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FINANCE MANAGEMENT IN A TURBULENT ENVIRONMENT ON THE EXAMPLE OF A COMPANY OPERATING IN THE VIDEO GAMES INDUSTRY

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Purpose: The changing market conditions in which an economic entity operates requires its executives to choose management support tools, in particular in the area of locating the company's "bottlenecks". The knowledge of the financial situation of an economic entity becomes indispensable in making decisions at both operational and strategic levels. The aim of the article was to indicate that finance management is one of the most important areas in both current and long-term management of the company's operations in a turbulent environment.
Design/methodology/approach: CD PROJEKT Group operating on the global video game market, which is one of the most dynamic sectors of the world economy, was selected for research through purposive sampling. The solutions were developed on the basis of the following research methods: analysis of the literature on the subject, case study, analysis of documents. The financial analysis was conducted on the basis of the inductive inference method, consisting in the examination of the details in the first order, followed by generalizing them in the form of conclusions, synthetic assessment and diagnosis. Trend analysis was used to estimate the likelihood of improvement or deterioration of the financial situation. The temporal scope of the research covered in the period of 2017-2021. During the analytical procedure, selected detailed methods were used, which depended on the issues under consideration as well as problems: balance sheet method, comparative method, indicator method, descriptive methods supported by tables and graphs.
Findings: The study confirmed that a turbulent environment has a direct impact on the management, functioning and financial performance of the company.
Originality/value: The value of the article is in the analysis of the financial situation of CD PROJEKT Group over the five years and indication of the impact of the turbulent environment on the company's operations. The article is addressed to executive staff in order to make them realize the necessity of conducting ongoing financial analysis in order to locate weak areas of activity and properly adjust the strategy to the capabilities and objectives of the company.

Keywords: finance management, cyber-attack, financial analysis.

Category of the paper: case studies.

1. Introduction

Aggressive competition, expansion of new technologies, the precarious situation on global markets, unstable fiscal and economic policies of governments, a tendency to complicate the processes taking place within a company itself and their excessive growth are only some of the issues with which the management of an average company copes. Efficient corporate management increasingly becomes a "tough trade" rather than an intuitive "art" (Skowronek-Mielczarek, Leszczyński, 2007).

The economic crisis is merciless for most companies, but there are industries that are treated by the crisis extremely gently. In case of some companies, the pandemic or war in Ukraine is accelerating the introduction of new, innovative solutions. By analysing sales profits, one can tell which companies are making money during the crisis. The following years will show in the case of which companies these are only periodic fluctuations in demand, and not permanent changes.

According to the KPMG report, the outbreak of the COVID-19 pandemic, in the opinion of 55% of the surveyed companies in Poland, contributed to an increase in the risk of cyberattacks. 64% of organizations recorded at least one cyber incident in 2020. At the same time, 51% of companies admitted that the need to organize remote work was a challenge in terms of ensuring security, as it increased the vulnerability of cyberattacks. In 1/4 of companies, spending on ensuring security was increased. The year 2020 turned out to be more dangerous in terms of attempted cyberattacks compared to 2019. In 2020, at least one cyber incident was recorded by the majority of the surveyed organizations (64% of indications). This means an increase of 10 p.p. compared to 2019. In 2020, an increase in the number of cyberattack attempts was observed by 19% of entrepreneurs, while the decrease was recorded by 4% of survey respondents. It is worth noting that medium-sized companies more frequently were observing cyberattack attempts in 2020 than large enterprises employing more than 250 employees.

Entrepreneurs are most afraid of malware and social engineering attacks (phishing). Such cyberattacks may result in the leakage of sensitive data or blocking access to it by encrypting it and then demanding a ransom.

According to a study prepared by the Polish Economic Institute in cooperation with Bank Gospodarstwa Krajowego, the vast majority of companies (94%) felt the negative, weaker or stronger impact of the war in Ukraine on at least one area of their activity. The effects of the war affect Polish enterprises regardless of the size of the company or the type of business activity. The ongoing war translates into high uncertainty of the economic situation. Since the outbreak of the war, 75% of surveyed companies indicate it as a barrier strongly hindering business.

The changing business environment and the accompanying risks force company managers to modify their strategies, in particular in the area of financial management. A good business unit manager is more valuable in difficult times than in times of prosperity, because such person confidently holds the reins of the organization and is able to take advantage of opportunities to ensure further development of the company.

2. Financial analysis as a tool for managing the finances of the enterprise

Corporate finance management focuses on decisions regarding the value and type of assets acquired and at the same time conducting business so as to maximize the value of assets.

The primary objective of finance management is not to maximize the value of accounting indicators, such as net profit or earnings per share, but to maximize the value for shareholders. (...) accounting data has an impact on share prices and, on the basis thereof, it can be determined where such and not other results of the company came from and in what direction it is heading (Brigham, Houston, 2012). Corporate finance deals with the financing and investment decisions set by the corporations' management in order to maximize the value of the shareholders' wealth. However, due to the separation of ownership and control, managerial goals are pursued at the expense of the shareholders. Stockholder prosperity is enlarged through financial managers making rational investments, financing, and dividend resolutions. Moreover, for the longstanding success of the corporation, the board should be operative and be jointly accountable (Gherghina, 2021). In order to maximize the value of the company, the company's management must utilise its strengths and work to eliminate its weaknesses. One of the tools used to identify bottlenecks in individual areas of the company's operations is the analysis of financial statements.

A comprehensive and rigorous analysis of company's economic and financial situation always involves significant amount of information (of both financial and non-financial nature). However, the financial statements of an investigated company constitute by far the most important information source. The purpose of the full set of financial statements is to present the comprehensive picture of the company's historical performance (Welc, 2022).

Financial statements are the basis for a wide range of business analysis. Managers use them to monitor and assess their firms' performance relative to competitors, to communicate with external investors, to help to determine what financial policies they should pursue, and to evaluate potential new businesses to acquire as part of their investment policy (Welc, 2022; Fossung et al., 2020; Palepu, Healy, 2021).

A primary approach to evaluating and comparing financial performance of enterprises is a ratio analysis, which deals with a set of values that are typically computed on the basis of inputs extracted from primary financial statements and notes to them (Welc, 2022).

