
The Financial Situation of Enterprises in the Clothing and Footwear Sector in the Face of the COVID-19 Pandemic

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Iwona Bąk¹, Beata Szczecińska²

Abstract:

Purpose: The purpose of this article is to try to assess the impact of COVID-19 on the financial situation of enterprises in the clothing and footwear sector. Companies listed on the Warsaw Stock Exchange were used as a case study.

Design/Methodology/Approach: The study used a synthetic measure based on the zero unitarization method, which allowed for the classification of the surveyed enterprises from the point of view of their financial condition.

Findings: The methods used in the paper turned out to be a helpful tool in determining the financial condition of companies. They showed significant changes resulting from the spread of COVID-19. As the pandemic situation is still not stabilized, such analyses as in this article should be continued in the coming years. That will enable the observation of regularities or their absence, especially after the pandemic has ended.

Practical Implications: The results of this kind of research can help managers, as well as current and potential shareholders, understand how the pandemic affects the company and its financial implications. Such information will help make decisions about future activities. Thus, the study fills the research gap in this area.

Originality/Value: The article contributes to the current scientific discussion on the impact of the COVID-19 pandemic on the financial situation of companies in the world.

Keywords: COVID-19, pandemic, financial situation, taxonomic analysis.

JEL classification: C38, G32, L67.

Paper Type: Research study.

¹West Pomeranian University of Technology, Szczecin, Poland, iwona.bak@zut.edu.pl

²West Pomeranian University of Technology, Szczecin, Poland,
beata.szczecinska@zut.edu.pl

1. Introduction

The COVID-19 pandemic, which has been spreading worldwide since fall 2019, has taken everyone by surprise. It took some time before we understood the power of this virus, during which more and more countries were exposed to its negative impact. Due to the closure of the borders, there has been a decline in international economic exchange and private consumption. It also has important implications for businesses and entire economies. The studies of Apedo-Amah *et al.* (2020) pointed to the consequences of the pandemic for enterprises. The results were based on a novel data set compiled by the World Bank Group and several partner institutions in 51 countries covering more than 100,000 enterprises. Firstly, it was noted that the COVID-19 shock had a significant impact on the decrease in sales volumes and thus on the companies' revenues. Secondly, to not dismiss them, companies reduced working hours or sent the employees on holidays. The result has been great uncertainty about the future, especially among those companies that experienced a more significant drop in sales and had to reduce the number of jobs.

Both small local workplaces and huge global companies have suffered losses in terms of jobs and financial results. Individual companies are now trying to rebuild their reputation, but losses within individual sectors are difficult to estimate. The more so as the pandemic affected all sectors of the world economy.

The purpose of this article is to try to assess the impact of COVID-19 on the financial situation of enterprises in the clothing and footwear sector. Companies listed on the Warsaw Stock Exchange were used as a case study. The research covered the years 2018-2020, which accounted for the situation of these enterprises before the pandemic (2018-2019) and during the pandemic (2020). The study used a synthetic measure based on the zero unitarization method, which enabled the classification of the surveyed enterprises from the point of view of their financial condition. The starting point for calculating the measure was the determination of financial indicators for companies in the analyzed sector. The results of this study will show whether the COVID-19 pandemic significantly changed the financial situation of the surveyed companies. That will make it easier for managers and investors to make decisions and plans for future operations, especially in a situation of uncertainty related to the impossibility of predicting the end of the pandemic.

2. The Situation of Economic Sectors in the Face of a Pandemic – Literature Review

Pandemics are among the greatest possibly negative global risks, especially in today's highly globalized world. They can cause not only high morbidity and mortality but also have negative socio-economic effects. The spread of COVID-19 has reduced economic activity worldwide and has led to new threats to financial stability (Boot *et al.*, 2020). Many governments have responded with restrictions on economic activity

from disrupting day-to-day activities to the complete shutdown of specific sectors (Koster and Igoe, 2020).

The outbreak of the COVID-19 pandemic first generated enormous stress resulting from the concern about the health of oneself and those of loved ones and then from the concern about material losses. This high degree of emotional tension has also contributed to increased risk aversion among investors and has led to sharp drops in prices on stock exchanges worldwide. The COVID-19 pandemic, referred to as the "black swan" phenomenon, is an example of an extreme threat that can lead to both an environmental, economic, and social crisis. Not only has it caused millions of infections and hundreds of thousands of deaths, but it has also wreaked havoc on the global economy (Czech *et al.*, 2020).

