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MANAGING FINANCE AND RISK IN POLISH PROPERTY DEVELOPMENT ENTERPRISES IN THE PERIOD OF SARS-CoV-2 PANDEMIC

Józef MYRCZEK[1*], Piotr TWOREK[2]

[1] University of Bielsko-Biała; jmyrczek@ath.bielsko.pl, ORCID: 0000-0002-9351-1410
[2] University of Economics in Katowice; piotr.tworek@ue.katowice.pl, ORCID: 0000-0002-2871-2902
* Correspondence author

Purpose: The paper aims to outline the issues related to financial management in property development enterprises during the SARS-CoV-2 pandemic. The discussions presented herein are held from the perspective of risk categories in the construction business. Risk refers to the financial condition of developers as participants of investment and construction processes in Poland.
Design/methodology/approach: In its basic part the paper deals with the operations of property development enterprises in the period from December 2019 to June 2021. The empirical research was based on case studies. In their deliberations the authors drew on their own expertise and the experience they have gained throughout long-term studies into risk management in the construction industry. Deduction and synthesis provided the foundations for the conclusions drawn by the authors with reference to property development companies operating on the Polish market at large. The conclusions presented here were also derived from the knowledge currently available in the scholarly literature in this field. In addition, comparative analysis has been employed in the publication.
Findings: The paper constitutes an empirical verification of the theoretical content presented in the scientific literature.
Research limitations/implications: The paper presents only the selected aspects of highly specialised knowledge which is finance and risk management in property development enterprises.
Practical implications: The paper presents practical knowledge (utilitarian dimension of knowledge) verified empirically through scientific discussions.
Originality/value: The discussions presented in the paper may be seen as casting some more light onto finance and construction risk management in developers' businesses during the COVID-19 pandemic. The outbreak of the pandemic is referred to in the scholarly literature as a so-called black swan.

Keywords: Financial management, construction risk, property development enterprises, real-estate market, case study analyses.

Category of the paper: Research paper.

1. Introduction

March 2022 was the second anniversary of the global pandemic outbreak of an infectious disease called COVID-19 and caused by the SARS-CoV-2 coronavirus. Throughout this span of time Polish entrepreneurs, including developers, have faced multiple difficulties when operating their businesses under such challenging and exceptional circumstances. In the public domain a new threat has emerged, i.e. the pandemic risk, as they refer to it in the scientific literature (Ratten, 2020; Ansell et al., 2021; Myrczek et al., 2021; Pietrasiński, 2021). The outbreak of the pandemic has resulted in serious financial difficulties and an upsurge in the business risk, leading to a higher number of bankruptcies among micro- and small businesses. This phenomenon is a highly infrequent occurrence described in the black swan theory presented in management and quality sciences(Taleb, 2021). More specifically, this is an unpredictable and unprecedented threat or a risk which occurs in a business environment and changes the rules of a social and economic life, breaking down well-known standards and changing dramatically the perception of reality (Solarz, Waliszewski, 2020; Taleb, 2021). It has created completely new and turbulent settings, and has caused a sudden and unexpected change in the philosophy of finance and risk management in business activities carried out by all participants of investment and construction processes in Poland, including real-estate enterprises such as developers. Due to this new pandemic risk, the scientists who study this field have needed to reconsider the conditions in which the building sector works and look at these from a different angle (Myrczek et al., 2021; Artpairin, Pinmanee, 2022). It should be noted that in the scholarly literature there is just a handful of authors who add to the construction risks the one which is connected with periodical shortages and absences of construction workers due to seasonal respiratory tracks infections and diseases in the construction industry (Flanagan, Norman, 1993; Palmer et al., 1993; Boothroyd, Emmett, 1996; Godfrey, Halcrow, 1996; Bunni, 2003; Loosemore et al.,2006; Smith et al.,2006). In the scientific literature the pandemic risk is barely mentioned as the risk having considerable impact on the development of the construction industry and, in particular, the residential construction sector.

In connection with this knowledge gap a few questions may arise and this publication is an attempt to find answers to at least some of these. The basic question is about the financial standing of property development enterprises, seen as key participants of the residential estate market in Poland at the times of the COVID-19 pandemic. A related issue would be to investigate the business risk faced by Polish developers. An attempt to find responses to these issues is the main objective of the discussions presented herein. More specifically, the paper deals with financial management analysed through the aspect of risk encountered by property development companies during the SARS-CoV-2 pandemic. A research problem which arises against this background is not only to gain an understanding of the nature of the pandemic risk in the construction industry as such, but also –more importantly– to find out what impact the risk has on the performance of specific participants of investment and construction processes, i.e. developers.