The goal of financial analysis is to use financial data to evaluate the current and past performance of a firm and to assess its sustainability. There are two important skills related to financial analysis. First, the analysis should be systematic and efficient. Second, it should allow the analyst to use financial data to explore business issues. Ratio analysis and cash flow analysis are the two most commonly used financial tools. Ratio analysis focuses on evaluating a firm's product market performance and financial policies, while cash flow analysis focuses on a firm's liquidity and financial flexibility (Palepu, Healy, 2021). Modern financial analysis should be useful to the company not only for interpreting the figures contained in the financial statements, but above all for better use of resources and external conditions, improvement of financial results, meeting market needs and expectations of the owners. It should facilitate it for a company to make decisions which would enable its effective development in the future (Gabrusewicz, 2014).

Establishing the analysis of an appropriate cause and effect chain on the basis of indicators may identify areas which have not been previously an object of interest for the executive staff. The pyramid of conclusions obtained in this way often allows for taking actions which radically change the pattern of procedure implemented before (Nowak, Nieplewicz, 2011, p. 15).

3. Methodology

For the purposes of this article, a research scheme was prepared (Figure 1).

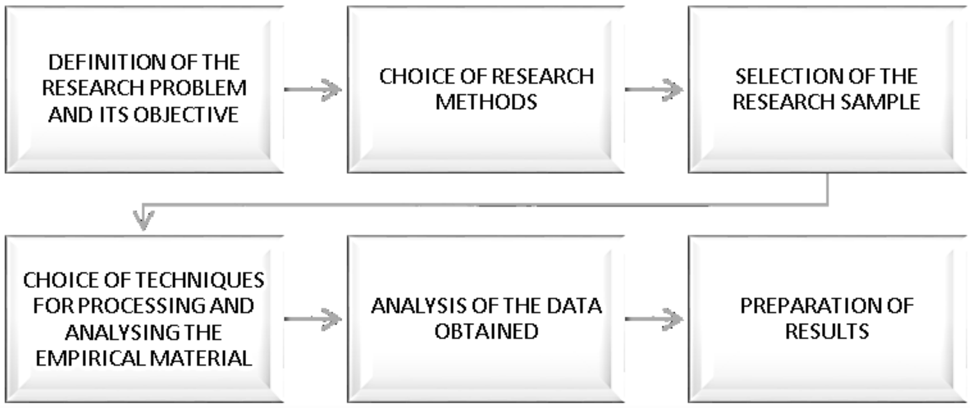


Figure 1. Research scheme.

Source: own elaboration.

The research problem formulated in this way implies the main goal of the research, which is to indicate that financial management is one of the most important aspects both in the current and long-term management of the company's activities in a turbulent environment.

CD PROJEKT Capital Group operating on the global video game market, which is one of the most dynamic sectors of the world economy, was selected for research through purposive sampling.

The solutions were developed on the basis of the following research methods: analysis of the literature on the subject, case study, analysis of documents. As part of the case analysis, diagnostic and prognostic sheets were employed, as well as the analysis of source documents.

The financial analysis was conducted on the basis of the inductive inference method, consisting in the examination of the details in the first order, followed by generalizing them in the form of conclusions, synthetic assessment and diagnosis. Trend analysis was used to estimate the likelihood of improvement or deterioration of the financial situation.

The temporal scope of the research covered the period of 2017-2021, in which the following events took place, which the analyzed Company had to face:

1. In March 2020, in connection with the growing threat caused by the coronavirus (COVID-19) pandemic, the Company took a range of preventive measures aimed

at precluding the occurrence and possible spread of infection within the structures of the Capital Group. Among other things, the so-called Home Office has been introduced allowing employees to continue working remotely. The pandemic may have had a negative impact on the sales of physical products offered by the Company. The sale was made by mail order or was moved to a digital channel.

2. On February 2021, CD PROJEKT fell victim to a hacker's attack. The hacker group gained access to CD Projekt RED's servers, stole contained there and encrypted some of them. The hacker's attack caused the Company's stock market shares to decline.
3. In March 2022, in response to the invasion of the Russian armed forces in Ukraine, the Management Board of CD PROJEKT decided to suspend the sale of CD PROJEKT Group's products and the sale of games available on the GOG.COM platform in Russia and Belarus.

During the analytical procedure, selected detailed methods were used, which depended on the issues under consideration as well as problems: balance sheet method, comparative method, indicator method, descriptive methods supported by tables and graphs. The indicator analysis presents indicators such as: liquidity, operational efficiency, profitability, debt, efficiency and sufficiency of cash, net working capital (Table 1). Activity and operational efficiency indicators were calculated as cycle indicators, i.e., they were calculated over the cycle duration of 365 days (year). The average state of receivables, liabilities and inventories was calculated as the arithmetic mean of the item value from the opening and closing balance sheet. Discriminatory models (Table 2), refer to one of the most important financial issues of an enterprise which is the assessment of its solvency. They allow early recognition of the symptoms of insolvency risk leading to bankruptcy.

Table 1.
Selected indicators (description and method of calculation)

Indicators	Method of calculation
Liquidity ratios – these allow for determining the company's ability to repay debts with a maturity date of up to twelve months	
Current liquidity ratio (safe index value: 1.2 - 2.0)	$\frac{\text{current assets}}{\text{short} - \text{term liabilities}}$
Increased liquidity ratio (safe index value: 0.8 – 1.5)	$\frac{\text{current assets} - \text{inventories}}{\text{short} - \text{term liabilitie}}$
Cash ratio (safe index value: 0.1 – 0.2)	$\frac{\text{cash}}{\text{short} - \text{term liabilitie}}$
Net working capital – the negative value of net working capital indicates an unstable financial situation, the solvency of which is at risk, which in consequence means that the liquidity of such a company should be assessed negatively; – the net working capital being higher than zero means that the company does not bear a high risk of liquidity loss and its ability to settle its current liabilities is unaffected; – a positive value of net working capital ensures smooth operation of the company;	
– in financial (capital) terms	(equity + long-term external capital) – fixed assets
– in terms of balance sheet (accounting)	current assets - short-term liabilities

Cont. table 1.

