

STRUCTURAL REORGANISATION OF A COMPANY IN A CRISIS OF SUPPLY DISCREPANCIES

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Abstract. The *relevance* of research is determined by the risk of any organisation being affected by the negative effects of overproduction. This requires businessmen to quickly identify and solve related problems by carrying out structural reorganisation of their companies. As such, the *main goal* of the article is to research the problematic of the overproduction crisis, which is concluded by such objectives as crisis consequences for government and manufacturing organizations evaluation, and development of recommendations regarding the structural reorganization of organizations in the current conditions. The *main research methods* are graphical and tabular methods, as well as synthesis and analysis in combination in a complex approach, which allows to study crisis processes in order to optimise the company's activity through effective structural reorganisation. The *main results* of the research are the study of the concept of overproduction crisis and its problematic consequences for the country and the industry. The analysis of the influence of overproduction on the production and trade organisation and the development of proposals for the structural reorganisation of the company in crisis conditions. Organisational reconstruction in the modern environment was studied through the use of careful management, careful problem solving, visual management, quick configuration tool, autonomy, process balancing, careful quality assurance, careful human resource usage, careful supply chain management and production flexibility. Organisational restructuring can also be aimed at the implementation of digital technology, which can be categorised by the scenarios of forecasting, waste analysis and redistribution. Organisational restructuring in the modern environment has been studied through the use of careful management, careful problem solving, visual management, quick configuration tool, autonomy, process balancing, careful quality assurance, careful human resource usage, careful supply chain management, and production flexibility. In order to prevent the influence of crisis occurrence through changes in organisational structure, these procedures were proposed: assembly line load stabilisation, manufacturing analysis and 5S system. The *results of this article and the conclusions based on them* may be of practical value for students studying the peculiarities of effective financial management in the conditions of crisis, as well as for businessmen interested in maintaining their financial results, maximising profits, preventing crisis problems and optimising business activity through changes in the company structure.

Key words: business activity optimization, crisis occurrences, organization restructuring, manufacturing overproduction, circular economy.

JEL Classification: D21, D81, L22, Q31

1. Introduction

The overproduction crisis is one of the types of market economy crises in which the balance between production and demand is disturbed due to an excessive amount of goods being produced. It is usually considered one of the phases of the Juglar economic cycle (Pasinetti, 2021). Overproduction harms both the country and various sectors of the

economy. The problems caused by overproduction are usually the following (Wolf, 2015): decrease in demand for products and services; increase in the level of bankruptcies; decrease in the level of business activity, which is characterised by the closure of non-bankrupt organisations and a low number of new companies; increase in the level of unemployment; decrease in real wages for employees. The above-

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mentioned problems influence each other and create a serious problem. Reduced demand leads to higher levels of bankruptcy and lower levels of business activity. These problems lead to unemployment, the high level of which, combined with reduced demand for labour, leads to a reduction in workers' incomes. In these conditions, many organisations are forced to reduce salaries due to low demand for the goods they produce, which in turn forces them to go into a strict savings mode. Low salaries, fear of losing their jobs and unemployment force the population to minimise their spending, which has a negative impact on demand (Supply Chain Management, Lean 2016).

The research on this topic is necessary because of the crisis consequences on the global expansion, which is happening due to the globalisation of the financial system. The chain reaction hinders the activity of various industries and ruins weaker participants in the market. Economic crisis has always had a negative impact on society due to the stagnation of changes in the economy. Modern research partly investigates the problem of overproduction. For example, Hogan and White (2021) studied the peculiarities of the Great Depression, which was caused by a lack of financial resources for the purchase of overproduced goods. Since the amount of gold to which money is tied was limited, there was a financial deficit and consequently a loss of solvency.

António and Blanco-Arana (2022) have studied the peculiarities of the 2008 economic crisis, which was also caused by overproduction and ways of economic growth. Other authors have explored the circular economy, stressing that it is a key to careful production that will allow the reduction of overproduction in the world. For example, Greer, Wirth and Loorbach (2021) have examined the resource and waste paradox, the practical dilemmas and the consequences of moving the economy towards a closed loop. Bimpizas-Pinis, Bozhinovska, Genovese, Lowe, Pansera, Alberich and Ramezankhanif (2021) have also investigated the effectiveness of a closed-loop economy in difficult crisis conditions. Scarano, Sciarrillo, Tartaglia, Zuzolo and Guarino (2022) have studied the circular economy using the example of fruit recyclables as a stable source for restoration and reuse. The main problem of the previous scientific research, concluded in the field of the topic, is their insufficient research of overproduction and ways of organisational structural reorganisation.

