe (Serbian Chamber of Commerce, 2009). According to the data obtained by the Institute of Economics (Economics Institute, Belgrade), Serbia is ranked third in terms of favorable conditions for production and seventh in terms of service. Also, political risk is less than it had been in the first half of the decade and investments and financial capital are far safer in Serbia now.

The key problem in those investments is that we do not have a long-term vision for the development. Also such sophisticated industry requires enough qualified experts. Our chance in this design flow can be found in those phases that do not require production facilities. Development of such activities is a good start. For that, one will need an expert, a computer and a place to work.

Stages of the design where we can find our place are marked yellow in Figure 4. They include mostly brainwork, experts' engagement, computers and software. Our advantage here is speed, quality, flexibility and costs. All those steps essentially represent the design in its narrow sense.

As a logical continuation of this, a good idea would be the investment in knowledge, not in facilities. Our country has several education centers that are capable of producing such personnel. Most of them are university centers (Belgrade, Novi Sad, Niš), and they have a long history of educating similar experts. Most of them are working for large international companies in electronics and IT sector.

Historically, there is a good correlation between the investments in IT and electronic sector, and a progress of the society. According to the EU, only during the ten-year investment in the IT and electronic sector in certain countries, the competitiveness and productivity of their companies raised as much as 50 percent. Being at 15 percent would be a drastic increase in our case. The country has the capacity and potential of this industry and should wisely exploit that.

We cannot ignore the growth in the electronic and IT industry each year. Such trend will surely continue, because this technology penetrated every pore of social life and work. This increases the need for IT and electronic solutions. Because of such estimates, Serbia has to popularize this sector among young people in the sense of applicable knowledge. They have to be assured that those professions are not meant for some geniuses, but are like any other studies. One has to work and learn just a little bit harder than others.

2. COSTS OF ELECTRONIC CIRCUIT DESIGN AND MANUFACTURING

The cost of product and its design are not correlated just during the product development. We can observe life cycle of an electronic product, like it is shown in Figure 3. (Litovski, 2000). It begins with the extraction of raw materials (minerals, fossil fuels, air, chemicals). These materials are processed and prepared for further application. After this step, one can plan design technology, design constraints, design process and the manufacturing of the IC. Further activities entail shipment of product to the customer or to the market. Tasks to be solved here involve time and manner of transportation, or the storage. Delivered products should now be installed and used. During its operating cycle, the device requires energy and maintenance, and also involves cleaning, and spare parts replacements.

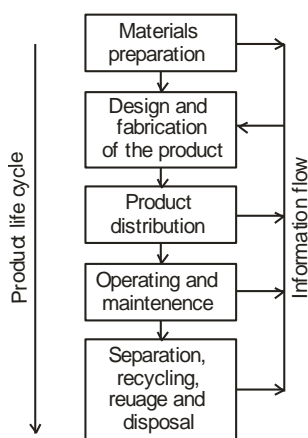


Fig. 3 Product life cycle and the information flow

The last phase of product life cycle could also be very interesting. It can end for two reasons: because the product is not needed any more (where we expect that new product with improved features will appear in the market), or because its repair costs are so high that repairing does not pay off. It is usual that the largest part of such a system can operate well and be reusable, at least like a spare parts source for the reparation of similar system. To enable this, a proper separation of the system parts should be conducted.

One should also have in mind that many electronic systems that have no faults, can be resold. In such a way older technologies are shipped to undeveloped parts and countries. This activity is particularly common in car and computer industry, and telecommunications.

The reuse of components can be very significant in estimating the life cycle of the electronic component. It is usually said that such a component can have one or more incarnations. The reused component is recycled. Material can also be a result of recycling. It is worth to recycle materials only if it is cheaper than buying new, raw materials. Based on these facts, we can conclude that the life cycle of a single product is very complex, and that the job of a designer or a manufacturer does not end the moment when the product leaves the production plant. The designer has to consider all the phases of product life cycle. This is particularly important, since most developed countries nowadays, have low obligations for the manufacturers that require separation, re-use, recycling and disposal of their old devices. The designer has to solve those problems and implement them in the most efficient way possible.

To have a better clue about the costs of IC design, its flow will be described first. We will here discuss about one special type of integrated circuits i.e. chips, which are called ASICs (Application Specific Integrated Circuits). The cost-effective mass-production is achievable only for this type of electronic circuits. Every ASIC-based product realization procedure begins with a specification phase (Lee, 2005). Market and/or technology requirements determine these specifications. Almost every ASIC contains several major blocks. Sometimes it is cheaper to buy a design for a certain block than to design in from scratch. Next phase requires analysis of tradeoff and make-versus-buy decisions for each major design block. Purchasing blocks from an intellectual-property (IP) provider, usually involves some additional costs: for purchasing the IP, the per-chip/per-design royalties, and the cost of verifying the IP (Lee, 2005).