Activity ratios – these inform about the extent to which the company uses its assets efficiently	
Days sales outstanding	$\frac{\text{average amount of receivables x 365}}{\text{sales revenues}}$
Average period of cover	$\frac{\text{average amount of inventories x 365}}{\text{sales revenues}}$
Days payable outstanding	$\frac{\text{average amount of liabilities x 365}}{\text{sales revenues}}$
Operating cycle	inventory turnover + days of sales outstanding
Cash conversion cycle	operating cycle – days of payables outstanding
Debt ratios – these inform about how the company finances its assets and about the capabilities of the company in the area of long-term debt repayment	
Total debt ratio (safe index value: 0.57 – 0.67)	$\frac{\text{total liabilities}}{\text{total assets}}$
Debt-to-equity ratio (safe index value: 1.0 – 3.0)	$\frac{\text{total liabilities}}{\text{equity}}$
Long-term debt ratio (safe index value: 0.5 – 1.0)	$\frac{\text{long} - \text{term liabilities}}{\text{equity}}$
Profitability ratios – these inform about the profitability of the company's operating cash flow The following relationship should be maintained in a well-functioning company: the return on equity ratio should be higher than the return on assets ratio, which should be higher than the return on sales ratio, i.e.: ROE > ROA > ROS.	
Return on equity (ROE)	$\frac{\text{net profit}}{\text{equity}}$
Return on assets (ROA)	$\frac{\text{net profit o}}{\text{total assets}}$
Return On Sales (ROS)	$\frac{\text{net profit}}{\text{sales revenues}}$
Return on investment (ROI)	$\frac{\text{operating profit}}{\text{total assets}}$

Source: own elaboration based on: Skowronek-Mielczarek, Leszczyński, 2007; Sierpińska, Wędzki, 1997; Antczak, 2014.

Table 2.
Selected Polish discriminatory models (description and calculation method)

Model	Calculation formula
A. Hołda's model	$Z = 0.605 + 0.681X_1 - 0.0196X_2 + 0.00969X_3 + 0.000672X_4 + 0.157X_5$ where: X_1 - current assets / short-term liabilities; X_2 - total liabilities / total assets; X_3 - net profit / total assets; X_4 - short-term liabilities / cost of products, goods and materials sold; X_5 - total revenue / total assets. The limit value was set at 0,0 (the author defined a "grey zone" within the <-0.3 - 0.1> area).
E. Mączyńska and M. Zawadzki's model	$Z = 9.498X_1 + 3.556X_2 + 2.903X_3 + 0.452X_4 - 1.498$ where: X_1 - operating profit/assets; X_2 - equity/assets; X_3 - (net profit + depreciation)/total liabilities; X_4 - current assets/short-term liabilities The critical value of the indicator is 0.
E. Mączyńska's model (adaptation of O. Jacobs' model to Polish conditions)	$Z = 1.5X_1 + 0.08X_2 + 10.0X_3 + 5.0X_4 + 0.30X_5 + 0.10X_6$ where: X_1 - gross profit + depreciation / total liabilities; X_2 - assets/total liabilities; X_3 - operating profit/assets; X_4 - operating profit/sales revenues; X_5 - inventory/sales revenues; X_6 - assets/sales revenues The value of the Z-meter is interpreted as follows: $Z < 0$ – a company at risk of bankruptcy; $Z = 0$ – limit value; $0 < Z < 1$ – a weak company but not at risk of bankruptcy; $1 < Z < 2$ – a fairly good company; $Z > 2$ - a very good company
J. Gajdka and D. Stos's model	$Z = 0.7732059 - 0.0856425X_1 + 0.0007747X_2 + 0.9220985X_3 + 0.6535995X_4 - 0.594687X_5$ where: X_1 - sales revenues/balance sheet total; X_2 - liabilities x 365/manufacturing costs of products sold; X_3 - net profit/balance sheet total; X_4 - gross profit/sales revenues; X_5 - total liabilities/assets. The critical value of the model is 0.45.

Cont. table 2.

The Poznań model (developed by a team led by M. Hamrol, B. Czajka, and M. Piechocki)	$Z = -2.368 + 3.562X_1 + 1.5887X_2 + 4.288X_3 + 6.719X_4$ where: X_1 - net profit /assets; X_2 - current assets - inventories/short-term liabilities; X_3 - constant capital/assets; X_4 - profit on sales/sales revenues The limit value was set at 0.0.

Source: own elaboration based on: Antczak, Maśloch, 2017.

4. Case study

4.1. Description of CD PROJEKT Group

CD PROJEKT S.A. (the Company, the Group), with its registered office in Warsaw, is active in the global, dynamically developing video game industry. The Company was founded in 1994 by Marcin Iwiński and Michał Kiciński. Initially, the Company was involved in delivering computer software on CDs from the United States to Poland. The breakthroughs in the history of the Group were: the establishment of the CD PROJEKT RED development studio in 2002 and the commencement of work on developing their first RPG2 game – The Witcher, and the launch of the GOG.COM website in 2008.

CD PROJEKT S.A. acts as the holding company of the CD PROJEKT Group, and coordinates the operations conducted through subsidiaries within the Capital Group.

At the end of 2021, the CD PROJEKT Group consisted of the parent company CD PROJEKT S.A. and 7 subsidiaries: GOG sp. z o.o., CD PROJEKT Inc., CD PROJEKT Co. Ltd. (in liquidation), Spokko sp. z o.o., CD PROJEKT RED Store sp. z o.o., CD PROJEKT RED Vancouver Studio Ltd., and The Molasses Flood LLC (a subsidiary of CD PROJEKT Inc.) (Figure 2).

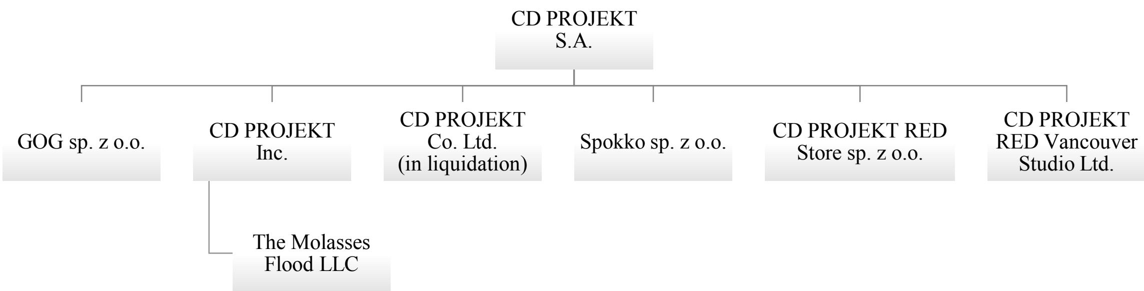


Figure 2. Structure of the CD PROJEKT Group.

Source: own elaboration based on: Sprawozdanie Zarządu z Działalności Grupy Kapitałowej CD PROJEKT za 2021 rok.