Contrary to the financial market crash of 2008, the corporate sector was severely hit in 2020, and the impact is growing day by day due to the high level of interconnection of production and distribution worldwide. While business disruptions initially caused liquidity problems for firms and their banks, their interconnectedness would most likely turn the liquidity problem, if there was no reaction, into the solvency problem of firms and banks at the same time (Boot *et al.*, 2020).

Nicola *et al.* (2020) made a preliminary assessment of the impact of the COVID-19 pandemic on different parts of the global economy, focusing both on raw material extraction sectors, industries involved in the production of finished products, and service sectors. They pointed to the significant negative consequences of the pandemic in all sectors of the economy. Similar research results were also obtained by Grima *et al.* (2020), Khan *et al.* (2020), Apedo-Amah *et al.* (2020), Koster and Igoe (2020), Qing, Junyi, Sizhu, and Jishuang (2020), Zou, Huo, and Li (2020), and Stang (2021). Social distancing, self-isolation, and travel restrictions have reduced the workforce in all sectors of the economy and resulted in the loss of many jobs. Schools were closed, and the demand for goods and manufactured products decreased (Hale *et al.*, 2020).

In a globalized world, the scale of epidemics and diseases is also global. These events have dramatically affected the economy, resulting in falling GDP, business closures, high unemployment, falling incomes, poverty, and high mortality (Kacperska and Kraciuk, 2021; Grima *et al.*, 2020). The finances of individual households have suffered to varying degrees over this period. Bourquin *et al.* (2020) have researched this problem. It found that some households coped with temporary financial problems, but others were not so lucky and found themselves in a difficult financial situation. That was especially true for households with low incomes before the crisis, and the loss of jobs or reduced earnings only exacerbated their problems.

According to Sumner, Hoy, and Ortiz-Juarez (2020), global poverty may rise for the first time since 1990 as a result of the spread of the new coronavirus. That means that the COVID-19 pandemic poses a real threat to the UN's sustainable development goal in the fight against poverty, to be achieved by 2030. In some regions, the negative

impact of the pandemic may result in poverty levels similar to those recorded 30 years ago. In the most extreme scenario (20% drop in income or consumption), the number of people living in poverty could increase by 420-580 million compared to the latest official data from 2018.

In addition, many researchers indicate that the pandemic may cause a severe and profound economic crisis worldwide. That is related, *inter alia*, to the presence of global supply chains, favoring the so-called contagion of crisis and exposing economies to risks beyond their territorial borders. According to Barro, Ursúa, and Weng (2020), the entire global economic impact of the coronavirus pandemic still cannot be assessed. The related anxiety of consumers and employees translates into individual consumption and thus into the income of companies.

In the circumstances caused by the COVID-19 epidemic, businesses of all kinds can face severe liquidity shortages. Small and medium-sized enterprises (SMEs) are particularly at risk. Therefore, one should consider severe consequences for the financial situation of many entrepreneurs and their employees in the short and medium-term, and long-term effects threatening the survival of their activities on the market (*Pandemic ...*, 2020).

Carlson and Wei (2020) indicate the following negative effects for enterprises of the pandemic:

- closure of the enterprise or its part,
- loss of customers,
- supply chain disruptions
- production delays,
- regulatory changes,
- changes in the workforce,
- risk of loss on significant contracts,
- potential future impairment of assets and/or decreases in market value.

It should be mentioned that governments worldwide offered entrepreneurs financial support in this challenging period (Belitski *et al.*, 2021). For example, in the United States, the most extensive program providing funds to small and medium-sized enterprises in the early stages of a pandemic was the \$ 650 billion Payoff Protection Program (PPP) (Bhutta *et al.*, 2020). In addition, a program administered by the Small Business Administration (SBA) provided loans to small businesses through banks, credit unions, and other financial institutions to retain employees and not go out of business (Fairlie and Fossen, 2021). In the UK, the government has implemented the Coronavirus Job Retention Scheme (CJRS) (popularly known as the "Furlough program") to pay wages to employees (Yue and Cowling, 2021). In Poland, on the other hand, the government program of supporting employees and entrepreneurs has been called the "anti-crisis shield". Its main goal was to save jobs and help companies maintain financial liquidity (Dębikowska *et al.*, 2021). Unfortunately, in many cases, these actions did not stop the layoffs of employees and the deterioration of the

economic and financial situation of enterprises. Cirera *et al.* (2020) show that access to support programs was very limited, especially in poorer countries and smaller enterprises.