Therefore, the main goal of this scientific research is to study the main features of the overproduction crisis and to develop suggestions or recommendations for business reorganisation in the conditions of crisis, which are implemented through information on overproduction issues for the country and industries,

an analysis of overproduction influence on production and commercial enterprises, research of recommendations on reorganisation from other researchers.

2. Materials and methods

The basis of the methodological approach in the present work consists of such methods as synthesis, analysis and graphical, tabular methods. The analytical method made it possible to divide the subject matter of the study into components, which made it possible to study the peculiarities of the overproduction crisis and the problems it caused. An analysis of the dynamics of the financial characteristics of large companies and retail organisations was also completed. The method was also used to study the recommendations of other researchers on the reorganisation of the company structure. The synthesis method combined the obtained results into a unified system, which allowed to study the optimisation of the organisation's activity in the conditions of the overproduction crisis.

In the article, the graphical method was used for data aggregation as well as for the demonstration of results through a picture, which would represent strategies for diversification activity as methods for optimising the company's activity in conditions of overproduction. The tabular method was also used for aggregation of obtained results, which allowed to demonstrate data on sales dynamics, overproduction of cars in the period 2019–2021, as well as the level of resources and net profit of the largest companies in the sphere or trade. The scientific research was carried out on the basis of a prepared theoretical base, which is a quality foundation for any further research. The theoretical basis of the research consists of the works of Italian, British, American, Portuguese and Dutch scientists, aimed at the investigation of a number of problems related to the crisis occurrences caused by overproduction, business reorganisation and careful production. The research-experimental basis of the work consists of large and successful automobile brands such as Toyota, Volkswagen, Honda, Hyundai and Nissan, as well as the largest retail companies in the USA: Walmart, Amazon, Costco, Kroger, Walgreens Boots Alliance, Home Depot.

This scientific work was completed in three main stages. In the first stage, a theoretical basis was prepared, which served as a foundation for further scientific research. At this stage, the main features of the overproduction crisis were identified and the problems caused by this crisis were analysed. In the second stage of the research, the dynamics of car production, sales volume and unsold units were studied. An analysis of the net profit dynamics of the

most popular car brands and retail companies in the world was completed. Evaluation of overproduction influence on production and trade organisations. In the third stage of this scientific research, on the basis of the obtained results, the conclusions of the scientific approach were deduced, which are results of the completed research and set primary recommendations on structural reorganisation of an enterprise in overproduction crisis conditions. As a whole, the results of the work obtained during the research and formulated on the basis of the conclusions can be used by specialists responsible for the management of the organisation in crisis conditions.

3. Results

At present, the primary goal of the manufacturing environment is to get goods to the consumer on time while keeping transportation and manufacturing costs low. In other words, companies are trying to maximise their profits by increasing their value to the consumer while using as few resources as possible. Manufacturers need to be interested in all business processes and their impact on consumer satisfaction. They also need to be informed about the specifics of raw material supply and control chain management by clarifying the terms of supply, manufacturing and delivery to the end user (Lewis, 2000). Material reserves can be viewed in three ways: raw materials, production materials and finished products. A lack of these reserves can have a negative impact on the overall and retail sales and on the consumer. Therefore, a modern businessman should strive for the most optimal level of reserves. The excess of supply or overproduction may lead to excess of production in relation to paying capacity demand. The result of overproduction is a fall in prices and unsold goods, which causes expenses on production and labour. An end result of improper reserve management is a decrease in net profits in the future (Cato and Mobley, 2002) (Harris and Mongiello, 2006). A structural reorganisation

of a company can be a way to increase profitability and save market positions. The dynamics of car sales between 2019 and 2021 among the car manufacturing brands are shown in Table 1.

China, the US and Japan are the leading countries in terms of car brands. From 2019 to 2020, almost all countries have slowed down their production process, with the exception of South Korea, which has increased its sales volume by 92438 cars. Between 2020 and 2021, many countries show an increase in car sales, including China, the US, India, Mexico, Spain and Brazil. Countries such as Japan, South Korea, Germany and Thailand have reduced their sales volumes. Based on Table 1, the dynamics of unsold cars in 2019–2021 have been presented in Table 2.