The CD PROJEKT Group operates in two key business segments: CD PROJEKT RED and GOG.COM (Figure 3).

CD PROJEKT RED	GOG.COM
• production and release of video games and related products using the brands owned by the Company	• digital distribution of computer games using a proprietary GOG.COM platform and GOG GALA application

Figure 3. Business segments of CD PROJEKT Group.

Source: own elaboration based on: Sprawozdanie Zarządu z Działalności Grupy Kapitałowej CD PROJEKT za 2021 rok.

Since March 2018, CD PROJEKT has been listed in the WIG20 index, which consists of the 20 largest and having highest liquidity companies on the Warsaw Stock Exchange. As of 5 April 2022, the Company's share in the index was 5.3%. CD PROJEKT is also included in the WIG.GAMES5 index, which brings together the five largest games producers listed on the Warsaw Stock Exchange. Due to the significantly higher market capitalization than other index companies, the share of CD PROJEKT in WIG.GAMES5 was limited — as of 5 April 2022, it amounted to 41.7%. Since 21 March 2022, a new WIG-Gry index, which represents the gaming industry companies listed on the WSE Main Market, has been published. As of 5 April 2022, the Company's share in this index was 73.3%. CD PROJEKT is also a part of WIG-ESG, the portfolio of which includes shares of companies considered to be socially responsible, i.e., those that comply with the principles of socially responsible business, particularly, in the fields of environmental, social, economic, and corporate governance issues. The CD PROJEKT's share in the index portfolio as of 5 April 2022 was 4.9% (Skonsolidowane Sprawozdanie 2021).

4.2. Micro and macro environment of the CD PROJEKT Group

The Group's development prospects are influenced not only by the systematic popularization of video games as entertainment available and attractive to the mass user, but also by the constant development of technology enabling the creation of better and even more realistic products, increasing availability and affordability of gaming devices, and further development in the field of digital methods for reaching potential gamers and games distribution (Skonsolidowane Sprawozdanie, 2021).

According to Newzoo, one of the leading research companies involved in the analysis of the gaming and e-sport market, the global video games market will have reached USD 218.8 billion by 2024, which implies a cumulative annual growth rate (CAGR) of this market over at the level of 5.0% the years 2021–2025. On the other hand, the report by PwC "Global Entertainment & Media Outlook 2021–2025" indicates that the video games and e-sport market will grow by 5.1% annually on average over the same period.

For the further development of the Group, the ability to maintain and develop a team of the best creators and specialists, as well as attract new experts both domestic and foreign ones to work on the projects implemented in the Group, is critical (Skonsolidowane Sprawozdanie, 2021).

The Group is exposed to a number of risks, both financial and non-financial ones, related to its current operations. The Company has implemented a Risk Management Procedure, which is a set of clearly defined rules of conduct enabling identification, assessment, analysis and further handling of the risk. For the purposes of this article, two types of risks are presented in Table 3: cybersecurity risk as well as the risk of liquidity and creditworthiness loss.

Table 3.
Selected types of risks (description and measures undertaken)

Description of the risk:	**Measures undertaken:**
BUSINESS RISK: Cybersecurity risk related to the danger of leakage, loss or unauthorized modification of data	
– storing and processing data in IT or communication systems is exposed to the risk of leakage, loss or unauthorized modification; – cybersecurity risks extend beyond data damage and destruction or financial loss, and may also include intellectual property theft, loss of productivity or reputation; – cybersecurity risk factors may be internal or external factors of a deliberate or unintentional nature, e.g., resulting from cyber-attacks, malware installation or other security breaches.	– an action plan was developed based on the "Defence in depth" principle, which envisages employment of overlapping defence mechanisms; – the technical functionality increasing the cyber resilience of the IT infrastructure is systematically introduced and improved; – security requirements are normalized and improved so that the processing and access to information is under constant control; – monitoring the data-processing system to ensure adequate technical safeguards preventing circumvention of security mechanisms.
FINANCIAL RISK: Liquidity reduction and credit risk	
– improper management of current assets, dependence on one or a narrow group of recipients and excessive concentration of funds in one financial institution may generate liquidity risk; – as part of sales with deferred payment dates or revenues from license fees usually reported and settled post factum after the end of the period for which royalties are due, the Group is exposed to the risk of insolvency on the part of the contractors with whom it cooperates.	– monitoring the level of financial resources, financial debt in relation to equity, current and planned financial results, as well as future investment plans; – cooperation with several banks by diversifying the allocation of cash and bank deposits held; – investing share of the reserves in treasury bonds and bonds secured with a guarantee of the State Treasury; – ongoing monitoring of the inflow of receivables is conducted; – collection of difficult receivables is outsourced to external, specialized entities.

Source: own elaboration based on: Sprawozdanie Zarządu z Działalności Grupy Kapitałowej CD PROJEKT za 2021 rok.

4.3. Impact of the COVID-19 pandemic on the operations of the CD PROJEKT Group

In March 2020, in connection with the growing threat caused by the coronavirus (COVID-19) pandemic, the Company took a range of preventive measures aimed at precluding the occurrence and possible spread of infection within the structures of the Capital Group. The technical infrastructure and software supporting it were expanded in order to increase network capacity, equipment efficiency and security standards, making it possible to transfer all the persons working in the office so far into remote work mode. From 16 March 2020, there was a transition to the so-called Home Office, enabling all the personnel employed by the CD PROJEKT Group to continue work remotely (with the exception of necessary individual persons being on duty on the premises of the office). In the following months, in order to increase safety and enable some of the employees to do office work in a hybrid mode, the Group's subsidiaries introduced additional initiatives in the field of caring for the mental and physical health of their team members (Skonsolidowane Sprawozdanie, 2020).

The vast majority of sales are made by the Group through digital distribution, which kept gaining popularity during the pandemic and periods of the so-called lockdown. The pandemic could have had a negative impact on the sales of physical products offered by the Company, however it should be assumed that some of these sales were naturally made by mail order or were transferred to the digital channel (Skonsolidowane Sprawozdanie, 2020).

The Company has identified the risks associated with the COVID-19 pandemic, both in the short and long term, as illustrated in Figure 4.