While the pandemic is a global problem, the impact on different sectors of the economy varies. The European textile and apparel (T&A) sector consists of approximately 170,000 companies (90% of which are small), which together generate an annual turnover of almost EUR 180 billion and employ 1.7 million people (Euratex, 2020). In recent decades, the sector has undergone several radical transformations, including the introduction of technological changes, the evolution of production costs, and the emergence of important international competitors. Firms improved their competitiveness by reducing or ceasing mass production of simple products and focusing on a wider range of higher-value products.

According to the International Labor Organization (2020), the profitability of the textile, clothing, leather, and footwear industries is declining during the ongoing pandemic. Thousands of companies and millions of employees have been hit particularly hard by order cancellations.

Euratex's (2020) research performed between March 15 and April 15, 2020, shows that the coronavirus pandemic resulted in a production collapse and a decline in turnover in the entire sector of EUR 50 billion. It turned out that over 60% of companies expect a decrease in sales by more than half, and 3 out of 10 companies forecast a decrease in sales by as much as 80% or more. In turn, 7 out of 10 companies face serious financial difficulties, and 8 out of 10 companies reduce their workforce (at least temporarily).

The textile, apparel, leather, and footwear sector is characterized by geographically dispersed production and rapid market changes, providing employment opportunities for millions of workers worldwide, especially women. Due to the scale and profile of the employees employed, this sector offers enormous potential that can significantly contribute to economic and social development. The deterioration of the financial results of this sector may have far-reaching consequences for the economic and social situation in the world.

3. Materials and Methods

The research carried out in this study concerned fourteen companies in the clothing and footwear sector listed on the Warsaw Stock Exchange. The selection of companies was dictated by data availability for the adopted research period, i.e., 2018-2020. In order to establish the financial condition of the companies in the analysed sector, a taxonomic measure of development was constructed. 13 financial indicators from Table 1 were used as a set of diagnostic features, where their names and symbols were given along with their nature (stimulant - high values are favourable from the point of

view of the essence of the analysed phenomenon and the destimulant - low values are desirable).

Table 1. A set of diagnostic features

Symbol	Indicators	Properties
X_1	Return on equity (ROE)	stimulant
X_2	Return on assets (ROA)	stimulant
X_3	Return on sales (ROS)	stimulant
X_4	Profit margin from sales	stimulant
X_5	Debt ratio	destimulant
X_6	Debt to equity ratio	destimulant
X_7	Long-term debt	destimulant
X_8	Fixed assets to long-term debt ratio	stimulant
X_9	Cash ratio	stimulant
X_{10}	The time of settling receivables in days	destimulant
X_{11}	Inventory turnover in times	stimulant
X_{12}	Current asset turnover	stimulant
X_{13}	Fixed asset turnover	stimulant

Source: Own elaboration.

In taxonomic research, the question often arises which features should be adopted for analysis. Often very advanced procedures of selecting diagnostic features are used for this purpose. One of the stages of such selection is eliminating the so-called collinear features carrying the same information. However, there are studies in which formal and statistical selection is abandoned (Bał and Cheba, 2020). As the assessment of the financial situation of enterprises (companies) usually considers four groups of indicators: profitability, liquidity, turnover, and debt, it was decided to adopt all the indicators presented in Table 1. They reflect and enable a detailed assessment of the financial position of the companies under study. Moreover, it turned out that all the features adopted for the study are characterized by a very high differentiation (24% and more), which proves their good discriminatory properties.