Now the design of the ASIC in the narrow sense can begin. During this, new parts of the design are developed. Every block needs verification. It is reasonable to use only the correctly designed parts. All these blocks are now integrated, that is placed and connected together on the same piece of silicon. The global verification repeats again at this stage. After being verified, the design is now used to create GDSII files (Graphic Database System), that can be used for ASIC's manufacturing machines.

The Manufacturing Phase follows. Using the designer's GDSII files special software generates masks and the actual manufacturing of the chip can begin. During this phase the obtained silicon dies are packed into packages and then tested. Chips are now prepared for assembling into corresponding devices or packed for market.

Creating a cost list is a very complex task, since each step in the process can impose costs in other design or manufacturing phases. For example, a simple concept like low number of pins or low-power design (everything has to be paid) affects final product cost in several ways. To place silicon die in the package does not cost much. Nevertheless, if the chip has too many pins, then connecting them to the package can be a problem. Machines that do that will have more problems due to the smaller connection points (bonds) on the

package and on the die. This will affect yield (and costs), since more defective devices will appear. Further problems may appear because more pins require more power. Consuming more power causes more heat. The increased chip temperature requires proper cooling with a heat-sink or a fan, and this increases the total cost of the system.

All expenses of the IC design and manufacturing could be classified into two groups: Fixed expenses, and proportional expenses. Fixed expenses entail : time and costs of the design, costs of masks production, other fixed expenses such as rent and others. Proportional expenses, on the other hand, entail : costs of the required materials (silicon, cooper, acids ...), packaging, testing, and they are proportional to the size of the chip series, as well as to the size of the chip. The increase of the fixed expenses is affected by the increase of the design expenses. Designers are becoming mre expensive because they require appropriate education, and working and living environment. Also during the design, certain investments must be made in new hardware and software.

If we consider proportional expenses, we can notice that technology development enables smaller electronic devices. Figure 4, shows how the cost of a single integrated transistor (which is the essential part of every modern electronic device), is falling during years (Electronics we Srch, 2014; Moore, 1998).

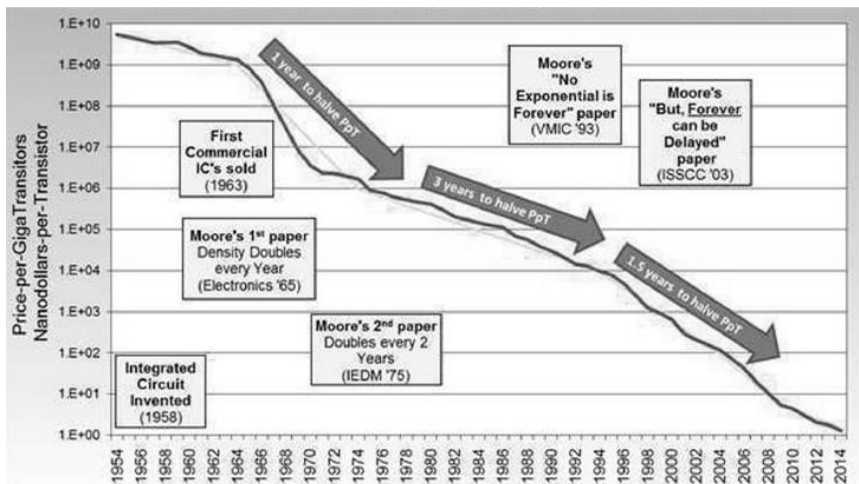


Fig. 4 Transistor pricing history by Moor's law

Nevertheless, this drop did not reflect on the reduction of proportional chip costs, since modern devices are much more complex, and require much more transistors. Those systems require more sophisticated and more expensive methods, tools and instruments for validation and testing.