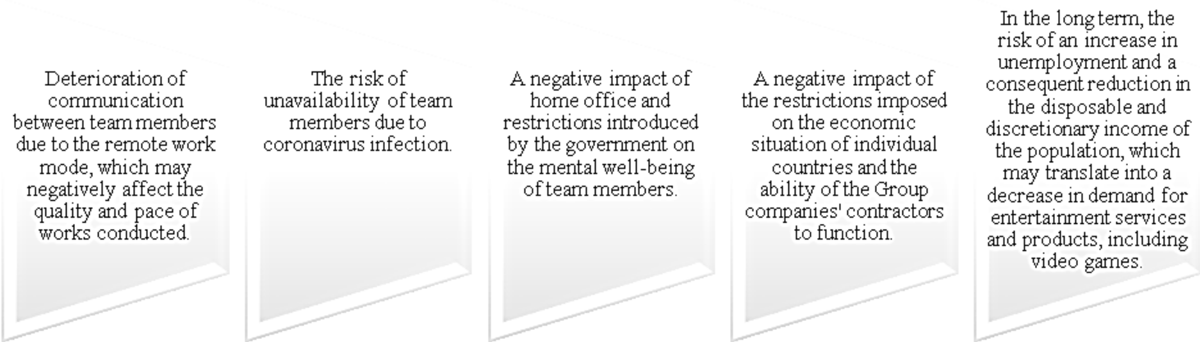


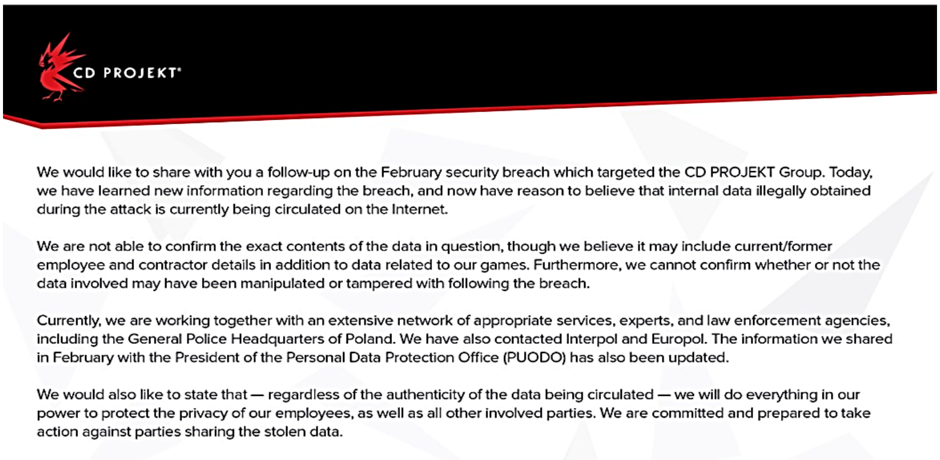
Figure 4. Risks related to the COVID-19 pandemic.

Source: own elaboration based on: Sprawozdanie Zarządu z Działalności Grupy Kapitałowej CD PROJEKT za 2020 rok.

In the opinion of the Management Board of the Company, the COVID-19 virus pandemic did not have a significant negative impact on the Group's results in 2021 and does not threaten the continuation of the Company's operations over the period of 12 months from the end of the reporting period.

4.4. The impact of a cyber-attack on the operations of the CD PROJEKT Group

On 7 February 2021, CD PROJEKT fell victim to a hacker's attack. Cybercriminals spread information that they had stolen the source codes of Cyberpunk, Gwent and The Witcher 3 and that they were in possession of administrative, accounting and investment documents. The hacker threatened that if CDP Red did not contact them within 48 hours, all the data would go online or be sold. An official statement on Twitter confirmed a successful hacking attack on CD Projekt RED's servers (Figure 5).


CD PROJEKT

We would like to share with you a follow-up on the February security breach which targeted the CD PROJEKT Group. Today, we have learned new information regarding the breach, and now have reason to believe that internal data illegally obtained during the attack is currently being circulated on the Internet.

We are not able to confirm the exact contents of the data in question, though we believe it may include current/former employee and contractor details in addition to data related to our games. Furthermore, we cannot confirm whether or not the data involved may have been manipulated or tampered with following the breach.

Currently, we are working together with an extensive network of appropriate services, experts, and law enforcement agencies, including the General Police Headquarters of Poland. We have also contacted Interpol and Europol. The information we shared in February with the President of the Personal Data Protection Office (PUODO) has also been updated.

We would also like to state that — regardless of the authenticity of the data being circulated — we will do everything in our power to protect the privacy of our employees, as well as all other involved parties. We are committed and prepared to take action against parties sharing the stolen data.

Figure 5. An official statement on Twitter CD Projekt RED's servers.

Source: https://twitter.com/CDPROJEKTRED.

The company took steps to improve the security of IT infrastructure, which include, among others: new solutions for remote work, less privileged accounts, better firewalls, expansion of the security department and cooperation with external companies in the field of cybersecurity.

The hacker's attack on CD PROJEKT RED caused the Company's stock market shares to drop. From the time of the publication of the blackmail letter, the stock rate began to drop rapidly from PLN 287.20, reaching PLN 268.90 per share at the critical moment.

The CEO of CD PROJEKT RED, Adam Kiciński, confirmed shortly after the hacker's attack that his company was restoring the lost data from backups. He also added that the attack would have a short-term impact on the pace of development work carried out by the studio. The Management Board of the Company intends to significantly increase the budget for data security, enhance barriers so that hackers could never repeat their assault on the Company and its products. barriers so that hackers could never repeat their assault on the Company and its products. According to data from the company's balance sheet, the financial outlays increased from about PLN 200,000 per month to about PLN 1,000,000.

4.5. The influence of the political and economic situation in Ukraine on the operations of the CD PROJEKT Group

In response to the invasion of the Russian armed forces in Ukraine, on 3 March 2022, the CD PROJEKT Management Board decided to suspend the sale of CD PROJEKT Group products and the sale of games available on the GOG.COM platform in Russia and Belarus. The company estimates that within 12 months from March 2021 to February 2022, the combined share of Russia and Belarus in the sales revenues of the CD PROJEKT RED segment products and in the sales revenues of the GOG.COM segment amounted to approx. 5.4% and approx. 3.7%. During the initial period of the invasion of Ukraine by the Russian military forces, the PLN currency significantly weakened in relation to the USD and the EUR, i.e., the main currencies in which the Group receives sales revenues. For the Group, which receives most of its revenues from export, strengthening the currencies in which revenues are earned in relation to the local currency is a beneficial phenomenon. In connection with the risks related to the political and economic situation in Ukraine, the Company continuously monitors the impact of the political and economic situation in Ukraine, Russia and Belarus on the activities of the CD PROJEKT Group. The Company has completed or is in the process of finalizing cooperation with Russian suppliers. Currently, the Company is not considering entry into a new cooperation with Russian or Belarusian economic entities (Skonsolidowane Sprawozdanie, 2021).