Due to that, the discussions presented in the paper revolve around an assessment of the financial condition of the developers researched during so-called the first, the second and the third waves of the pandemic. The empirical illustration to this issue are Polish property development enterprises included in a portfolio of Silesian Cooperative Bank (Śląski Bank Spółdzielczy „Silesia") in Katowice in Poland, which provides funding for these entities. The group surveyed comprises small, medium-sized and big property development enterprises, whose core business is undertaking and performing investment construction projects on the primary residential construction market, mostly in the south of Poland. The organisations surveyed include investors-developers and contractors-developers. As the research covers just 22 developers the authors used case studies as their principal research method. Their deliberations are also applicable to entities operating on the real-estate market in general. In addition to a review of the literature in this field the authors employ the methods of synthesis and deduction. The discussions are based on the foundations of knowledge provided by the sciences of economics and management in the construction industry. Apart from that, the authors draw on their own experience and the expertise obtained from the research into risk management in entities operating on the real-estate market which they have conducted for many years now (Śmietana, Tworek, 2011; Tworek, Myrczek, 2015, 2016, 2017; Myrczek et al., 2021). The paper should be seen as continuation of the authors' studies on risk management in the construction industry, with the focus on the financial risk. As this is a very extensive field, this publication concentrates on the empirical part. One of the reasons behind that decision has been the fact that general issues related to economics and management in property development operations are quite thoroughly presented in the scientific literature (Socha, 2000; Dąbrowski, Kirejczyk, 2001; Gawron, 2006; Siewiera, 2008; Sitek, 2014; Cao, 2015; Siwiec, 2020).

2. Financial management and risk in property development enterprises – case study analyses

All developers surveyed conduct residential construction projects and have been established as commercial companies and partnerships. Due to sensitive data protected under the banking secrecy law, the details of the organisations have been redacted and their names in the paper are replaced with successive letters of the alphabet, i.e. from A to Z. As not all the developers provided a complete set of financial data, the tables incorporated in the paper contain some empty fields. From among 22 organisations under review five are joint stock companies (in Polish: *spółka akcyjna*, abbr: *S.A.*). The remaining ones are limited liability companies (in Polish: *spółka z ograniczoną odpowiedzialnością*, abbr: *Sp. z o.o.*)and limited partnerships (in Polish: *spółka komandytowa*, abbr: *Sp. z o.o. S.K.*). All the developers surveyed are included in the portfolio managed by Silesian Cooperative Bank in Katowice. Details are presented below in Table 1.

Table 1.
A summary of funding provided to property development enterprises surveyed as of the end of 2021

Developer	Legal status	Scope of funding (in PLN million) as of 30.12.2021
A	Sp. z o.o.	5-10
B	Sp. z o.o. S.K.	1-5
C	Sp. z o.o.	0
D	Sp. z o.o.	1-5
E	S.A.	0
F	S.A.	0
G	Sp. z o.o.	1-5
H	S.A.	15-20
I	Sp. z o.o.	1-5
J	S.A.	15-20
K	Sp. z o.o.	15-20
L	Sp. z o.o. S.K.	5-10
M	Sp. z o.o.	15-20
N	S.A.	1-5
O	Sp. z o.o.	10-15
P	Sp. z o.o. S.K.	1-5
R	Sp. z o.o. S.K.	5-10
S	Sp. z o.o.	10-15
T	Sp. z o.o.	5-10
U	Sp. z o.o. S.K.	5-10
W	Sp. z o.o. S.K.	1-5
Z	Sp. z o.o. S.K.	5-10

Source: Silesian Cooperative Bank in Katowice, Poland.

Table 1, in addition to the specification of the organisational and legal status, contains figures which show the size of funding received from the bank by specific developers as of the end of 2021. The average funding is close to a median i.e. approx. PLN 7.5 M. The total funding provided to these organisations by the bank amounted to PLN 166.1 M. We may add here that at the end of 2021 three developers managed to repay all their liabilities to the bank in this respect. One may notice that a developer's organisational and legal status is not a decisive factor when it comes to their chance of obtaining funding and the amount they may receive from the bank, as what matters is the developer's creditworthiness. In the period of time analysed most of the organisations under review showed a healthy cash flow position, taking into account external funding (bank loans). This is illustrated in Table 2.

