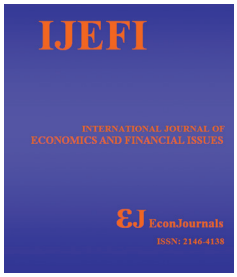

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# Peculiarities of Enterprises Functioning Under Conditions of Cyclicality of the Economy

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**ABSTRACT**

It is necessary to note that under contemporary conditions of economic management that is characterized by a high level of indefiniteness of the market environment, there is a potential risk of a decline in the activeness in economy on the macro level to the level that is below admissible. On the contrary, the interest to problems related to providing stable economic development of enterprises under conditions of unbalanced state of economy sharply grows. Under these conditions special importance is acquired by the search for regularities of economy functioning for the future development of efficient organizational and economic mechanism that can provide competitive functioning of integrated structures of the power engineering at any phase of the economic cycle. Herewith, the crisis of 2008 had a considerable unfavorable impact on the whole Russian industry.

**Keywords:** Functioning of Enterprises, Business Cycle, Power Engineering, Competitiveness, Post-crisis Period
**JEL Classifications:** E32, E66, L26

## 1. INTRODUCTION

The cyclicality theory as a universal form and regularity of the economic development attracts special attention of scientists among all views that exist today in relation to the process of developing the economic organization of the human society. Based on this perception of the cyclicality, the economic cycle that is characterized by periodic ups and downs of the market environment is a specific form of the market economy movement (Aganbekian, 2007).

As a rule, the economic cycle is characterized by four phases: Rise, fall (crisis), depression, and exhilaration. During the rise of the cycle peak, full employment of the population is achieved, and the production starts functioning at its full capacity. In this phase of the economic cycle, the prices tend to increase, and the growth of business activeness ceases. The next phase of the economic cycle is fall or crisis: It is characterized by the reduction of the population employment, declining prices, and if such fall has a continuous nature, depression occurs (Baumung, 2012; Barinov and Sinel'nikov, 2000). Herewith, the lowest level of production and employment is observed at the depression stage. The increase in the level of production, as well as growth of the population employment right up to full employment means the occurrence of the fourth stage of the economic cycle – exhilaration. However, crisis is acknowledged as the main phase of the economic cycle. It stipulates cyclic development of the economy. This phase of the economic cycle includes basic features of the cycle. In other words, this is the periodic occurrence of crises that adds cyclic nature to the economy. Essentially, the economic cycle is a period of time from the beginning of one crisis to the beginning of another.

## 2. METHODOLOGY

Let's consider the impact of the cyclicality of the economy on enterprises through the example of power engineering enterprises. During the research we use the methods of retrospective and comparative analysis of the turnover of products of power

engineering enterprises, expenditures for manufacture and selling products of organizations, expenditures for acquiring materials for reselling.

Table 1 shows the turnover of power engineering enterprises as a whole in Russia for the period since 2011 till 2014.

Data from Table 1 shows that consequences of the crisis started affecting power engineering enterprises even in 2013: The decrease in the turnover of organizations and shipped goods manufactured by enterprises is observed after the crisis occurrence. It is explained by the specificity of technological cycle of manufacturing products of enterprises working in this industry (Bilchak and Borodin, 2009; Womack and Jones, 2008; Gladysheva, 2006). As a rule, the term of products manufacture is rather long (it may reach several years), and the products are also calculated in a long lapse of time after concluding an equipment supply contract. That is why enterprise of the power engineering industry experienced consequences of the crisis even in 2013. At this time expenditures for manufacturing and selling products are decreased. It is stipulated by objective reasons – the decrease in orders for products supply (Table 2).