4.6. Financial analysis of the CD PROJEKT Capital Group in the period: 2017-2021

The premieres of new titles exert a big impact on the revenues and results of the CD PROJEKT RED segment. The development cycle of a computer game carried out by the Company usually lasts from 2 to 5 years. Typically, the first development works on the next game are started before the end of the development and market premiere of the previous game. In turn, the sector of digital gaming distribution, in which GOG.COM operates, is characterized by seasonality of revenues. On a yearly basis, the highest revenues are usually reported in the second and fourth quarter, with the first and third quarters yielding lower ones. The sales in the second and fourth quarter are periodically boosted by the standard promotional campaigns occurring during these quarters. The catalogue of products introduced to the service offer in a given period may also have a significant impact on the level of sales.

The financial analysis of the studied Company covers the years 2017-2021. Table 4 presents selected data on balance sheet and profit and loss account. The graph in Figure 6 illustrates the asset and equity structure of the Company.

When analysing the balance sheet dynamics in the period 2017-2021, it can be noted that the Company recorded the largest decreases in 2021. The balance sheet total in 2021 decreased by 25% compared to the previous year, which was influenced by the decrease in working assets and equity. The decrease in working assets (41%) was mainly due to a decrease in trade receivables (90%). In 2021, fixed assets increased (19%), which was influenced in particular by an almost four-fold increase in shares in subordinated entities not included in consolidation. On the capital side, long-term liabilities decreased by 78% and short-term liabilities by 58% y/y in 2021. In 2021, the equity decreased by 13% compared to the previous year. The greatest impact on the change in equity had the dividend payment to shareholders of CD PROJEKT S.A. in the amount of PLN 503,694 thousands and the financial result of the current period (PLN 208,908 thousands).

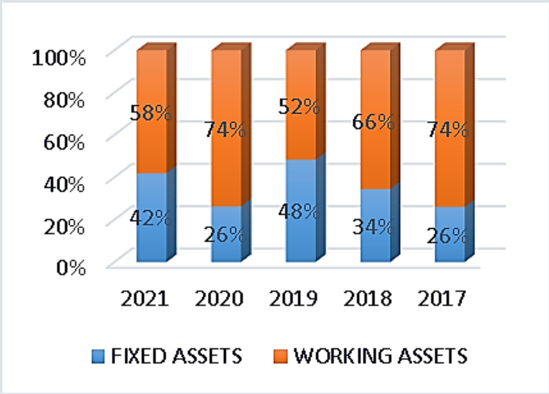
During the analysed period, the Company recorded the highest increase in the balance sheet total in 2020 by 106% compared y/y, which was mainly influenced by almost twofold increase in working assets and increase in long-term foreign capital.

Table 4.
Selected financial data of CD PROJEKT in the period: 2017-2021 (thousands PLN)

SPECIFICATION	2021	2020	2019	2018	2017
TOTAL LIABILITIES	2,158,735	2,890,299	1,404,108	1,126,838	981,513
FIXED ASSETS	905,846	759,999	679,389	388,309	255,535
WORKING ASSETS	1,252,889	2,130,300	724,719	738,529	725,978
EQUITY	1,894,356	2,183,177	1,105,651	1,002,864	882,899
FOREIGN CAPITAL	264,379	707,122	298,457	123,974	98,614
SALES REVENUES	888,172	2,138,875	521,272	362,901	463,184
COST OF PRODUCTS, SERVICES, GOODS AND MATERIALS SOLD	250,234	491,364	161,308	106,254	82,174
EBIT (OPERATING PROFIT)	232,903	1,157,077	180,286	112,392	240,940
NET PROFIT (LOSS)	208,908	1,150,148	175,315	109,334	200,270

Source: own compilation based on: The financial reports of CD PROJEKT for the years 2017-2021.

When analysing the profit and loss account, it can be noticed that the year 2020 was the best of all the audited years for the Company, in which the net profit achieved more than a five-fold increase compared to the previous year and attained the level of PLN 1,150,148 thousand. In 2020, the inequality of cost dynamics < revenue dynamics < profit dynamics was maintained. In 2021, net sales revenues, costs of products and services sold, and net profit decreased compared to the previous year, by 58%, 49% and 82%, respectively, which could have been affected by the cyber-attack.



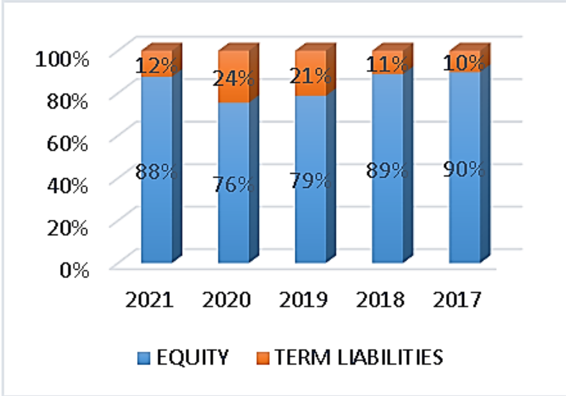


Figure 6. Structure of the CD PROJEKT balance sheet in the period: 2017-2021

Source: own compilation based on: The financial reports of CD PROJEKT for the years 2017-2021.

When analysing the balance sheet structure over 5 years, it can be noted that the structure of the company's assets and at the same time the capital did not change significantly. On the asset side, the largest share is held by fixed assets, which amounted to 58% in 2021, in terms of liabilities, the largest share is held by equity capital 88%.

The graph in Figures 7-10 illustrates the indicator analysis carried out.