When analysing the dynamics of unsold cars, it is worth noting that this table shows that consumers are unable to pay. As a result, most of the leading countries in terms of car production and sales have large stocks of unsold cars. The exceptions are China and the US, where demand is higher than supply, although Brazil has managed to achieve the same in 2020. Negative indicators in some countries may be due to the fulfilment of pre-orders or the sale of older goods. For a clearer understanding of the amount of unsold cars or their overproduction, the author will analyse the dynamics of financial indicators of large and popular companies in the industry, which is shown in Table 3.

Thus, over the last three years, Toyota's net profit has risen steadily. No correlation was found between net profit and reserves. For instance, when reserves were reduced by 4.6% in 2020, net profit increased by 8.14%, and then, in 2021, reserves grew larger (by 13.97%) with profits (by 10.2%).

The analysis of the Volkswagen company did not reveal any trends. For example, in 2020, reserves were reduced by 6.24%, while profits also fell by 36.1%. In 2021, reserves will be reduced by 0.22%, while net profit will increase by 73.5%.

In the analysis of Honda Corporation, no relationship was found between reserves and net profit.

Table 1

Dynamics of car sales in 2019–2021

Country	Sales volume, pcs		
	2019	2020	2021
China	25754483	25267553	26248288
USA	17576091	14954053	15493145
Japan	5191245	4594956	4445053
India	3816887	2937803	3759539
South Korea	1781326	1873764	1707959
Mexico	1317730	949145	1014680
Germany	3957403	3219304	2921963
Spain	1485354	1018001	1019606
Brazil	2787955	2058427	2119772
Thailand	1029108	804372	774944

Table 2

Unsold car dynamics 2019–2021

Country	Number of unsold units, pcs		
	2019	2020	2021
China	-55169	-96294	-191045
USA	-6655421	-6181405	-6396767
Japan	4318102	3378255	3287845
India	698936	455216	636744
South Korea	2169263	1633114	1754417
Mexico	2433020	2082729	1967041
Germany	1040556	493843	431282
Spain	1531170	1248776	1235469
Brazil	16057	-153254	48502
Thailand	984602	622702	910449

Table 3

Net profit dynamics of the most popular car brands in 2019–2021, in millions of US dollars (Investing.com)

Company	2019	2020	2021	
Toyota	Net profit	1882873	2036140	2245261
	Reserves	2656396	2533892	2888028
Volkswagen	Net profit	13887	8867	15382
	Stocks	46742	43823	43725
Honda	Net profit	610316	455746	657425
	Reserves	1586787	1560568	1545600
Hyundai	Net profit	4942356	1424436	2980049
	Reserves	11663848	11333734	11645641
Nissan	Net profit	319138	-671216	-448697
	Reserves	1257923	1340423	1139571

Note: reserves are generally understood to be reserve raw materials, finished goods and goods in stock, unfinished production, product for resale

Therefore, in 2020, reserves will decrease by 1.65% while net profit will increase by 25.3%. In 2021, the company's reserves will decrease by 1%, while net profit will increase by 44.3%.

In the analysis of Hyundai Corporation, in 2020, their reserves decreased by 2.83% and their net profit also decreased by 71.2%. In 2021, the increase in their net profit was 109.2%, while their reserves also increased by 2.8%.

Nissan is the only one of the 5 companies analysed to make a loss. In 2020, their losses were \$671216 million, while their reserves increased by 6.6%. In 2021, they reduced the level of reserves by 14.98% and managed to improve their financial result, although they still lost less.

As a result, the assessment of the impact on production organisations is unclear, as there was no clear link between production and financial indicators in the automotive companies. The analysis of unsold cars has shown the over-saturation of the market, which, by analysing the most popular car companies, has shown their ability to properly manage crisis conditions. In order to assess the influence of

overproduction on trading companies, the authors will examine the retail sector. For this purpose it is necessary to analyse the dynamics of financial indicators of the world's largest companies in this sphere, which are presented in Table 4.

From 2019 to 2021, Walmart has been increasing its reserves and net income, but in one year it has caused net income to fall by 9.21%. Therefore, it is not possible to establish a clear link. It is important to note that the company has kept its reserves relatively constant over a three-year period, at around 0.37-1.15%.

