

## CRISIS MANAGEMENT IN METALLURGICAL ENTERPRISES

Received – Prispjelo: 2013-08-16  
Accepted – Prihvaćeno: 2013-12-30  
Review Paper – Pregledni rad

On the basis of report analysis which presents situation in metallurgical sector after 2008 the range of changes implemented in management of metallurgical enterprises was characterised. A definition approach to crisis management was suggested as the process when the enterprise is managed during the breakdown period in market condition of the economy in the way directed towards preventing the negative effects of crisis inside enterprises. The publication presents the key aspects of enterprise management in the period of collapse of the balance between the supply and demand on the metallurgical market.

*Key words:* metallurgical enterprise, crisis management, strategy, management

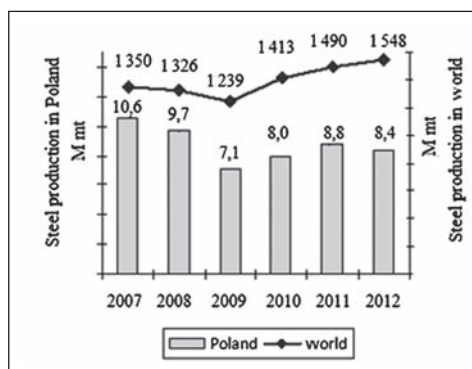
### INTRODUCTION

Economic crisis is a phase of depression in business cycle. Functioning of enterprises in the period of collapse in the balance between the supply and demand on the goods and services is different from the period when the market conditions are favourable. In the area of strategic management the enterprises aim at limiting the costs of conducted business activities and achieving the substantial economic benefits [1]. The basic element of going out of crisis situation is well prepared financial plan which helps the companies to gain profits and first and foremost improvement of cash flow [2]. Repair activities which are taken up in enterprises in the period of bad economic cycle all come up to the notion of crisis management. It is a process of preventing the spin in the continuation of enterprise functioning in a situation of lack of balance on the market [3]. In a narrow approach, crisis management is a form of coping with the unusual situation temporarily. In a broader sense, crisis management is a thought-over strategic activity which comprises a set of actions which allow the enterprises to overcome the negative results of economic crisis. Crisis management is a process of introducing and implementing serious changes in the structure of functioning of the whole enterprise and, first and foremost, is the form of the enterprises being ready to react for unfavourable market conditions. It can be assumed that crisis management is a higher phase of development in the management process understood as enterprise management in crisis.

### GROWING PROBLEMS IN METALLURGICAL INDUSTRY

Since the beginning of world economic crisis metallurgical industry has had overproduction which was

multiplied due to breakdown in construction market and the drop in production of cars as well as financial investments in infrastructure in some of the countries, particularly in Europe. It is estimated that in Europe there is still about 500 million tonnes of overproduction [4]. According to market analysts, demand for steel in Europe decreased by 25 % in comparison to the period before crisis. Since 2007, the demand for steel in Europe has decreased by 60 million tonnes in Europe. Although the production of steel in the world was higher by 1,1 % in reference to one year earlier the publications underlined that production of 1 548 million tonnes of steel was a record, in reference to year 2007 it has dropped by 40 million tonnes (Figure 1) [4]. Data shows that Chinese steel industry with a production of 716,5 million tonnes of produced steel in 2012 manufactures over 20 % more steel than the demand (Figure 2). There are 6 out of 10 biggest steel producers in the world working in China which multiplies the overproduction phenomenon [4]. In Poland, in 2012, there was 8,4 million tonnes of steel produced which was 2,2 million tonnes less steel than in 2007. It is a decrease by 20,8 % in the whole period of crisis (Figure 1) [5].



**Figure 1** Steel production in times of crisis in Poland and in the world [5,6]

Among the biggest steel producers in the world the decrease of production was noted in Japan (drop by 12,8 million tonnes of production in 2012 in comparison to 2007, which was before crisis an in percent meant 10,6 %) in the United States of America (drop by 8,6 million tonnes which is 8,8 %), in Russia (production smaller by 2,2 %), in Germany (drop by 11,9 %) and in Ukraine (drop by 22,9 %). There was also an increase of steel production noted down in some countries – apart from China (which produced nearly a half of world steel production in 2012) there was also an increase of production in India (increase in reference to production achieved in 2007 by 23,6 million tonnes of steel, that is by 30,8 %, in South Korea (increase by 34,8 %), Turkey (increase by 50,7 %) and in Brazil (increase by 2,6 %) [7] (Figure 2). European steelworks worry about steel overproduction which takes place in Turkey. Turkish producers announced that till year 2023 they are planning to produce 85 million tonnes of steel per year (currently 35,9 million tonnes of steel).