A taxonomic measure of development was used to classify companies in the analysed years (z_i) based on the zero unitarization method (Kukuła, 2000). This method uses the following transformations:

$$\text{for the stimulant } z_{ij} = \frac{x_{ij} - \min_i x_{ij}}{\max_i x_{ij} - \min_i x_{ij}}, \quad \max_i x_{ij} \neq \min_i x_{ij}; \quad (1)$$

$$\text{for the destimulant } z_{ij} = \frac{\max_i x_{ij} - x_{ij}}{\max_i x_{ij} - \min_i x_{ij}} \quad \max_i x_{ij} \neq \min_i x_{ij}. \quad (2)$$

The synthetic measure of development (z_i) is built as the arithmetic mean of the standardized values of diagnostic features:

$$z_i = \frac{1}{k} \sum_{j=1}^k z_{ij}, \quad (3)$$

where: k - the number of diagnostic features.

4. Study Results

Making the right decisions by managers about the present and future activity of the enterprise is determined by the high variability of external factors. Recently, an important determinant was the emergence of the COVID-19 virus, which influenced political and economic decisions worldwide. To a greater or lesser extent, the effects of lockdowns introduced in individual countries affected the financial results of enterprises, and in some sectors of the economy, they were particularly severe.

Table 2 presents the selected financial ratios of all entities included in the analysis. The companies differed significantly in terms of the values of the ratios, as evidenced by high (approx. 30%) and very high (approx. 200%) coefficients of variation.

As can be seen, most companies recorded a deterioration in profitability in 2020 compared to 2018 and 2019. In nine out of fourteen companies, in 2020, the costs of their operations exceeded the revenues earned, so these enterprises generated a negative net financial result. This situation mainly concerned those entities that made decisions on large-scale investments and conducted small-scale online sales in the previous years. As many as twelve companies recorded an increase in the share of foreign capital in financing the company's assets in 2020 compared to the previous years. High dependence on external financing sources is obvious in the case of CCC and INTERSPPL, for which the debt to equity ratio increased almost six times at the turn of 2019-2020. The efficiency analysis of enterprises was assessed, among others, using indicators: inventory turnover in times and the time of settling receivables in days. The best situation is when receivables are collected quickly, and inventories are replenished frequently. Most of the analysed enterprises grant their contractors a trade credit for 3-4 weeks. Two companies (SOLAR, LUBAWA) have to wait for payment for their products for a very long time, i.e., almost half a year. Unfortunately, this has a negative impact on the rational conduct of operating activities.

Table 2. Selected financial indicators of the surveyed companies in 2018-2020

Company	Year	Indicators						
		ROE	ROS	Profit margin from sales	Debt ratio	Debt to equity ratio	The time of settling receivables in days	Inventory turnover in times
ANSWEAR	2018	-0.24	-0.04	-0.03	0.68	2.17	36	3.29
	2019	0.20	0.03	0.02	0.74	2.82	28	3.43
	2020	0.13	0.02	0.06	0.73	2.75	21	3.85
CCC	2018	0.06	0.01	0.05	0.83	5.47	31	1.29
	2019	-0.03	0.00	0.02	0.85	6.28	28	1.44

