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Managing company value in times of COVID-19 turbulences: Winners and losers in Central Europe

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Abstract. This research adds to the growing literature on impact of the COVID-19 global turmoil on corporate financial performance. Changes in company value are continuous market processes. However, the pandemic has triggered many shock changes, including unprecedented turbulences in most business mechanisms. Our research provides empirical assessment of the market process of value migration across industries in Central Europe in several dimensions. The estimates of market value added and synthetic measure of value migration show substantial differences between industries. The study provides a classification of business designs by development stages and details significant changes in operating performance in response to the health and economic turmoil. Our findings on differences in industries' vulnerability to shock changes have important implications for managers, shareholders, lenders, and other company stakeholders.

Keywords: market value, financial performance, value migration, COVID-19, crisis

JEL Classification: F65, G12, G32, O16, O57

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1. INTRODUCTION

A little more than a decade after the 2008 global financial crisis, the world is witnessing unprecedented economic turbulence triggered by the coronavirus (COVID-19) pandemic. Although some shifts in market value are natural as the value flows from declining business models to emerging or developing ones, 2020 led to particularly profound changes in economic activity around the world. We can already see that the turbulence induced by COVID-19 is very different from previous ones (Reinhart, 2022; Stiglitz et al., 2020). The epidemic has already severely affected many spheres of our lives in many ways, including profound and rapid changes in the business environment. It has increased uncertainty and provoked serious challenges to business activity. The economic conditions suddenly turned dire and induced bankruptcies, or financial difficulties at least, in many businesses. The devastating consequences of pandemic periods have been pointed out even before the current situation (Clark, 2016). However, the new circumstances seemed to create new opportunities at least in some business areas.

The central point of this research is value migration. This process is an integral part of capital markets. It accompanies the investors' search for profitable capital allocation possibilities. Slywotzky (1996) defines value migration as 'the flow of profit and shareholder wealth across the business chessboard'. We analyse different dimensions of this process, namely the individual level of a company, the aggregate level of an industry, and the aggregate level of the market. Prior studies did not examine the shifts in value between companies and industries. The rapid changes in the business environment and the rising importance of quick reviews of business strategies have provided increased motivation for a more in-depth examination of the process of value inflows and outflows. The shift of value affects many stakeholders. Shareholders, creditors, management, employees, and other parties connected with companies are significantly affected by business success or failure. Given the importance of this issue, many researchers have tried to discuss performance changes after the pandemic. To the best of our knowledge, no study exists for the European market that empirically tests value migration processes between companies and industries. This has prompted our research to focus on examining the processes related to market value added, synthetic measures of value migration, and operating performance in key financial areas. This allowed us to assess the flows of business designs between development stages.

This research enriches the literature by providing empirical evidence taken from the microeconomic level. The goal of corporate finance management to increase market value forces companies to implement new development possibilities and identify unique value drivers (Copeland Thomas et al., 1994; Rappaport, 1999). The search for a successful business design that increases competitive advantage is an inherent part of the lifecycle of business models. This paper provides academicians and practitioners with an assessment of value migration processes in public non-financial companies listed in Central Europe. Our discussion of company performance during severe market downturns combines two points of view. First, market equity performance is analysed. Although market value has some drawbacks, this has an undeniable priority in informing us about economic strengths and business prospects. Second, the operating perspective is included. Defining the direction, and measuring the magnitude of value migration between companies or industries are not easy tasks. The measures applied in this study are based on market value added and combine market and operating perspectives to observe value migration processes in Central Europe.

The contributions of this study are fourfold. First, it provides empirical evidence on value migration processes with the emphasis on market value added. The turbulence generated by COVID-19 has evoked questions about rapid value changes that are of great importance for company stakeholders and societies. More specifically, we discuss the shifts in company value during crisis periods that may bring opportunities as well threats to alternative business models. Second, the research fills a research gap in a multidimensional approach by applying the synthetic measure of value migration. It allows for a comprehensive discussion of

the observed changes. Next, it also contributes some insights into a classification of public companies and industries in Central Europe into development stages. We focus on the micro-level, through analysing the shifts for companies and industries between the inflow, stabilisation and outflow phases of the corporate life cycle. Finally, the research reports on the implications of the COVID-19 pandemic on corporate performance in key financial areas including profitability, liquidity, investments and corporate value. The empirical examination of the process of value changes between companies and sectors during the turbulent pandemic period, provides insightful perspectives for managers and other stakeholders.

The remainder of the article is designed as follows. The second section is a review of existing literature focused on the field of corporate value management during the pandemic. The next section explains data sources. Next, the research design is explained and we discuss the measures used and the procedure for classification into separate development phases. The fifth section presents and discusses the empirical findings. Finally, the last section concludes the paper.

2. LITERATURE REVIEW

Although value migration is a basic process on capital markets, empirical studies on this issue have received little attention so far, especially in economics and finance research. Even though there exists broad literature on value management, the empirical examination of value shifts between industries from the microlevel perspective remains underfocussed and underresearched. The pandemic outbreak has revealed many new challenges in these issues. In addition to the fatalities caused by COVID-19, the health crisis has evoked profound and multifaceted economic changes worldwide.