This table shows that total expenditures for manufacture and selling of products sharply decreased in 2013. It proves the correctness of the above conclusions about the reflection of crisis at power engineering enterprises only in 2013, i.e. only in 4 years after the "fall" stage. The decrease in the total expenditures is defined by the decrease in the demand for power engineering products due to the fact that potential buyers have no required funds. Some potential buyers choose the equipment manufactured in China because these suppliers offer lower prices and longer installment payment plans (from 2 years without the pre-payment). Under crisis, such supply and payment terms and conditions become determinative (Zetkina, 2009; Kalabanova, 2009; Concept of Forming State Comprehensive Program of Russian Machine Building Development up to 2020) when the equipment supplier is chosen. Unfortunately, the quality is secondary.

Besides, in terms of analysis the dynamics of expenditures for acquiring raw materials, materials, bought-in semi-finished products, and component parts for manufacturing and reselling products, fuel materials, goods for reselling in the Russian Federation is interesting (Table 3).

The diagram on the picture shows that in 2013 expenditures for acquiring goods for reselling sharply increased while expenditures for acquiring raw materials, materials, component parts and bought-in semi-finished products decreased. It proves the conclusions that in 2013 power engineering enterprises lost a part of their orders and had to sell some goods in order to earn additional profits.

As the practice shows (Mazilkina and Panichkina, 2008; Radievskiy, 2009; Rodionova and Abdullina, 2013), the majority of industries that manufacture production means and goods of long-term use are characterized by a high level of manufacture and capital concentration in case of the domination of relatively few large companies. As a consequence, such companies get monopole power that is enough to resist the decrease in prices for a specific period of time due to limiting the issue of products as a result of the demand fall. It follows that the demand decrease can affect, above all, the level of manufacture and employment. The opposite situation can be observed if we consider the industries that manufacture short-term use goods. The practice shows that on the whole such industries are rather competitive and are

**Table 1: Turnover of products of power engineering enterprises in the Russian Federation for 2011-2014 (thousand ruble)**

| Year | Turnover of organization (excl. VAT, excise duties, and analogous obligatory payments) - total | Including | | |
|---|---|---|---|---|
| | | Shipped goods produced by the enterprise, works performed and services rendered by the enterprise | Sold goods acquired for reselling | Sold raw materials, materials, constituent parts, fuel materials acquired earlier for manufacturing products |
| 1 | 2 | 3 | 4 | 5 |
| 2011 | 67,385,014.0 | 61,197,851.0 | 5,564,180.0 | 622,983.0 |
| 2012 | 71,715,429.8 | 65,832,103.3 | 5,139,128.4 | 744,198.1 |
| 2013 | 69,792,490.5 | 56,550,322.9 | 12,479,504.0 | 762,663.6 |
| 2014 | 78,552,589.3 | 73,428,387.9 | 4,413,584.7 | 710,616.7 |

VAT: Value added tax

**Table 2: Expenditures for manufacturing and selling products (goods, works, and services) of organizations (legal entities) in the Russian Federation (thousand ruble)**

| Year | Expenses for manufacturing and selling products (goods, works, and services) | From expenditures for manufacturing products | | | | |
|---|---|---|---|---|---|---|
| | | Material expenditures | Expenditures for labor payment | Insurance payments in the pension fund, social insurance fund, federal compulsory medical insurance fund, territorial statutory health insurance fund | Depreciation of fixed assets | Other expenditures |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2011 | 57,083,587.0 | 34,808,020.0 | 12,692,294.0 | 2,940,738.0 | 1,045,107.0 | 5,597,427.0 |
| 2012 | 75,566,133.0 | 36,606,373.0 | 15,152,421.0 | 3,423,850.0 | 1,336,427.0 | 19,047,062.0 |
| 2013 | 61,201,705.0 | 34,533,395.0 | 14,509,277.1 | 3,214,923.7 | 1,981,169.2 | 6,962,940.0 |
| 2014 | 66,897,571.5 | 37,050,981.7 | 16,384,193.2 | 3,762,766.0 | 1,752,677.5 | 7,946,953.1 |