When analysing Amazon, it is important to note that there is a clear trend towards an increase in net profit, but it is possible to link this to an increase in reserves. Thus, between 2019 and 2020, the company's reserve level increased by 16.09%, while net profit also increased by 84%. With a positive tendency to increase reserves, the company also increased its reserves in a span of the next period. Therefore, in 2021, the reserves were increased by 37.2%, while the net profit was increased by 56.41% compared to the previous record.

Table 4

Net profit dynamics and reserves of the largest retail companies in the world for 2019–2021, in millions of US dollars (The Wall Street Journal. Browse Companies 2022)

Company	2019	2020	2021
Walmart	Net profit	6670	14881
	Reserves	44269	44435
Amazon	Net profit	11588	21331
	Reserves	20497	23795
Costco	Net profit	3659	4002
	Reserves	11395	12242
Kroger	Net profit	3076	1640
	Reserves	6846	7084
Walgreens Boots Alliance	Net profit	3982	456
	Reserves	9333	9451
Home Depot	Net profit	11121	11242
	Reserves	13925	14531

Note: inventories are generally defined as reserve raw materials, finished goods and goods in stock, unfinished products, products for resale

When analysing the company Costco, it is worth noting that they have been slowly increasing their reserves and net profit in all the periods presented, namely: reserves from 2019 to 2020 were increased by 7.43%; from 2020 to 2021 reserves were increased by 16% and net profit in 2020 was more than the previous record by 9.37%, net profit in 2021 – by 25%.

Kroger did not show a clear trend, as their reserves increased by 3.5% from 2019 to 2020, leading to a 46.68% decrease in net profit. From 2020 to 2021, their reserves decreased slightly, while their net profit increased by 55.8%.

When analysing Walgreens Boots Alliance, it is worth noting that from 2019 to 2020, their reserves increased by 12.6%, which caused their net profit to decrease by 88.54%. From 2020 to 2021, their reserves decreased by 13.67%, while their net profit improved by 386.8%. Using this company and the previous one as an example, it is possible to determine a negative influence of the increase in reserves on the financial results of the company.

Home Depot has shown a tendency to increase its net profit while increasing its reserves. Thus, from 2019 to 2020, their reserves increased by 4.3%, while net profit increased by 1.1%. In 2021, their reserves were greater than the identical level of 14.4%, while net profit also increased by 14.4%.

The influence of the commercial organisations is therefore unclear, as there was no clear correlation in the analysis of the reserves and financial indicators of the retail companies. One company has suffered from overproduction, while others do not show any effect of overproduction. However, this is not because they are not affected by overproduction, but because they have an effective management system. As a result of crises in conditions of overproduction, there is a need for structural reorganisation of a company. At present, practically every organisation uses diversification of business activity, which is one of the effective management strategies and indicates optimisation of business activity by risk distribution, usually through expansion of production diversity or provided services (Kwon, Bae and Park, 2021). However, in the conditions of overproduction, it is important to apply special measures for

diversification activity reduction, which accelerates the "rehabilitation" of enterprises, included in the structure of an organisation, presented in Figure 1.

When analysing the strategy or reorganisation, it is important to note that it does not focus attention on liquidation, but on activity aimed at turning unsuccessful production into successful. This strategy is suitable if the reasons for the losses of branches are mostly short-term and the company's problems are in the target area of activity. This strategy is to be preferred, as the liquidation of disadvantageous branches, which may be temporary, does not affect the long-term strategies. As for the reduction strategy, it is characterised by narrowing the diversification range and reducing the number of organisations included. This strategy should only be used when the director of the company decides that the organisation is too diversified. In this case, it is possible to concentrate efforts on the main area of activity. A diversification reduction strategy is usually implemented by liquidating branches that are too small to make a difference to the net profit of the organisation, or by liquidating companies that are not closely related to the main activity. The liquidation of such production frees the company's resources, which can be transferred to the liquidation of debts or the improvement of the profitable areas of the organisation's activity (Lhabitant, 2017).