The consequence of overproduction was stoppage of production lines and even attempts of liquidations of whole steel-plants (in Taranto in Italy and in Florange in France). Functioning steel-plants use about 70 % of their production force in time of crisis. The properties of manufacturing steel-plants are partially unused. Some unused buildings and devices are temporarily excluded from the production or are even used by new strategic investors. Production in steel-plants is further complicated by the prices fluctuation of raw materials and the increase of prices in energy production by decrease of prices for manufactured metallurgical products. The economists say that the prices of some metallurgical products dropped

by 45 % (i.e. reinforced steel dropped in price by 45,5 %, price of metal sheets dropped by 44,8 %) [8]. The prices barely cover the costs (it should be pointed out, however, that costs of steel production and metallurgical products in Europe are higher than in Asian countries). Economic crisis influenced also the foreign trade of metallurgical products. In 2008 the dynamics of export in global scale dropped by 1,6, whereas the dynamic of import was then in plus. In years 2009 – 2011 both the index of export dynamics and the index of import of metallurgical products were in minus (Figure 3).

Another problem in metallurgical industry in the period of crisis is excess employment. Steel-plants all over the world suffer from the problems connected with mass-dismissals of employees. In Serbia the Zelezara Smeredovo steel plant was closed and nine months later it was re-open to manufacture again and save the working places (governmental help) [10]. In Poland excess employment is observed in the biggest metallurgical enterprises, namely ArcelorMittal Poland (planned dismissals of over 1 000 employees), CMC Zawiercie (plans to dismiss 230 employees), and ISD Huta Częstochowa (announced dismissals of 1 500 employees). In period of crisis more than 4 700 workers were dismissed from metallurgical sector in Poland (Figure 4).

In the period of economic crisis the debts of the steel-plants increase. Almost all the biggest steel producers noted down financial losses. Difficult financial situation of steel-plants is further complicated by low prices of sold products by increase of prices of iron-bearing products and energy-related fuels. Only during 6 months of 2012 the biggest steel producers on Chinese market decreased the prices of sold products by

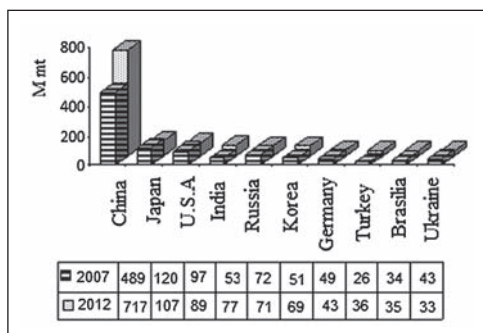


Figure 2 The biggest steel producers in the world [6]

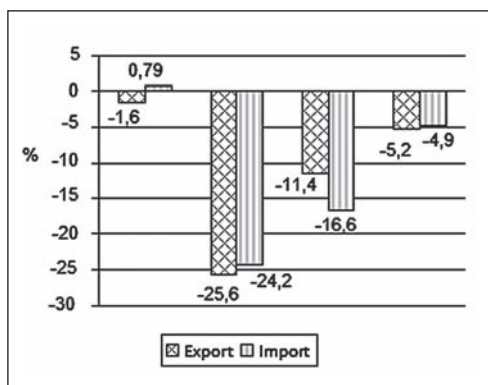


Figure 3 Dynamics of exports and imports with metallurgical products in the world [9]

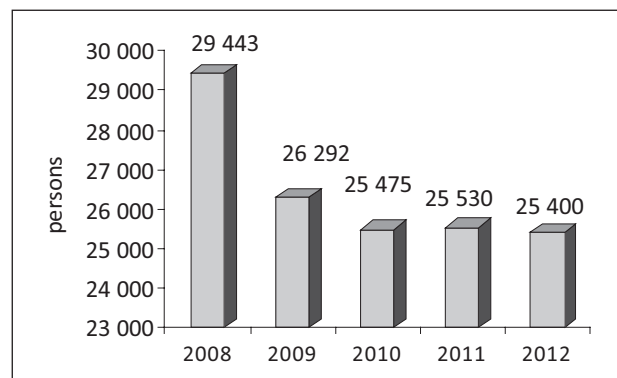


Figure 4 Employed by Polish steel industry [5]

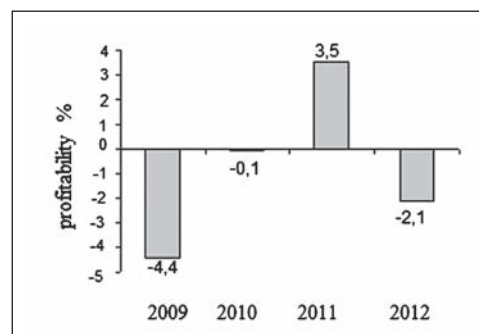


Figure 5 Profitability in Polish steel industry [5]

15 % [11]. In Poland the ROS – return on sales of steel-plants was in minus in 2012 (Figure 5).

To sum up, the key problems which grew bigger in crisis made the metallurgical enterprises initiate the activities which allow them regain the balance with the surrounding in time of recession. Generally speaking, going out of the crisis is very difficult because getting rid of the external causes of crisis is impossible. Enterprises which take up radical internal actions which in the initial stages of economic crisis are defined as reactive or passive and in the long run take up a form of anticipatory activities within the active forms of going out of crisis [12].