**Table 3: Expenditures for acquiring materials, bought-in semi-finished products, and component parts for manufacturing and reselling products (goods, works, services), fuel material, goods for reselling (including goods and materials that were not sold and used in the manufacture) in the Russian Federation, (thousand ruble)**

| Year | Raw materials, materials, bought-in semi-finished products, and component parts for manufacturing and reselling products (goods, works, services) | Fuel material | Goods for reselling |
|---|---|---|---|
| 2011 | 30,930,671.0 | 514,572.0 | 4,883,933.0 |
| 2012 | 30,838,557.0 | 523,774.0 | 4,299,060.0 |
| 2013 | 29,433,634.9 | 489,201.8 | 9,873,749.4 |
| 2014 | 32,151,155.5 | 574,625.5 | 3,926,876.2 |

characterized by a low level of concentration. The above industries do not have an opportunity to resist the increase in prices. To a greater degree the fall of demand for their products is rather to be reflected on prices than on the level of manufacture. Based on it, it is necessary to pay attention to the conduct of enterprises of the above industries: If enterprises that manufacture investment goods react to the conditions of the crisis by a sharp decrease in the manufacture volumes and an inconsiderable decrease in prices, the enterprises that manufacture short-term use goods have to sharply decrease their prices while maintaining the average volumes of sales.

We will note that the analysis of scientific literature, periodicals (Rodionova and Abdullina, 2013; Starovoytov and Fomin, 2002; Seddon, 2011; Porter, 2006), and statistical data enables us to say that under contemporary conditions, which are characterized by special dynamics of all processes, the duration of phases of the economic cycle as well as amplitude of its oscillations can take on different values. It mainly depends on the reasons that caused the occurrence of the crisis as well as on the existence of specific peculiarities of the economy of various countries, i.e. on the degree of the state penetration and nature of the economy regulation, level of the development of the services area and its share in the general economy, conditions of the development of the technological development and use of its results.

Herewith, it is very important to distinguish cyclic oscillations, which are characterized by change of all indicators and coverage of all industries (sectors), from non-cyclic ones. The peculiarities of non-cyclic oscillations include the following:

- Change of the business activity is observed only in some areas that as a rule have a seasonal nature of works (for example, in agriculture the growth of business activity in autumn (during the harvesting period), in construction – in spring and summer, and the fall of business activity in these areas in winter),
- Changes of only some economic indicators (sharp retail sales growth in the pre-holiday period, growth of business activity in relevant areas).

Based on this, we will formulate basic characteristics of the post-crisis (after 2008) development of economy:

1. Financial and economic crisis outgrew into social (people's life conditions during the crisis are worsened not only due to the considerable growth of the number of unemployed but also because of saving on the salary and other profits in order to decrease expenditures),
2. The global nature of the crisis (it is related to deepening and expending the processes of globalization in the world above all as a consequence of forming the worldwide financial system related to the international capital flow, expansion and deepening of external trade and other forms of economic interrelation of exchange rates of various countries),
3. The depth of crisis (it will be characterized by one of the longstanding recessions of the recent times: According to forecasts, in the developed countries it will continue up to a year and a half).

If we speak about the depth of the financial component of the crisis under consideration, it is necessary to note that it is unprecedented both according to the coverage of all sides of the financial system and according to its depth and sharpness. At least, after the previous financial crises, there has never been an issue about the necessity to re-construct financial architecture of the world and coordination of efforts of twenty leading countries of the world for the purpose of developing measures on preventing such crises in the future. Besides, no large funds have ever been allocated for the fight with financial crises.

## 3. RESULTS

At the present time Russian enterprises do not have funds required for technical update. They need a strong support from the state.

In the developed countries the mechanism of getting out of the crisis has been worked out (the decrease in the refinancing rate on the background of an inconsiderable inflation, establishing it on the minimum levels for the money to be extremely cheap, and the interest for loans, especially for investment, to be on a very low level). For Russia this mechanism is impossible, because this is the country where there is stagflation with high credit rates and immense debt that will be returned during many years. The Central Bank of Russia is hardly the only bank of all central banks of famous countries that increased the refinancing rate three times while all other countries continuously decreased it. To compare, we will show refinancing rates of central banks of other countries: The USA – 0–0.25%, Europe – 2%, Great Britain– 1%, Japan – 0.3 %, Russia – 13%.