Table 2.
Selected financial data of analysed developers – quick liquidity ratio

Specification / Developer	Quick liquidity ratio					
	Dec 2019	**June 2020**	**Sept 2020**	**Dec2020**	**Mar 2021**	**June 2021**
A	3.31	2.0	3.8	3.3	3.3	2.9
B	1.0	1.0	1.0	1.0	1.0	1.0
C	1.1	1.1	-	-	-	-
D	0.7	1.2	2.4	1.3	1.8	1.4
E	1.7	1.9	1.7	-	-	-
F	1.3	1.5	1.4	-	-	-
G	1.9	3.8	4.6	3.7	8.5	12.5
H	11.4	12.4	23.7	13.9	13.4	10.8
I	0.9	1.0	1.0	1.0	1.0	-
J	3.2	2.3	2.3	2.2	2.3	2.1
K	4.4	6.0	4.7	4.3	4.7	4.8
L	1.2	1.3	1.2	1.2	1.2	1.4
M	-	155.8	215.9	6.8	78.2	2.5
N	1.4	3.4	1.5	1.2	1.0	1.0
O	0.8	1.2	1.3	1.0	1.0	1.1
P	1.0	7.8	0.7	0.7	0.2	1.1
R	1.6	3.13	3.3	3.5	2.8	2.5
S	1.9	42.7	3.4	7.9	0.8	13.3
T	824.3	832.2	-	16.1	14,625.9	17.4
U	1.0	1.0	1.0	1.5	1.7	1.8
W	0.9	0.9	0.9	0.9	1.0	1.0
Z	4.6	5.4	3.6	1.8	5.2	3.6

Source: Silesian Cooperative Bank in Katowice, Poland.

As can be seen in Table 2, companies B, I, P and W have some difficulties with financial liquidity measured with their quick ratio. According to the reference range recommended for this financial indicator in the scholarly literature, its optimal value should be from 1.2 to 2.0 (Brigham, Gapenski, 2000; Arnold, 2002; Brealey et al., 2007). This indicator allows us to check whether liabilities may be repaid through the disposal of current assets, i.e. assets which can easily be converted into cash (Gitman, 2006; Brealey et al., 2006; Watson, Head, 2007). In this case a risk that a developer may lose their financial liquidity means that a drop in this ratio falls below the accepted reference range; during the COVID-19 pandemic the majority of development companies belonging to the analysed portfolio managed to handle their cash flow problems well (Table 2). In the calendar quarters reviewed some developers (e.g. H, M and T) were even able to report over liquidity, which is not an undesirable phenomenon in the practical operations of an organisation, contrary to what some scientists claim in the scholarly literature (Arnold, 2002; Gitman, 2006; Hartman, 2007; Watson, Head, 2007). A question about a risk of financial indebtedness may be posted here and this is illustrated with the data contained in Table 3.

Table 3.
Selected financial data for developers surveyed – debt ratio

Specification Developer	Debt ratio(DR)					
	Dec 2019	June 2020	Sept 2020	Dec2020	Mar 2021	June 2021
A	0.8	0.6	0.6	0.7	0.7	0.7
B	1.0	1.1	1.0	1.0	1.0	1.0
C	1.0	1.0	-	-	-	-
D	0.5	0.5	0.5	0.5	0.5	0.5
E	0.7	0.8	0.7	-	-	-
F	0.7	0.7	0.7	-	-	-
G	1.0	1.0	0.9	0.9	0.8	0.8
H	0.2	0.2	0.2	0.2	0.2	0.2
I	0.7	0.8	0.8	0.7	0.7	-
J	0.7	0.7	0.7	0.7	0.7	0.7
K	0.7	0.7	0.7	0.7	0.7	0.7
L	0.8	0.8	0.8	0.9	0.8	0.7
M	0.0	0.0	0.0	0.9	0.9	0.9
N	0.5	0.5	0.5	0.6	0.6	0.6
O	0.9	0.9	0.9	0.9	0.9	0.8
P	1.0	0.9	1.0	1.0	1.0	1.0
R	0.8	0.8	0.8	0.8	0.8	0.8
S	1.4	1.0	1.0	1.0	0.9	0.9
T	1.0	1.0	1.0	1.0	1.0	1.0
U	1.0	1.0	1.0	1.1	1.1	1.0
W	1.1	1.1	1.1	1.2	1.1	1.2
Z	0.2	1.0	1.0	1.0	1.0	1.0

Source: Silesian Cooperative Bank in Katowice, Poland.