	2020	-7.04	-0.23	-0.07	0.95	34.88	26	1.46
CDRL	2018	0.25	0.09	0.12	0.49	0.98	29	2.97
	2019	0.12	0.02	0.05	0.70	2.43	22	3.23
	2020	-0.60	-0.09	0.05	0.77	3.28	17	3.07
ESOTIQ	2018	0.15	0.05	0.05	0.56	1.21	28	1.38
	2019	0.11	0.03	0.04	0.64	1.79	29	1.38
	2020	0.10	0.03	0.05	0.62	1.58	30	1.58
INTERSPPL	2018	-0.18	-0.02	-0.02	0.72	3.11	8	3.23
	2019	-0.26	-0.03	-0.04	0.78	4.52	10	2.36
	2020	-5.81	-0.17	-0.15	0.91	26.27	10	2.14
LUBAWA	2018	0.03	0.03	0.04	0.45	0.83	132	2.83
	2019	0.09	0.08	0.09	0.43	0.77	135	3.10
	2020	0.12	0.13	0.16	0.35	0.55	153	2.35
LPP	2018	0.18	0.06	0.11	0.47	0.88	8	2.40
	2019	0.13	0.04	0.09	0.66	1.96	6	2.61
	2020	-0.06	-0.02	0.03	0.70	2.37	11	2.05
MONNARI	2018	0.08	0.07	0.09	0.18	0.21	38	1.66
	2019	0.05	0.04	0.05	0.28	0.38	37	1.57
	2020	-0.16	-0.15	-0.03	0.39	0.63	55	1.46
PRIMAMODA	2018	0.08	0.03	0.03	0.62	1.61	23	1.04
	2019	0.01	0.01	-0.01	0.63	1.67	27	1.11
	2020	-0.12	-0.07	-0.06	0.64	1.74	56	0.89
PROTEKTOR	2018	-0.01	-0.01	0.03	0.38	0.64	46	1.58
	2019	-0.01	0.00	0.03	0.48	0.95	40	1.49
	2020	0.02	0.01	0.01	0.48	0.95	50	1.43
SOLAR	2018	0.00	0.00	0.00	0.12	0.14	170	6.37
	2019	0.01	0.00	0.02	0.42	0.74	162	6.13
	2020	-0.13	-0.10	-0.05	0.53	1.13	215	4.88
VRG	2018	0.07	0.07	0.09	0.28	0.38	13	1.09
	2019	0.07	0.06	0.08	0.40	0.66	10	0.98
	2020	-0.06	-0.06	0.00	0.44	0.79	8	0.86
WOJAS	2018	0.03	0.01	0.02	0.49	0.95	21	1.39
	2019	0.06	0.01	0.01	0.68	2.31	28	1.59
	2020	-0.29	-0.06	-0.06	0.77	3.66	39	1.40
WITTCHEN	2018	0.23	0.13	0.17	0.31	0.45	45	1.68
	2019	0.21	0.11	0.13	0.42	0.73	30	1.50
	2020	0.08	0.06	0.08	0.41	0.69	44	1.05

Source: Own elaboration.

The value of the synthetic variable for companies in the clothing and footwear sector listed on the Warsaw Stock Exchange, taking into account the adopted diagnostic features in 2018-2020 (Table 1), is listed in Table 3. Table 3 and Figure 1 show that the positions taken by individual companies in the constructed rankings were, in most cases, different. Only one company (CCC) did not change its last position in the analysed years. For two companies (LPP, WOJAS), in 2020 (during the pandemic) compared to 2018 (before the pandemic), the differences in the rankings did not exceed two positions. The most significant improvement was noticed for ANSWEAR,

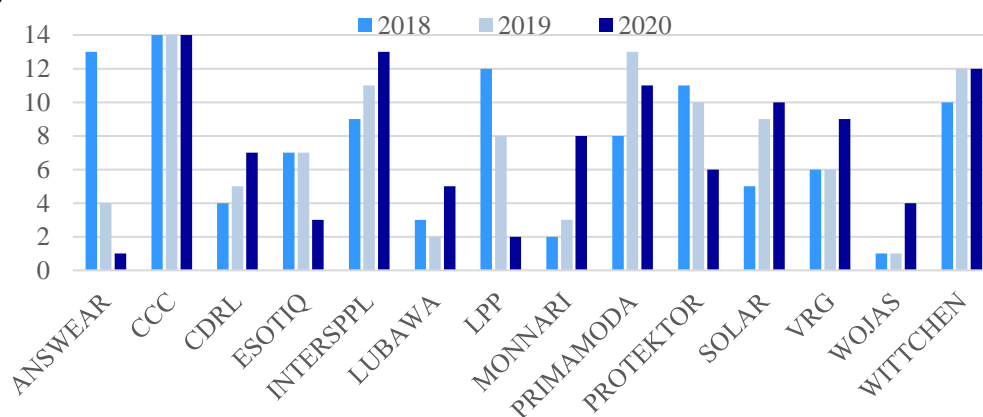
which in 2018 was in 13th place, and two years later it reached the 1st position, and for LUBAWA (an improvement from 12th to 2nd). For six companies, the financial condition deteriorated, with MONNARI which fell from 2nd to 8th position the most.