Under such a high refinancing rate as that in Russia, the process of investing itself is impossible. It is also not possible to develop enterprises, update their technical basis, and create competitive products.

In order to create favorable conditions for improving enterprises competitiveness, it is offered to perform steps on the state level in three directions:

1. To decrease taxes for enterprises and organizations subject to determining the rule that the funds released in such a manner shall be tax-exempt,

2. To increase the investment component of the consolidated state budget due to a decrease in the current expenditures by spending this money mainly on the infrastructure and technical re-equipment of budgetary organizations,
3. On the lending basis, to use up to half of the gold and foreign currency reserves of the country in the form of investment credits transferred via commercial banks to enterprises and organizations for them to use these funds to update their technical basis.

Thus, expansion and update of the technical basis with the contribution of the state will allow enterprises to solve the task related to the long-term competitiveness of manufacture. In its turn, it will lead to the creation of the potential that is necessary for stable successful functioning of enterprises in the long-term perspective.

Herewith, the conducted analysis showed that the key factor in the provision of competitiveness is expenditures that are lower in the comparison with the competitors. It is provided by the efficient system of organizing and managing operational and as a whole business processes.

It is necessary to note that in mass manufacture, particularly in the sector of power engineering, when manufacturing power components and assembling equipment, there are approaches to improving the system of organization and management of production focused on the improvement of the operational processes efficiency. The latter are expressed through the increase in the system efficiency due to the reduction of the time of the operational cycle, decrease in the prime cost of the manufactured products, and increase in its quality (Baumung, 2012; Bilchak and Borodin, 2009; Chandler, 1999).

Organization and management processes are considered in the "economical manufacture" methodology. They are based on applying "exactly in time" and KANBAN concepts as well as "extension" principle (Womack and Jones, 2008; Zetkina, 2009).

Unlike mass manufacture where issues related to the increase in efficiency are solved by using "economical manufacture", in the single-piece manufacture ("customized" manufacture) the issues related to fulfilling the operational program are urgent, because it is impossible to directly implement "economical manufacture" approaches, or their adaptation will be not efficient enough (Titova and Kolocheva, 2009; Porter, 1980).

To a great extent the manufacture strategy defines the efficiency of using fixed and working assets (Winter, 1993).

Modern tendencies related to applying the manufacture and supply strategy focus on the decrease in the time of production due to revealing and eliminating hidden non-operational losses.

First of all, these losses are related to surplus production when there is an increase in reserves of ready products stored at warehouses and products in the form of uncompleted manufacture (UM), and consequently materials and components (Concept of Forming …; Hitt et al., 2001). At the present time several basic types of production and supply strategies are the most wide-spread: Manufacture for the warehouse, customized assembling, customized manufacture, and customized development.

The basic requirement of customers to the products of power engineering is the manufacture of the order that complies with the quality requirements within the shortest term (Baumung, 2012; Barinov and Sinel'nikov, 2000; Bilchak and Borodin, 2009; Womack and Jones, 2008). In order to comply with this requirement, the enterprise management must strive for decreasing the time for orders manufacture and simultaneous increasing of flexibility, i.e. the speed of reaction to the consumers' requirements that is provided by sufficient availability of production capacities and personnel involved in the order fulfillment. Herewith, the easiest way to decrease the time of manufacture is to create sufficient number of process stocks UM at the enterprise. When orders are received, it will allow to use the minimum time for fulfilling orders from the created process stocks, and thereby to minimize the time for fulfilling orders. In some cases products are manufactured earlier, and are stored at the warehouse before the customer takes them. However, this approach is in conflict with the modern tendencies of the efficiency increase, because it assumes a great number of reserves whose expenses form non-competitive price of products. It decreases the flexibility of the manufacture.