Based on the debt ratio which represents the financial risk (Brigham, Gapenski, 2000; Arnold, 2002; Pike, Neale, 2003; Nersesian, 2004; Jajuga, 2007; Brealey et al., 2007; Hirschey, Nofsinger, 2008)when reviewing the debt figures for specific organisations given in Table 3, we can see that a high debt ratiomeans that a developer has less autonomy and a limited access to new sources of funding and bears a higher risk of losing its financial liquidity (Brigham, Gapenski, 2000; Merna, Al-Thani, 2001; Hartman, 2007; Brealey et al., 2007; Karmańska, 2008; Burtonshaw-Gunn, 2009; Minasowicz, 2009). Except for company W, for almost all of the remaining developers in the periods of time reviewed this ratio equals or is less than 1.0. During the COVID-19 pandemic property development enterprises surveyed in terms of their effective financial management show a good financial standing. This is also true about the effectiveness of their financial risk management. Here it would be helpful to determine the net financial surpluses generated in the organisations surveyed. In the theory of financial management conducted in enterprises, including construction businesses, organisations don't necessarily have to demonstrate excessive profitability. What's more important for a bank is an organisation's financial liquidity and the level of indebtedness which does not adversely affect the organisation's credit rating (Palmer et al., 1993; Brigham, Gapenski, 2000; Dębski, 2005; Dallas, 2006; Czekaj, Dresler, 2006; Brealey et al., 2007; Burtonshaw-Gunn, 2009; Minasowicz, 2009; Allen, 2012). This is illustrated in Table 4.

Table 4.
Selected financial data for developers surveyed – net financial surplus (in PLN million)

Specification / Developer	Net financial surplus					
	Dec 2019	June 2020	Sept 2020	Dec 2020	Mar 2021	June 2021
A	9.22	23.97	31.26	17.72	248.64	1.85
B	<0	<0	<0	0.05	0.82	0.84
C	<0	<0	-	-	-	-
D	1.60	0.93	1.43	1.93	0.57	-
E	23.26	3.91	10.49	-	-	-
F	16.12	4.26	3.97	-	-	-
G	<0	<0	<0	2.80	0.74	5.02
H	10.81	1.81	6.78	9.96	4.18	23.95
I	0.34	0.28	0.28	0.43	<0	-
J	111.97	40.155	69.59	145.70	33.05	130.19
K	18.80	10.31	-	21.42	2.23	11.23
L	16.57	4.31	-	15.04	3.18	-
M	-	<0	<0	<0	0.36	0.69
N	0.08	5.97	13.13	14.96	0.92	2.19
O	0.58	0.20	0.35	0.48	0.17	0.42
P	<0	0.10	0.05	0.05	0.02	0.04
R	2.07	0.79	1.18	1.52	0.24	0.50
S	<0	<0	<0	0.03	0.35	0.62
T	<0	<0	<0	<0	<0	<0
U	<0	-	-	<0	<0	<0
W	<0	-	<0	<0	<0	<0
Z	<0	<0	-	<0	0.09	0.08

Source: Silesian Cooperative Bank in Katowice, Poland.

As can be seen in Table 4, in the case of six developers (A, H, J, N, O, R), which provided their complete quarterly financial data, a net financial surplus has been generated and measured as net profit plus amortisation. The general picture of the property development enterprises belonging to the bank's portfolio is favourable. This means that despite the SARS-CoV-2 pandemic, the developers surveyed have not made losses, as shown in their balance-sheets. Two important things should be emphasised here. Firstly, in the analysed quarters none of the developers used any government aid in form of the so-called anti-crisis shield, which is another proof for their sound financial situation (Myrczek et al., 2021). Secondly, 2020 saw the conditions on the Polish residential real-estate market as quite favourable for developers operating there. In particular, as a result of the decisions made by the Monetary Policy Council and of the monetary policy pursued by the National Bank of Poland (the Polish central bank) at that time the interest rates in Poland were maintained at a low level, incentivising individual customers to purchase flats on the real-estate market; that also stimulated a number of construction projects to be undertaken by developers (Oksiński, 2020; Kochański & Partners, 2020; Rybarczyk, 2020; Ptaszyński, 2021; Myrczek et al., 2021). In 2021, however, an inflation rate started to be visibly higher in Poland, reaching a staggering double-digit figure in 2022 for cost-push inflation. Irrespective of that, however, the financial situation of the development companies surveyed (Table 4) was determined by their operations on the primary market in the residential real-estate sector and the conditions on that market as such. Investments into real estate are known to work well against price rises caused by inflation (Gawron, 2006; Cao, 2015; Siwiec, 2020). Profit margin figures given in Tables 5, 6 and 7 complement the discussions presented in the paper.