A portfolio shift strategy is characterised by a radical restructuring of the company's portfolio and structure. This strategy envisages an activity aimed at rebuilding the organisation's business structure through a series of sales and acquisitions. This diversification strategy involves not only the liquidation of the old company's activities, but also the creation of new ones. Directors exclude not only unstable or weak activities, but also those that belong to unattractive sectors or those that have lost their strategic correspondence with the structure. Many TNCs, disappointed with the companies they have acquired and those that present certain complications in the direct management of branches, shift their portfolios in order to narrow down the main activity and increase the manageability of the company in general (Berrill, Campa and

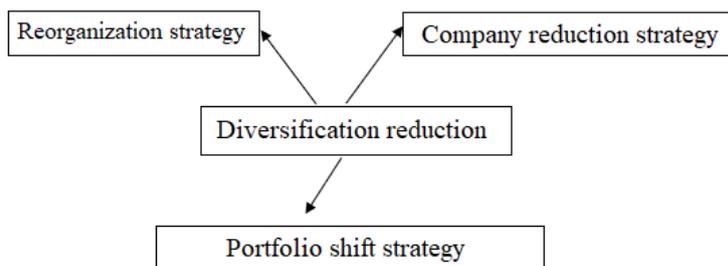


Figure 1. Strategy to reduce diversification activities

O'Hagan-Luff, 2021). Thus, to improve the company's activity in conditions of crisis, a strategy of diversification reduction can be used for a reorganisation.

4. Discussion

When comparing modern research of scientists with the results of this analysis of restructuring proposals, it is worth noting that Strotmann, Baur, Börnert and Gerwin (2022), using the example of the food service industry, have proposed other approaches to the issues of crisis occurrence influence on its activity. According to them, the change in the organisational structure must be aimed at the use of digital technology, which can be categorised according to a scenario: forecasting tools; waste analysis tools; redistribution tools; food handling action catalogues. The researchers have included intellectual computer software, based on data analysis, in the forecasting tools. By analysing past activity using algorithms combined with external indicators such as day of the week, weather, season, a demand forecast can be made which will increase planning certainty. Demand forecasting involves many key processes that can accelerate the change in business strategy by optimising food handling. In order to increase the effectiveness of operational and strategic activities, as well as to ensure continuous process optimisation, continuous analysis is required. Waste analysis tools consist of a complex of software and hardware solutions designed for the distribution of catering organisations. Based on the collected data, it is possible to perform a retrospective analysis of the amount of waste saved by classifying the origin and number of food waste measurements. Waste analysis in a food industry example can be simplified by identifying the primary sources of food waste, which are usually due to overproduction, storage issues or problems, cutlery or service leftovers. Cause and effect processes can be identified and measures can be implemented to reduce the amount of food waste and prevent it from occurring.

As for the redistribution instruments, they focus on donations to other organisations, companies or clients, or on the resale of leftover food at much lower prices. This instrument can expand the distribution network of the food service organisation by connecting subjects and creating new sales channels. It also accelerates the formation of the necessary attitude of the customers to the leftovers and to the organisation in general. The selection of measures ensures practical assistance in handling food products. These measures range from recipes for leftovers to educational material for customers and employees. These tools can support strategic management as far as operational processes thanks

to the overview of digital tools and principles of food waste prevention. The selection of measures allows to identify optimisation perspectives in several processes. Other researchers, such as Jana and Tiwari (2021), in their work on the careful production of clothing, have investigated the restructuring of the organisation in modern conditions through the following elements: careful management in clothing production; careful problem solving; visual management; rapid configuration; autonomy; process balancing; careful quality control; careful personnel; careful supply chain management; flexible manufacturing.

By careful management, the authors meant allocating more value while using fewer resources within a given project. Careful problem solving is seen by economists as the standardisation of work and cycles consisting of planning, execution, control and interaction, fishbone diagram, reason evaluation and analysis of 5 "why's". Visual control, according to the scientists, will optimise business activity by using tools such as 6S audit, Gemba, Andon, Visual Factory, Monitoring Panel and various types of diagrams. Rapid configuration is also important for organisational restructuring and the successful implementation of flexible and cost-effective manufacturing systems. Using apparel manufacturing as an example, economists have shown that in a competitive environment, manufacturers should be able to respond quickly to the dynamics of the fashion industry in order to increase the effectiveness of reconfiguration. A tool such as SMED (single-minute exchange of die), which provides an effective and rapid method of production changeover from a current product to a new line and is widely used in the manufacturing sector, can be used for rapid configuration optimisation.