This circumstance also affects the balanced interrelation of operational system elements. In practice, there is a contradiction between the current approaches to organizing and managing the production based on the strategy related to decreasing the time of manufacture and supply due to the creation of the maximum number of process stocks, and modern requirements to efficient operational process. It is possible to provide them only in case of changing approaches to the system of operative management based on the efficient "customized manufacture" strategy (Womack and Jones, 2008; Zetkina, 2009; Schendel and Hatter, 1972).

## 4. DISCUSSION

The analysis showed that in the whole "operational chain" 2 basic contradictions may arise between the elements. They affect the balance of the interrelation.

The first contradiction is related to the productivity of areas and reserves of UM (process stocks) to the areas. This contradiction occurs in two cases: Between the area related to the supplier and the "tight" place, and between the "tight" place and the "consumer" area.

The contradiction between the "supplier" area and the "tight" place arises because of the difference in their productivity (by definition, the productivity of the "supplier" area is higher than the productivity of the "tight" place). The aim of the "supplier" area is to allow as many orders as possible $p_i^* \to \max$. In order to do so, it is necessary to increase NM $w_i^* \to \max$ and to minimize the labor intensity of technological operations at the area $T_{pi}^*$. Herewith, the next area according to the technological chain is the "tight' place". It will have negative consequences in the form of:

- Increase in NM $w_c^*$ to the technological equipment,
- Decrease in productivity $p_c$ because of the increase in the labor intensity of performing the operation $T_{pc}^*$ (labor intensity is increased as a result of incomplete or partial processing at the previous operation, for example, if in case of mechanical processing the bulk is taken according to the upper allowable value and it is necessary to increase the labor intensity for the operations to comply with the admittance for the received parameter),
- Increase in the time for performing operation $t_c^*$ that arises because of the increase in the labor intensity of performing technological operations at the area.

Negative consequences in the "tight" place will lead to the decrease in the stability of the whole operational flow and will have negative impact on the indicators of the flow stability. The productivity of flow $P^*$ will decrease, UM $W^*$ and operational expenses $C^*$ will increase, and the time of the operational cycle $T^*$ will grow.

The contradiction between the "tight" place and the "supplier" area arises also due to different productivity. The consumer area is also interested in the maximum productivity $p_i^* \to \max$. However, it has to stand idle because of the lack of the required number of orders that come from the previous area. Herewith, the area makes an attempt to increase its loading due to additional orders and processing. It leads to the queues and an increase in the time of orders passing the area.

The second contradiction is related to the time of performing technological operations and operational expenses. This contradiction occurs between the "supplier" area and the "tight" place because of the minimization of the labor intensity of the manufacture at the supplier area. It will lead to an increase in the loading of the "tight" place and a decrease in its capacity.

Work sites are interested in minimizing operational expenses $c_i^*$ according to means of minimizing labor intensity of orders manufacture and decrease in additional labor intensity for finalizing and correcting non-conformances. The decrease in labor intensity will directly influence the decrease in time of the operational cycle $t_i^*$ and the increase in the productivity of area $p_i$. However, such general decrease in operational expenses can lead to over-loading of the "tight" place.

## 5. CONCLUSION

Thus, in order to provide competitiveness of the enterprise and comply with the consumers' requirements, the production system (PS) of the power engineering enterprise must provide the maximum operational efficiency. It is expressed by such indicators as productivity of the PS, time of the operational cycle of orders fulfillment, volumes of reserves of uncompleted production, labor intensity of manufacturing orders that includes additional labor intensity for finalizing and correcting non-conformances related to the quality. However, the achievement of target indicators of the PS efficiency is influenced by negative external and internal factors – system limitations that arise due to the lack of the balance of the interrelation of the PS system. Elements of the PS are processes required for fulfilling the order for manufacturing a product. They include the operational personnel, the required technological equipment, furniture and tools used at operational areas as well as infrastructure facilities and operational environment, informational system and other means of labor required for their efficient functioning. The PS processes are interrelated with one another. They are an interrelation of processes: Organization and management, creation of products and providing processes. Their control and organization of efficiency can finally provide a decrease in labor intensity, expenditures and consequently an increase in competitiveness.

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