Table 5.
Selected financial data for developers surveyed – net profit margin

Specification	Net profit margin (NPM)					
Developer	Dec 2019	June 2020	Sept 2020	Dec 2020	Mar 2021	June 2021
A	18%	41%	47%	20%	7%	8%
B	<0	<0	<0	<1%	5%	16%
C	-	-	-	-	-	-
D	7%	11%	13%	14%	24%	-
E	5%	2%	3%	-	-	-
F	7%	6%	4%	-	-	-
G	<0	<0	28%	39%	42%	44%
H	24%	7%	19%	19%	32%	81%
I	3%	6%	3%	3%	-1%	
J	15%	9%	10%	13%	13%	20%
K	13%	15%	14%	13%	10%	17%
L	22%	14%	17%	19%	-	-
M	-	<0	<0	<0	22%	21%
N	<0	5%	9%	7%	3%	3%
O	20%	4%	7%	12%	20%	27%
P	<0	73%	10%	5%	27%	16%
R	19%	7%	7%	6%	16%	12%
S	<0	<0	<0	2%	63%	56%
T	<0	<0	<0	0	0%	0
U	<0	<0	<0	0	0	0
W	<0	<0	<0	<0	<0	<0
Z	<0	<0	<0	<0	98%	88%

Source: Silesian Cooperative Bank in Katowice, Poland.

Table 6.
Selected financial data for developers surveyed – ROA

Specification	Return on Assets(ROA)					
Developer	Dec 2019	June 2020	Sept 2020	Dec 2020	Mar 2021	June 2021
A	9.4%	20.9%	28.6%	16.7%	0.2%	1.5%
B	<0	<0	<0	0.1%	2.0%	2.2%
C	<0	<0	-	-	-	-
D	1.1%	1.1%	1.9%	2.7%	1.1%	0.8%
E	7.7%	1.2%	3.1%	-	-	-
F	14.6%	4.3%	3.7%	-	-	-
G	<0	<0	<0	16.8%	4.4%	25.5%
H	3.9%	0.5%	2.3%	3.5%	1.4%	7.6%
I	2.1%	1.2%	1.4%	2.2%	<0	-
J	4.7%	1.5%	2.4%	5.3%	1.2%	4.5%
K	5.1%	2.6%	3.8%	4.8%	0.5%	2.4%
L	15.3%	3.8%	bd	15.8%	3.2%	-
M	-	<0	<0	<0	0.6%	1.4%
N	<0	1.6%	3.2%	3.3%	0.2%	0.4%
O	2.5%	0.5%	1.2%	1.7%	0.8%	2.1%
P	<0	7.0%	1.5%	1.0%	1.7%	1.7%

Cont. table 6.

R	3.3%	0.5%	0.7%	0.7%	0.4%	0.8%
S	<0	<0	<0	0.1%	1.6%	2.8%
T	<0	0.0%	0.0%	0.0%	<0	<0
U	<0	<0	<0	<0	<0	<0
W	<0	<0	<0	<0	<0	<0
Z	<0	<0	<0	<0	0.7%	0.5%

Source: Silesian Cooperative Bank in Katowice, Poland.