The autonomy element is described as a method of automation using human intellect. Automation is a self-sufficient working system designed to prevent user or working system errors by detecting discrepancies, errors and subsequent warnings. Thanks to a working system, an inappropriate product or an error is prevented from reaching the next production step. In careful production, autonomy is achieved through the use of the following tools Jidoka (humanised automation); Poka-Yoke (fail-safe or error-proof); Andon (warning). Process balancing is another important element in the structural reorganisation of companies in overproduction conditions. A high level of competitiveness forces the organisation to use a "precise time" approach. Careful production provides effective tools for balancing business processes, such as Heijunka (load stabilisation); Kanban (production with unfinished or controlled assembly). Careful quality control was described

by the researchers as the application of statistical control principles to the organisation, which included the importance of quality control from design and correspondence. The focus was on process control using statistical methods, which included statistical process control and assessing the quality of batches produced using an introduction to Six Sigma concepts and acceptance sampling. The prudence of staff was also seen as an important aspect of the organisation of the firm in the face of problems associated with overproduction. The authors emphasised that human resources and diligence make it possible to expand opportunities and support each other.

The basis of the prudent supply chain management element is to keep sufficient, but not excessive, reserves of raw materials on hand to have enough resources to keep the operation running while waiting for the next delivery from the supplier. The central idea of flexible manufacturing is to reduce the amount of waste produced while focusing on the needs of people to understand the value of customers. The authors also emphasised that companies in today's crisis need to organise their work activities in such a way that, based on real feedback from the market, they provide the right products and services, thereby increasing value and efficiency for customers. Comparing the conclusions of the research with the results of Womack and Jones (2003), it is worth noting that in order to prevent overproduction, which is considered one of the most dangerous types of losses, economists studied the structural reorganisation of a company through the implementation of the following procedures: stabilisation of assembly line load; implementation of the SS system; production analysis.

The first procedure is extremely important, because in a modern environment a director should constantly work on reducing costs and production time, while ensuring high production quality. According to scientists, in order to make the production process more efficient and balanced, it is necessary to divide the production into several stages. Researchers emphasise that the first stage of stabilising the production line is to analyse the current state of the production of goods, the second stage is to minimise and eliminate operations that do not add value, and the third stage is to stabilise the workflow. Implementation of the SS system includes several steps:

- sorting into needed and not needed, removing the non-needed;
- solution for a workspace, organization of required instrument storage, which would allow to easily and quickly use them;
- sanity;
- standardization by the creation of standards and rules;

– streamlining, through regular checks and support activities, cultivating the habit of accurately following the rules.

As far as the production analysis is concerned, this is what makes it possible to improve the planning system, from the information-preparation stage to the service control procedures. Thus, there is no single approach to optimising the company's activity during the overproduction crisis. Each company manager, having faced the problems of overproduction in his organisation, must pay special attention to the analysis of the works of modern researchers, especially those who have conducted their researches in the field of careful manufacture in a specific sphere. In this way he will succeed on the market or keep his present positions.

5. Conclusions

The analysis of the overproduction crisis in the manufacturing sector has not shown a clear result, as there is no correlation between financial indicators and the level of reserves in the car manufacturing companies. A comparison of unsold cars and an analysis of the largest companies in the car industry have shown that the market is saturated. Nevertheless, the organisations studied have shown effective management skills in crisis conditions. The impact of the crisis on commercial organisations is also unclear. Analysis has shown that some organisations are negatively affected, while others are not. This shows the importance of rational approaches in the management system. An overproduction crisis can have a negative impact on the functioning of an organisation. Therefore, a modern businessman or manager in such conditions must make appropriate decisions on the structural reorganisation of the company. These recommendations have been studied in the research as diversification of the strategy of reduction of the enterprise activity through the strategy of enterprise restructuring and portfolio shift.

Organisational restructuring can also be aimed at the implementation of digital technology, which can be categorised by the scenarios of forecasting, waste analysis and redistribution. Organisational restructuring in the modern environment has been studied through the use of careful management, careful problem solving, visual management, quick configuration tool, autonomy, process balancing, careful quality assurance, careful human resource use, careful supply chain management and production flexibility. In order to prevent the influence of the crisis occurrence on the changes of the organisational structure, the following procedures were proposed: stabilisation of the assembly line load, production analysis and SS system. Materials of the scientific work can be useful for lecturers of financial management, who

take over the new environment of educational sphere professional activity, for specialists in the sphere of management, who want to optimise activity of their enterprise according to the results of modern research authors. Further scientific researches can be devoted

to the investigation of effectiveness and practicability of careful production and implementation of closed cycle on the organisation, to an analysis of overproduction in the sphere of services, or the positive influences of the crisis events on the world economy.