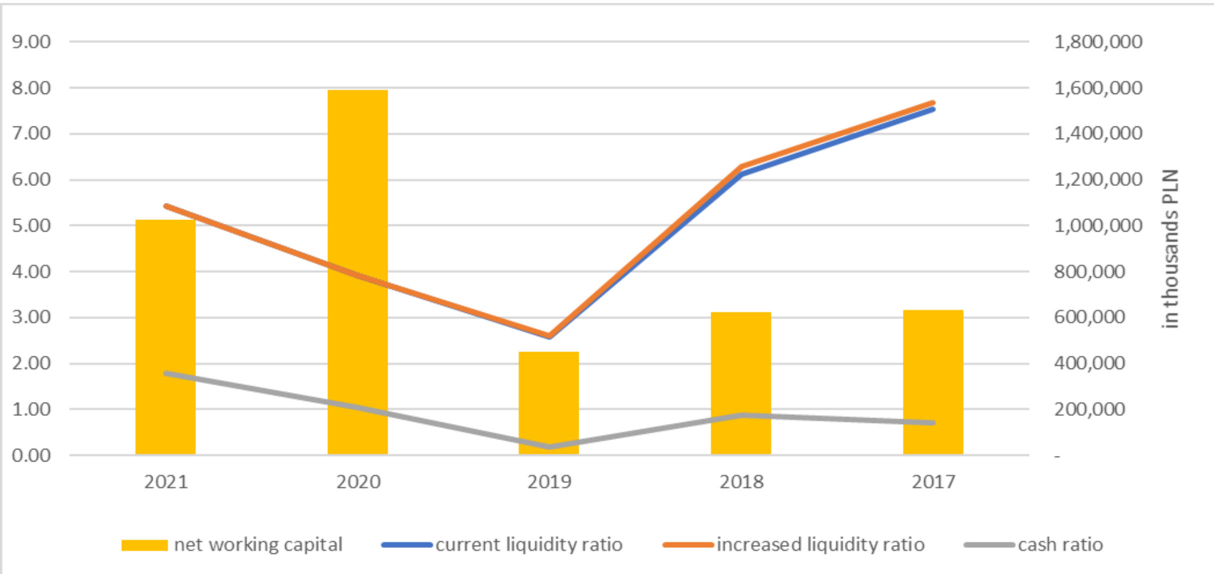


Figure 7. Liquidity ratios CD PROJEKT in the period: 2017-2021

Source: own compilation based on: The financial reports of CD PROJEKT for the years 2017-2021.

Liquidity ratios indicate excess liquidity, which means that the Company has no problems with settling its current liabilities. A positive relation occurs between current and increased liquidity ratios. The difference between them is small, which results from the low share of inventory in the Company's assets. The working capital achieved a positive value during the period under study.

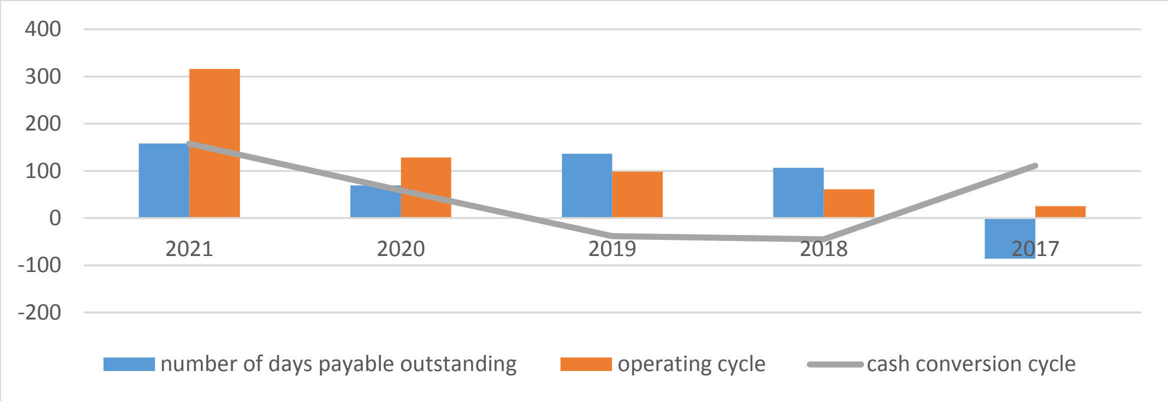


Figure 8. The operational efficiency ratios of CD PROJEKT in the period: 2017-2021.

Source: own compilation based on: The financial reports of CD PROJEKT for the years 2017-2021.

The operational efficiency ratios, from a financial point of view, indicate a disadvantageous situation from 2020 onwards. The Company settles its liabilities before the closing of the operating cycle. Such a situation may be influenced by the fact that in the course of the operations conducted, there occur cases of the concentration of the largest recipients, whose purchases exceed 10% of the total revenue from the Group's sales.

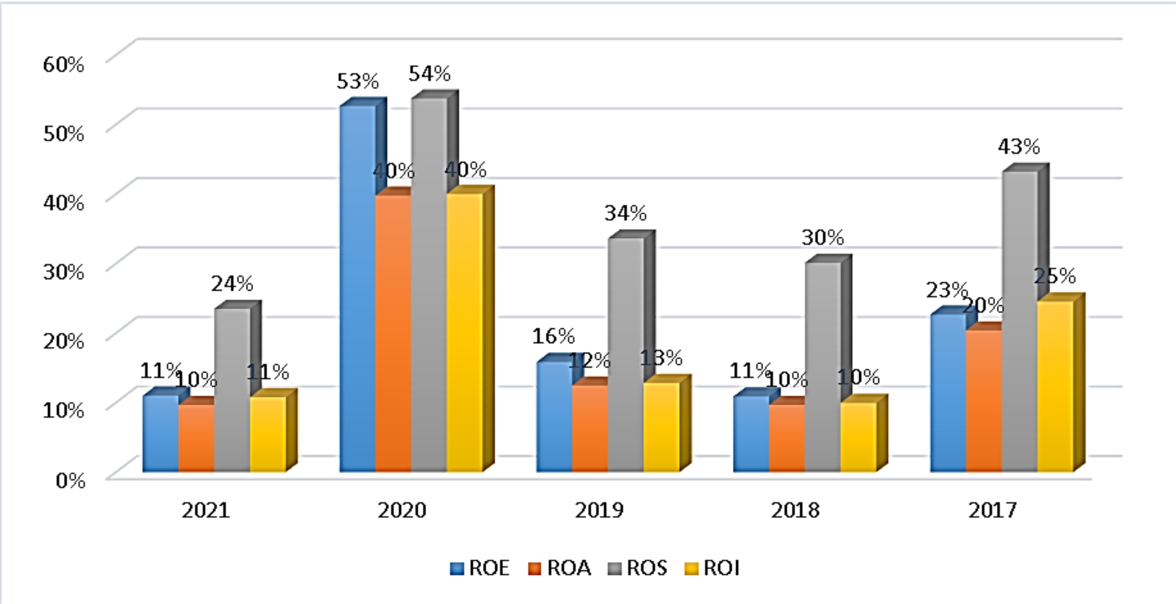


Figure 9. The ratios of CD PROJEKT profitability in the period: 2017-2021.