List of items that contribute to cost so far can also be classified as follows:

Costs inside the die:

- One-time or fixed charges
- IP-procurement costs
- Engineering-design costs

- Verification costs
- Mask charges
- Other NREs. Non-recurring engineering (NRE) refers to the one-time cost to research, develop, design and test a new product.
- Per-chip costs
- IP royalties
- Die cost
- Bad-die cost (defects)

Outside the die:

- One-time or fixed charges
- CAD-tool licensing
- Generation and setup of test programs
- Load boards, probe cards, and other test NREs
- Generation of documentation
- Market timing costs
- Per-chip costs
- Package cost
- Assembly cost
- Test cost

One more topic that arises from the experience in ASIC design is unsuccessful project. During the late 1990s, the main aim was to create a correct chip without the need for redesign and re-fabrication – i.e. no spin. This used to be accomplished quite often. Chips nowadays are far more complex. Consequently the spin rate is higher. The expenses for one spin may vary drastically. They can be minimal requiring only small changes, or may involve a complete redesign. Many companies even plan a certain number of spins in their overall costs and schedules (Lee, 2005).

Besides the engineering, verification, manufacturing, packaging and testing costs for the new spin, additional factor to consider include the market timing costs because of a product delay.

One of the most important designers' ways to avoid or reduce number of spins is the project verification. Verification should be performed frequently during each phase of the design. If everything is correct, we can go further with the project development. Doing so may appear like prolonging the design, but generally, can save a lot of money. Verification can be performed using large collection of tools and teams of experts. In case of a spin, a trade off analysis must be conducted between the cost and time of additional verification (tools, people, and time needs), and the cost of additional spins.

One of the most important phases of the circuit design is its testing. The aim of electronic circuit design is to give a fault free product. The absence of faults is determined by testing. If we find products i.e. electronic devices, produced by different manufacturers that perform the same function and cost drastically differently, we can be sure that the costlier product underwent a very serious testing procedure. Cheaper product did not go through that activity and the manufacturer would probably not guarantee about its long-lasting functionality.

This means that testing is a very expensive activity. It does not add any new functionality to the electronic circuit, device or system, but it shows a value that is already in the product. Industrial testing of large scale chip series represents go/no-go test. The result of testing a circuit is one small piece of information: Yes, it works, or No, it doesn't work. It is just enough to make sure that the circuit operates well. If not, it is discarded. In the laboratory

environment, when prototypes are checked, testing requires very sophisticated tools and electronic instruments. Nowadays chips work at speed of little GHz. Testing equipment for them should be more advanced with much better features than the device to be tested. It means that we would need spectrum analyzers that can work on few tens of GHz. This fact is quite enough for one to conclude how expensive those testers are.

On the other hand, testing systems must be so fine and tiny and precise to explore the insight of all chips where parts are small as molecules. The probers should be made of very expensive, high conductive materials that could ensure very strong and at the same time easily separable connection to the chip internal testing points.

Testing requires engineers, time for conducting and special equipment. Engineers have to make the fastest and the most efficient testing method and procedure possible. It means that in the mass production, if the defect exists, it should be detected in the fastest way. The most possible defects must be detected first. Without any further observation, such faulty chips are discarded. Testing a device with few millions of transistors in it for a very short time is an important requirement. For example, if we want to test one digital device, there are many combinations of input signals that should be applied at its inputs. After stimulating the device, we are expecting to obtain response. This response is compared with the fault free one, and the device is classified as the faulty or faults free. For the circuit that has 10 inputs, number of possible input combinations is 2^{10} . If one combination testing last 1ms, the time to check all combinations is 1.024 seconds. For the circuit with 15 inputs, this would last almost 33 seconds. For a series of million devices, this would last about a year. Let us just mention that today's chips contain a few tens or hundreds of inputs. The calculation or the conclusion about the size and complexity of one classic test engineer's problem is left to the reader.

One more aspect of testing economics represents the cancelation of test. How large can its cost be? There is one rule for test engineers that describes canceling the test. It is called 10x1 (Litovski, 2000). This is shown in Figure 5. The Figure describes cost of the test at different levels of design abstraction. There are three levels of abstraction displayed. The lowest one is the level of component. Testing the component costs a certain amount of money. If we skip testing the component and build it into the printed board, then testing the board to find the defective component would cost approximately 10 times more than testing a single component. Similar story stands for placing a printed circuit board with a defective component into the system. Cost to test such a system and detect a faulty device cost 100 more than the initial cost. In the end we can conclude that giving up testing does not pay off, in any case.

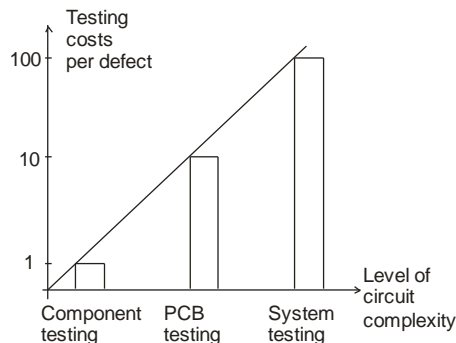


Fig. 5 Rule 10 x 1

At the end of the IC design cost discussion, we should analyze the costs of the electronic circuit design itself. When analyzing the expenses, one should have in mind the entire life cycle of the product.