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References:

- António, A., & Blanco-Arana, M.C. (2022). Financial and economic development in the context of the global 2008–09 financial crisis. *International Economics*, vol. 169, pp. 30–42. DOI: <https://doi.org/10.1016/j.inteco.2021.11.006>
- Berrill, J., Campa, D., & O'Hagan-Luff, M. (2021). Firm diversification and earnings management strategies: European evidence. *International Review of Financial Analysis*, vol. 78, article number: 101955. DOI: <https://doi.org/10.1016/j.irfa.2021.101955>
- Bimpizas-Pinis, M., Bozhinovska, E., Genovese, A., Lowe, B., Pansera, M., Alberich, J.P., & Ramezankhanif, M.J. (2021). Is efficiency enough for circular economy? *Resources, Conservation and Recycling*, vol. 167, article number: 105399. DOI: <https://doi.org/10.1016/j.resconrec.2021.105399>
- Cato, W.W., & Mobley, R.K. (2002). *Computer-Managed Maintenance Systems*. Oxford: Elsevier.
- Greer, R., Wirth, T., & Loorbach, D. (2021). The Waste-Resource Paradox: Practical dilemmas and societal implications in the transition to a circular economy. *Journal of Cleaner Production*, vol. 303, article number: 126831. DOI: <https://doi.org/10.1016/j.jclepro.2021.126831>
- Harris, P., & Mongiello, M. (2006). *Accounting and Financial Management*. Oxford: Butterworth-Heinemann. DOI: <https://doi.org/10.4324/9780080492483>
- Hogan, T.L., & White, L.H. (2021). Hayek, Cassel, and the origins of the great depression. *Journal of Economic Behavior & Organization*, vol. 181, pp. 241–251. DOI: <https://doi.org/10.1016/j.jebo.2020.12.005>
- Investing.com. Finance (2022). Available at: <https://investing.com/equities>
- Is Overproduction Driving Your Labor Costs Out of Control? (2016). Available at: <https://www.cmtc.com/blog/overproduction-effects-on-labor-cost>
- Jana, P., & Tiwari, M. (2021). *Lean Tools in Apparel Manufacturing*. Oxford: Elsevier.
- Kwon, T.H., Bae, S.C., & Park, S.H. (2021). The interactions of corporate sales growth and diversification strategy: Cross-country evidence. *Journal of International Financial Markets, Institutions and Money*, vol. 75, article number: 101422. DOI: <https://doi.org/10.1016/j.intfin.2021.101422>
- Lewis, C.D. (2000). *Demand Forecasting and Inventory Control*. Oxford: Butterworth-Heinemann. DOI: <https://doi.org/10.4324/9781856179898>
- Lhabitant, F.S. (2017). *Portfolio Diversification*. Oxford: Elsevier.
- Pasinetti, L.L. (2021). Economic theory and institutions. *Structural Change and Economic Dynamics*, vol. 56(2021), pp. 438–442. DOI: <https://doi.org/10.1016/j.strueco.2019.12.005>
- Scarano, P., Sciarrillo, R., Tartaglia, M., Zuzolo, D., & Guarino, C. (2022). Circular economy and secondary raw materials from fruits as sustainable source for recovery and reuse. A review. *Trends in Food Science & Technology*, vol. 122, pp. 157–170. DOI: <https://doi.org/10.3390/su13169294>
- Strotmann, C., Baur, V., Börnert, N., & Gerwin, P. (2022). Generation and prevention of food waste in the German food service sector in the COVID-19 pandemic – Digital approaches to encounter the pandemic related crisis. *Socio-Economic Planning Sciences*, vol. 82, article number: 101104. DOI: <https://doi.org/10.1016/j.seps.2021.101104>
- The Wall Street Journal. Browse Companies (2022). Available at: https://www.wsj.com/market-data/quotes/company-list/?mod=nav_top_subsection
- Wolf, M. (2015). *The Shifts and the Shocks: What We've Learned and Have Still to Learn from the Financial Crisis*. London: Penguin Books.
- Womack, P.J., & Jones, T.D. (2003). *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. Amsterdam: Free Press.

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