## CRISIS MANAGEMENT IN METALLURGICAL ENTERPRISES

Assuming that metallurgical enterprises take up active activities connected with going out of crisis defined as crisis management (In German: Kriesenmanagement) or anti-crisis management [13], the specificity of this form of management has been characterised. Enterprises have rearranged their strategic aims and have put emphasis on cost reduction. A modification or total change of action strategy was conducted. Steel plants have introduced changes in organisational structure (simplification of structures), held up investments, sold unnecessary buildings and devices, limited production and assortment, reduced employment and first and foremost improved efficiency of conducted business activity by controlling costs and strengthening the discipline of work [14]. The range of implemented changes is varied depending on the enterprise. In the observation of changes in metallurgical enterprises management there were two key stages of changes found. **Stage 1** included changes in storage management (limiting the amount reserves) and in the structure of production (adjusting the manufacturing of metallurgical products to the de-

mand of the market on which the decrease of use of metallurgical products occurred), freezing the investments and gradual reduction of unnecessary permanent assets. **Stage 2** comprises activities which are more radical including employment reduction or exclusion of unnecessary work force or even liquidation of enterprises. Shallow and reactive changes were gradually broadened by radical and deep changes by implementing anticipatory activities. Crisis management became a strategy directed towards preventing the negative effects of unbalanced market within enterprises [1]. The features of crisis management contrary to immediate actions defined as reaction of metallurgical enterprises to the crisis are presented in Table 1.

In view of reaching a conclusion a matrix of strategic changes in enterprises in conditions of growing economic crisis was prepared (Figure 6) – going from temporary strategies of going out of crisis to active strategies of action defined as crisis management.

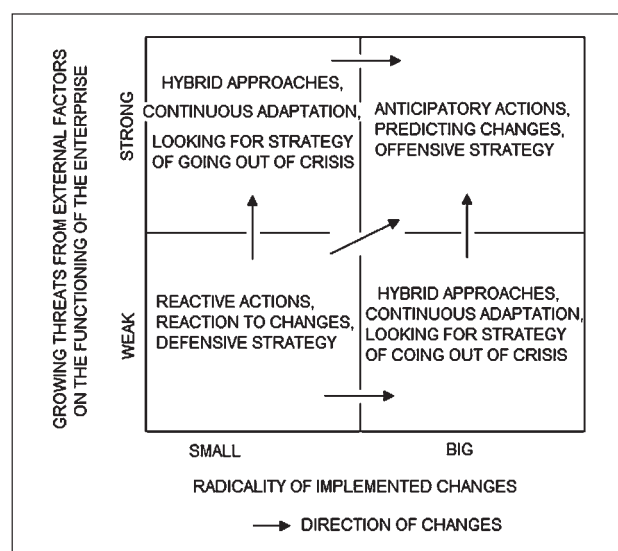


Figure 6 Matrix of strategic changes in enterprises

Table 1 Enterprise management in the period of crisis

Assessment criterion	Reaction to crisis	Crisis management
Attitude towards surrounding	Passive, reactive actions	Active, anticipatory actions
Strategy of actions	Defensive	Offensive
Aim of actions	Regaining cash flow	Achievement of balance with the surrounding
Cost approach	Reduction of costs of basic activities of the enterprise	Reduction of costs of all processes of the enterprise
Organisational changes	Centralisation of decisions, dominating system of commands and orders	Lean Management (LM), high level of professionalism of management staff, particularly the general manager who becomes the leader of staff in going out of the crisis
Human resources management	Shifting between the posts, unpaid leaves of employees	Reduction of employment and quality exchange of staff (dismissals of employees whose job qualifications are not in demand in the enterprise and new employees with new competence and qualifications are hired instead)
Attitudes of employees	Fear, insecurity, concern not to lose work (pressure of professional commitments towards keeping the workplace)	Involvement of employees (employees take part in repair activities), effort of the whole working staff concentrated on the conduction of strategy of going out of crisis
Changes in supply chain	Individual strategies of actions in particular elements of the supply chain	Looking for allies to conduct anti-crisis policy within the supply chain (coalitions and strategic alliances)
Cooperation with external institutions	Temporary forms of help for sector from governmental institutions (domination of the actions which hamper the results of crisis)	Complex program of help for industry in the period of crisis, cooperation with governmental institutions, local councils, banks etc. (domination of supporting actions)

## SUMMARY

Crisis management is a new challenge for metallurgical enterprises in 21st century. Crisis may become a turning point for the development of metallurgical sector in the years ahead. Radical changes implemented in metallurgical enterprises in the period of economic crisis may again awake the necessity of re-conversion of the whole industrial regions connected with metallurgy. In many countries going out of crisis is supported by governmental institutions. It is broadly discussed how to protect the assets of shut down enterprises and work places. The course of the adjustment process of metallurgical enterprises to crisis situation is constantly the topic of scientific research of both scientists and market analysts.

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**Note:** The responsible translator for English language is D. Silo, Katowice, Poland