Table 3. Linear ordering of companies from the analysed sector listed on the Warsaw Stock Exchange in 2018-2020

Company	2018		2019		2020	
	z_i	Rank	z_i	Rank	z_i	Rank
ANSWEAR	0.352	13	0.542	4	0.730	1
CCC	0.217	14	0.230	14	0.163	14
CDRL	0.581	4	0.520	5	0.581	7
ESOTIQ	0.477	7	0.501	7	0.658	3
INTERSPPL	0.428	9	0.424	11	0.313	13
LUBAWA	0.600	3	0.615	2	0.628	5
LPP	0.366	12	0.493	8	0.691	2
MONNARI	0.606	2	0.583	3	0.542	8
PRIMAMODA	0.433	8	0.396	13	0.477	11
PROTEKTOR	0.383	11	0.433	10	0.611	6
SOLAR	0.522	5	0.482	9	0.531	10
VRG	0.494	6	0.513	6	0.535	9
WOJAS	0.628	1	0.670	1	0.653	4
WITTCHEN	0.408	10	0.409	12	0.466	12

Source: Own elaboration.

Figure 1. The positions of companies in the clothing and footwear sector due to the financial situation in 2018-2020



Source: Own elaboration pursuant Table 3.

The differentiation of companies is also visible during the analysis of the more important descriptive characteristics determined for the taxonomic measures estimated for individual years (Table 4). The coefficient of variation in each case exceeds 20%, with the highest being in 2020. It is also worth noting that in the year

of the pandemic, the strength of the asymmetry of the measure increased significantly. That means that more companies achieved above-average taxonomic values.

Table 4. Descriptive characteristics of taxonomic measures in 2018-2020

Descriptive characteristics	2018	2019	2020
Mean	0.464	0.487	0.541
Coefficient of variation (%)	24.359	21.378	27.186
Maximum	0.217	0.230	0.163
Minimum	0.628	0.670	0.730
Asymmetry	-0.364	-0.646	-1.327

Source: Own elaboration.

Since the obtained values of taxonomic measures and the ordering of the surveyed companies differ, in some cases even significantly, in order to determine to what extent there is compliance in the ordering of the studied objects in 2018-2020, the correlation coefficients were determined τ Kendall (Table 5). Their analysis shows a moderate correlation between the rankings of companies in the years before the pandemic (2018 and 2019) and no correlation between the results in 2020 and 2018, as evidenced by the low value of the correlation coefficient at the level of 0.1209.

Table 5. The matrix of Kendall τ correlation coefficients for the positions of companies in the rankings built-in 2018-2020

Year	2018	2019	2020
2018	1.0000	0.5165	0.1209
2019	0.5165	1.0000	0.5165
2020	0.1209	0.5165	1.0000

Source: Own elaboration.

5. Discussion and Conclusions

The coronavirus pandemic has hit all sectors of the economy, from small service establishments to large corporations. There are many discussions around the world indicating that nothing in business will remain the same after COVID. These considerations are intended to understand better and explain the economic effects of a pandemic on economies of entire countries and companies of all sizes (Janssen *et al.*, 2021). The COVID-19 pandemic severely hit firms, as not only they saw sales drop significantly, but their financial situation has worsened due to limited access to finance, and they now face significant uncertainty about the future.

The negative effects of the pandemic, in the form of reduced sales, profitability, and increased debt, also were experienced by most of the companies surveyed in this study. They were particularly severe for companies that decided to make expensive investments in the previous years. On the other hand, those that focused on online sales did quite well. The results of this kind of research can help managers and current, and potential shareholders understand how the pandemic affects the company and its

financial implications. Such information will help make decisions about future activities. Investment decisions are based on estimated future cash flows, which means that the information provided should enable the recipients of financial statements to understand past performance and form an opinion on future performance.

For many years, the authors have been researching the financial condition of companies listed on the Warsaw Stock Exchange, including companies in the clothing and footwear sector (Bąk and Szczecińska, 2013; Szczecińska, 2018). However, research of this kind has never been conducted in the face of the outbreak of the COVID-19 pandemic, which has a significant impact on the economic activity of companies around the world.

The methods used in the paper turned out to be a helpful tool in determining the financial condition of companies. They showed significant changes resulting from the spread of COVID-19. As the pandemic situation is still not stabilized, such analyses as in this article should be continued in the coming years. That will enable the observation of regularities or their absence, especially after the pandemic has ended.

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