Table 7.
Selected financial data for developers surveyed – ROE

Specification	**Return on equity(ROE)**					
Developer	**Dec 2019**	**June 2020**	**Sept 2020**	**Dec 2020**	**Mar 2021**	**June 2021**
A	50.2%	56.8%	63.2%	49.2%	0.6%	4.9%
B	*	*	*	*	*	*
C	*	*	-	-	-	-
D	2.4%	2.3%	-	5.3%	2.2%	-
E	29.1%	4.7%	11.5%	-	-	-
F	55.9%	12.9%	12.1%	-	-	-
G	*	*	*	115.4%	23.5%	109.0%
H	5.0%	0.7%	3.0%	4.4%	1.8%	9.6%
I	6.9%	5.3%	5.4%	8.0%	-0.2%	-
J	14.4%	4.9%	8.2%	15.8%	3.5%	13.9%
K	15.7%	8.0%	3.8%	15.1%	1.4%	7.2%
L	80.9%	15.3%	-	109.9%	18.8%	0.0%
M	-	-0.9%	-1.3%	-2.0%	6.4%	11.2%
N	-0.1%	3.1%	8.5%	7.4%	0.4%	1.0%
O	18.5%	3.9%	8.2%	11.3%	4.9%	12.4%
P	*	122.4%	1121.5%	*	59.5%	128.2%
R	3.3%	0.5%	3.5%	0.7%	2.8%	2.5%
S	*	-41.2%	-27.4%	3.0%	27.0%	39.5%
T	-11.0%	-	-	-7.5%	-12.2%	*
U	*	*	*	*	*	*
W	*	*	*	*	*	*
Z	-37.7%	*	*	*	151.6%	160.2%

Note. * means negative equity.

Source: Silesian Cooperative Bank in Katowice, Poland.

Tables 5, 6 and 7 contain the financial results generated by the organisations surveyed and presented as percentage rates (Pike, Neale, 2003; Nersesian, 2004; Brealey et al., 2007; Hirschey, Nofsinger, 2008; Gitman et al., 2011). The advantage is that they show financial results in relative terms. When it comes to the number of potential financial indicators which may be used based on the data derived from financial reporting, the scholarly output which has been produced in the fields of construction enterprise economics and management is quite impressive (Weatherhead et al., 2005; Dallas, 2006; Hartman, 2007; Minasowicz, 2009; Eaton, Kotarski, 2009; Burtonshaw-Gunn, 2009; Lichota et al., 2021). Such companies maintain a full scope of accounting, which is indirectly due to their business profile (construction and assembly). Following the analysis of almost all the details given in Table 5 (net profit margin – NPM) and 6 (ROA) (except for developer C, in Table 5), it turns out that almost all the companies generate positive financial results. Only in case of some developers (e.g. I, M, S and T) we can sometimes see negative percentage rates, in particular for ROE (Table 7). In general, the overall positive situation in the portfolio held by the bank is mainly due to the net financial surplus generated by the enterprises in the periods of time surveyed (Table 4), as well as effective corporate management (Minasowicz, 2009; Eaton, Kotarski, 2009). Companies H and O stand out from among the organisations evaluated in terms of their financial effectiveness. These enterprises demonstrate a strategic approach to their financial management. Company T is the only one that does not look favourable in this respect. Please note also that some developers, i.e. B, U or W, report negative equity. Therefore, the role played by banks in financing the property development business is difficult to underestimate. This is, most of all, about access to external capital, as the cost of such capital tends to be lower than the costs of equity (Brigham, Gapenski, 2000; Arnold, 2002; Czekaj, Dresler, 2006; Gitman, 2006; Brealey et al., 2007; Watson, Head, 2007). One of the areas in which developers should take this into account in their financial management is the estimation of financial risks, which may come in myriad forms (Jajuga, 2007; Burtonshaw-Gunn, 2009; Minasowicz, 2009). In theory and in practice such issues – and, in particular, financial risk management – constitute an integral element of strategic management as a sub discipline of science (Merna, Al-Thani, 2001; Young, Tippins, 2001; Allen 2012; Brown 2015; Power, 2016; Bućko, 2020).