Modern designers are highly educated and highly responsible persons. Independently from the cost of their work, the cost of their education is extremely high. The work on the design and the product preparation, represent the largest part of the design cost.

Although the price of hardware resources is dropping every day, the expenses for computer equipment required for IC design, do not decrease so fast. Namely, the complexity of the project raises every day, and also the demand for the improved hardware. Constant investment in a new hardware represents a significant part of the design cost. On the other hand, software design tools' cost also grows. New technology requires new hardware and new software, while new hardware and software require new training and education for the designers. Everything costs a lot. Modern and professional working place for IC's design can cost hundreds of dollars. To justify those costs, very specific and efficient designers are required. Taking into account testing (that is prepared during the circuit design), and other aspect related to the life cycle of the product, the software that can support such a complexity is very demanding and requires experts from different fields. The design team is then created from a group of experts, and it increases the price of the design.

The largest design cost, as well as the cost of a product corresponds to unsuccessful project. A mistake in the design can have very bad consequences on the development of the company or can, in the end, financially destroy it.

CONCLUSION

In this paper we have tried to analyze all economic aspects of electronic design and manufacturing. In the period since 2000 in Serbia quite a lot has been achieved in the field of establishing macroeconomic stability, trade liberalization and the creation of some stimulative legislation of interest to foreign investors. However, the initiated economic reforms adopting new legislation and efforts to segment the promotion of investment potentials are just the first step in creating an overall environment necessary for intensive FDI. In addition, one should have in mind that political risks are still very high.

The obvious lack of local entrepreneurial knowledge (international marketing, quality and standards), economically and politically responsive orientation in the direction of encouraging FDI inflows may be a significant factor in the export recovery. Generally speaking, the key interest is that the Serbian economy enter those foreign investors who intend to serve with our sites and third markets, and to purchase inputs in the domestic market to encourage the modernization of local productive capacity and competition among domestic producers. All this together should result in an increase in efficiency and overall global competitiveness of the Serbian economy. We can conclude that electronic technologies are, in fact, high technologies for poor nations. To encourage IC design in Serbia investments in knowledge are required. Afterwards, we only need a computer and space and everything else is in our heads. This sector of economy is what we can and need to cultivate, promote and use for the benefit of us all. The job of IC designer is a great opportunity after graduation, while salary is far above the average in Serbia. It is the opportunity to earn much more if young people are diligent and willing to learn constantly. At the end, generally speaking, this sector may be an efficient shortcut for faster development of underdeveloped countries like ours.

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EKONOMSKI ASPEKT PROJEKTOVANJA I PROIZVODNJE ELEKTRONSKIH KOLA U SRBIJI

Gotovo svaka aktivnost u procesu projektovanja elektronskog sistema je usko povezana sa tehničkim, ali i drugim naučnim oblastima. Najvažniji aspekt projektovanja elektronskih proizvoda za njihov budući opstanak na tržištu jeste svakako ekonomski. Strane direktne investicije u velikoj meri mogu uticati na R&D u oblasti elektronske industrije. Činjenica da industrija elektronskih kola utiče na sve oblasti društvenog razvoja, zahteva uspostavljanje korelacije između projektovanja i proizvodnje elektronskih kola i ekonomije uopšte. U ovom radu biće učinjen pokušaj analize perspektive srpske elektronske industrije na globalnom tržištu elektronskih kola uzimajući u obzir troškove njihovog razvoja i proizvodnje.

Ključne reči: efekti SDI, elektronska kola, IC dizajn, testiranje elektronskih kola, IT.

CIP - Каталогизacija y publikaciji
Народна библиотека Србије, Београд

33+007

FACTA Universitatis. Series, Economics
and Organization / editor in chief Blagoje
Novičević. - Vol. 1, No 1 (1993)- . - Niš
: University of Niš, 1993- (Niš :
Unigraf-X-Copy). - 24 cm

Tekst na engl. jeziku. - Drugo izdanje na
drugom medijumu: Facta Universitatis. Series:
Economics and Organization (Online) = ISSN
2406-050X
ISSN 0354-4699 = Facta Universitatis. Series:
Economics and Organization
COBISS.SR-ID 87230727

FACTA UNIVERSITATIS

Series
Economics and Organization

Vol. 11, N° 4, 2014

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