Source: own compilation based on: The financial reports of CD PROJEKT for the years 2017-2021.

The profitability ratios peaked in 2020. In 2021, they deteriorated, but their level was above the inflation. In all the years under study, the highest level was achieved by the return on sales.

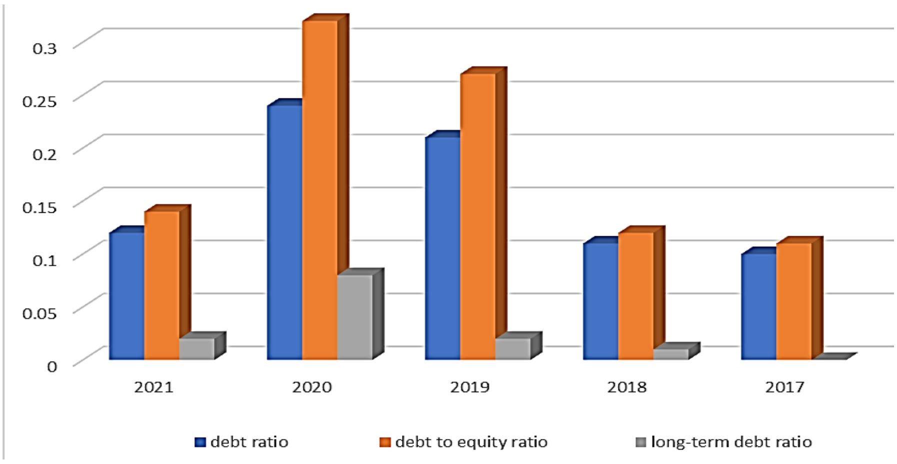


Figure 10. The debt ratios of CD PROJEKT in the period: 2017-2021.

Source: own compilation based on: The financial reports of CD PROJEKT for the years 2017-2021.

Debt ratios during the analysed years indicate that the Company does not incur debt from foreign capital.

Table 5 presents the structure of the cash flow statement of the studied Company in the period: 2017-2021.

Table 5.
Structure of the cash flow statement of CD PROJEKT in the period: 2017-2021 (in thousand PLN)

STATEMENT OF CASH FLOWS	2021	2020	2019	2018	2017
Net cash flows from operating activities	967,825	711,708	216,706	132,591	233,085
Net cash flows from investment activities	-613,795	-106,386	-164,498	-94,494	-282,114
Net cash flows from financial activities	-505,779	-91,393	-107,180	-706	-101,353

Source: own compilation based on: The financial reports of CD PROJEKT for the years 2017-2021.

From the analysis of the structure of the cash flow statement, it can be noticed that the situation did not change during the analysed period. The Company achieves a positive balance from operating activities, while investment and financial activities yield a negative balance, which is characteristic of a mature enterprise.

Table 6 illustrates the results of the analysis of the studied Company using selected discriminatory models in the period: 2017-2021.

Table 6.
Z-global indicator according to discriminatory models CD PROJEKT in the period: 2017-2021

SPECIFICATION	2021	2020	2019	2018	2017
Hołda's model					
Z-global indicator	4.408506	3.404108	2.469824	4.945179	5.919299
E. Mączyńska and M. Zawadzki's model					
Z-global indicator	8.572	12.591	5.790	8.410	13.545
J. Gajdka and S. Stos's model					
Z-global indicator	1.174	1.599	1.446	1.303	1.535
E. Mączyńska's model					
Z-global indicator	4.687	10.086	4.552	5.015	9.317
The Poznań model					
Z-global indicator	14.734	14.282	9.970	16.019	20.426

Source: own compilation based on: The financial reports of CD PROJEKT for the years 2017-2021.

When assessing the conducted analysis of unit values and noticeable trends in the behaviour of the "Z" value in the studied Company over a period of 5 years, it can be noticed that there is no risk of bankruptcy.

5. Summary and conclusions

Maintaining the company's solvency is an extremely important element for its existence, both in the short and long term. One of the company's financial management processes is financial monitoring, which is a systematic and methodical activity assessing its financial condition, and in particular identifying bottlenecks that could indicate a threat of bankruptcy.

Summing up the financial analysis of the surveyed Company over 5 years, it is concluded that on the one hand, the Company invests in its development and achieves revenues as well as profits, but on the other hand, the impact of the turbulent environment on their level is clearly visible, which is particularly noticeable in the last year of the studied period.

It is worth noting that despite a difficult period for the Company, the time of the pandemic, the cyber-attack , the invasion of Ukraine by the Russian armed forces, the decrease in sales revenue and net profit (58% and 82% respectively in 2021, comparing them y/y, both the preliminary analysis of the financial statements, followed by indicator analysis and the analysis of discriminatory models indicate that the Company faces no solvency risk, nor does it have any external debts in the form of loans or credit or any bankruptcy risk.

The cyber-attack had a direct impact on the Company's listing on the WSE. From 1 January 2021 to 31 December 2021, the closing price of the Company's shares fluctuated from PLN 153.38 (1 June 2021) to PLN 365.00 (28 January 2021). During the year, CD PROJEKT's share price fell by 29.8%, reaching PLN 192.90 on 30 December 2021. In the corresponding period, the WIG20 index gained 14.3%, while the WIG broad market index increased by 21.5%. At the end of 2021, the market capitalization of CD PROJEKT S.A. amounted to PLN 19.4 billion.

The presented cyber-attack points to the fact that the risk related to cyberspace poses a serious threat to the continuity of business and at the same time to the reputation of the enterprise in each industry. The introduction of a cybersecurity system gains increasing importance in terms of "competitive advantage" on the market. Good antivirus systems often reassure business counterparties that their choice is correct or dissuade them from the decision to cooperate taken by them (Antczak, 2020).

In 2021, the Company implemented a Risk Management Procedure, on the basis of which the principles of management and handling strategic risks were formalized. The purpose of the procedure is to achieve the acceptable level of risk for the identified hazards, and thus to limit the consequences of potential events which may have a negative impact on the Company's operations, including financial stability.

The actions taken by CD Projekt's executives in such difficult times confirm the principle of "fair play" which the Group adheres to, i.e., that it "behaves" honestly both towards its employees and business partners. They observe the principles of responsible business and engage in social actions.

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