3. Conclusion

The turbulences in the construction sector caused by the COVID-19 pandemic, such as lockdowns, remote work, quarantined construction workers and sanitary procedures introduced on construction sites, had a clear effect on disrupted continuity of business suffered by all participants of investment and construction processes, including in particular property development enterprises operating on the Polish market. Disruptions also affected global supply chains for raw materials used for construction and assembly activities. According to the Polish Association of Construction Industry Employers, during the second wave of the pandemic, i.e. in November 2020, the construction industry saw a roughly 40% drop in the number of foreign workers employed; it mainly concerned subcontractors and could potentially have led to longer delivery times for construction investment projects (Koronawirus, 2021). What needs to be emphasized here is the fact that the SARS-CoV-2 pandemic is still going on worldwide. It seems that in Poland in the first calendar half of 2022 the pandemic was temporarily subdued. However, a military conflict in Ukraine, coupled with spiralling pay rates and growing prices, have led numerous developers into adopting a development strategy (Towarnicka, 2007; Niemczyk, Trzaska, 2020; Bućko, 2020)which is referred to in the scholarly literature as stagnation. Participants of construction investment processes in Poland are forced now to operate in an increasingly uncertain environment. Due to a rise in construction costs a number of investments projects in the residential construction industry have been put on hold. This issue is so broad that it may make a separate subject of empirical studies in the future.

Therefore, in an attempt to come up with a synthetic summary of the discussions presented in the paper, the first thing to point out to is the fact that during the three consecutive waves of the SARS-CoV-2 pandemic reviewed here the developers surveyed have not demonstrated any risk of bankruptcy or insolvency (Table 1). This does not mean, however, that property development projects have gone smoothly. Apart from that, none of the organisations surveyed has gone through any receivership proceedings nor has it been reported in the Polish database of debtors, such as Krajowy Rejestr Długów or Biuro Informacji Kredytowej (Myrczek et al., 2021). Even in the conditions of temporary losses incurred due to an investment cycle or the materialisation of the construction risk, all of the developers surveyed had sufficient financial resources (Table 2) to enable them to settle their payments to contracting parties, construction workers, tax liabilities and financial costs (Myrczek et al., 2021). In particular, after 24 March 2020,the following sources of risks which may affect budgets and timely execution of construction projects have been identified: firstly, delays in the issuing of construction, occupancy and other permits by administration authorities; secondly, a temporary shortage of workers due to the COVID-19 pandemic, including workers being off sick or quarantined, foreign workers, mainly construction workers from Ukraine, returning to their home countries(in early 2022 the situation changed completely); thirdly, delays in supplies of raw materials, construction materials, semi-finished goods and subassemblies; fourthly, a risk related to the maintenance of the required quality level (the need to replace non-supplied materials with their substitutes, a hurry when attempting to make up for any accumulated delays); fifty, a rise in costs of construction investment projects as a result of the need to implement measures to meet sanitary requirements set out in the COVID-19 Regulation (disinfection agents and additional protective clothing, keeping social distance, additional sanitary cabins, transport of workers to a construction site) (Regulation, 2020); sixthly, a risk that agreed-on project delivery deadlines may be missed; seventhly, difficult access to funding for property developers as well as potential buyers of flats on the real-estate market; eighty, more difficult access to notary services, more difficult travelling for customers due to quarantines or limited social contacts (Kochański & Partners, 2020; Oksiński, 2020; Rybarczyk, 2020). When it comes to the financial risk, its occurrence in the property development business in Poland may be affected in the future by changes in the inflation rate in the Polish economy, which will have an impact on the demand on the residential property market. The inflation risk may even lead to an upsurge in developer bankruptcies, particularly if coupled with another wave of the COVID-19 pandemic expected by the government in the autumn of 2022.

Irrespective of the above, however, the pandemic risk may pose a significant challenge in the future for research into risk in the construction sector. From the theoretical point of view it may have a large effect on financial performance of property development businesses in Poland, although the studies have failed to provide evidence in support of such thesis (Tables 3, 4, 5, 6 and 7). Despite numerous difficulties outlined above, the property development enterprises surveyed have demonstrated a high degree of resilience when conducting business during the SARS-CoV-2 pandemic. Contrary to companies from other sectors of the economy, developers managed to take advantage of the benefits resulting from specific nature of investment and construction processes as well as the conditions in which they operated. This refers, first of all, to such issues as carrying out production on construction sites, or low interest rates on the Polish equity market in the years of 2020-2021, resulting in an easy access to mortgages (Gawron 2006; Buszko, 2011). Surprisingly enough, high interest rates in 2022, spiralling pay rates and rising prices in the economy may cause the high dynamics of investments in the real estate market in Poland to continue, largely due to consumer behaviour. All these may be reflected in healthy financial results generated by the property development sector in Poland. This, however, may come together with a high business risk that developers will need to face. As a consequence it will be much more difficult for developers to manage their finances and risks in the future, compared to how it has been before.

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