The COVID-19 pandemic is still ongoing. However, some studies have already discussed the substantial economic turbulence worldwide (Padhan & Prabheesh, 2021). Now, research into the pandemic is one of the most dynamically growing areas engaging both academics and practitioners. Our study focuses on financial performance changes resulting in value migration among industries during the unprecedented COVID-19 crisis. The starting point for the discussion is the literature on corporate finance and corporate value management. However, the economic consequences of the health crisis are hitting many economic areas, such as problems connected with gold and cryptocurrencies (Shaen et al., 2020), labour supply and demand shocks (Brinca et al., 2021), unemployment and the shadow economy (Remeikiene & Gaspareniene, 2021), macroeconomic impact (McKibbin & Fernando, 2021), oil prices (Gil-Alana & Monge, 2020), supply chains (Magableh, 2021), effects on fiscal and monetary policies (Benmelech & Tzur-Ilan, 2020), business risk perception (Cepel et al., 2020), or inventory management challenges (Zimon et al., 2021). The problems discussed in these articles do not directly concern the problem we are dealing with, nevertheless, they show that the crisis has spread to many areas of operation of companies, influencing the immunity of particular industries to the pandemic shock.

Some studies have already made attempts to explore the COVID-19 pandemic's effects on corporate performance. One strand of this research examines the impact of COVID-19 on the stock market. The early research focused mainly on investor reaction to the pandemic. Phan and Narayan (2020) present the first index reactions to news of the pandemic. Al-Awadhi et al. (2020) report negative effects on stock returns across all companies in China. Ren et al. (2021) study equity market performance in Chinese provinces showing negative temporary reactions and a value regain after a short time. Over time, there appear studies discussing other factors that matter for stock market reaction. Ambros et al. (2021) discuss cross-country differences in stock market response to news of the pandemic with an international sample. Topcu and Gulal (2020) analyse the early response to the pandemic on emerging markets, showing an initial fall and gradual recovery, also discussing the importance of government help. Yang et al. (2022) show that traditional predictors of future stock returns are no longer valid.

Given the unprecedented nature of the COVID-19 turbulence, a rapidly growing body of national or international research has focused on the consequences for corporate operating performance and discussed company financial characteristics during market downturns. Hu and Zhang (2021) report worldwide corporate performance deterioration in return on assets, discussing both national and company factors. Kudej et al. (2021) provide evidence on the financial company characteristics and their performance during the health crisis in the Czech Republic. Zheng (2021) analyses corporate investment, profitability, financing activity, and payout policy for US companies, and reveals that they were negatively affected by the pandemic. The author also documents the positive effect of cash holdings on company performance during economic turmoil. The problem of the transmission of COVID-19 turbulence onto company liquidity is also investigated by De Vito and Gómez (2020) for an international sample selected from OECD member states, plus China. The problem of the demand for liquidity during bad times is then discussed by Acharya and Steffen (2020) or Tawiah and O'Connor Keefe (2020) for the US. Fahlenbrach et al. (2021) extend the importance of financial flexibility for company exposure to negative shock consequences in US firms.

As corporate immunity to market turbulences may be related to company specific factors, some studies discuss the relationship between company characteristics and its stock or operating performance. Ding et al. (2021) report significant differences in the reaction of stock returns depending on financial conditions in 61 world economies. Cui et al. (2021) discusses the connection between conservative reporting and stock return performance for Chinese firms. Shen et al. (2020) analyse the relationship observed in China between the pandemic and corporate performance, focusing on a firm's investment scale or sales revenue.

Our study contributes by discussing cross-industry corporate resilience during the COVID-19 health downturn. Many sectors witnessed substantial downward demand, while others seem to benefit from new opportunities and enhance their operations suddenly. Either stock or operating performance may vary across industries, as suggested in some previous studies. Guru and Das (2021) discussed cross-industry differences in uncertainty during the health crisis in India. Bretscher et al. (2020) indicate varying sensitivity of stock performance between US industries. Baek et al. (2020) finds significant changes in US stock market volatility as a response to COVID-19, indicating systematic risk variance across US sectors. Krieger et al. (2021) report on substantial dividend cuts during the pandemic period, indicating differences in dividend policies between industries. Devi et al. (2020) analyse liquidity and profitability consequences of COVID-19 in Indonesian firms, showing sectoral differences. Studies have also appeared that focus on performance analysis during the pandemic only in a single industry. An example of a single-sector work is delivered by Atayah et al. (2021) discussing profitability in logistics firms in G-20 countries. Ho et al. (2021) provide evidence on operations in Chinese freight transport companies. Fu and Shen (2020) analyse performance downturn for energy firms in China.

Increasing the market value of companies has been one of the leading topics in the area of corporate finance and value management. However, there has been no attempt made so far to empirically assess the shifts of value between sectors during the pandemic period. Some sectors are facing severe constraints and difficulties during the pandemic. At the same time, some other industries have opened up new opportunities for development. The extant literature studies performance during the pandemic period, but this study enriches the findings with a discussion on value shifts between companies and industries using a set of individual and synthetic measures that combine both the market and the operating perspective.

3. DATA AND SAMPLE DESCRIPTION

The sample for this study has been drawn from the Capital IQ Database. The research focuses on primary listings completed in Central European public equity markets. It covers non-financial public companies. The research compares financial performance between 2019 as the pre-pandemic year with

results reported for the pandemic year 2020. The raw data range from 2015 to 2020, and we observe changes for the period 2016 to 2020, giving a broader context for the issue and more comprehensive conclusions. We excluded firm-year observations with missing data. Outlier observations were eliminated using the interquartile range.

Table 1

Year-wise distribution of public companies in Central Europe

	2016	**2017**	**2018**	**2019**	**2020**
Communication Services	81	85	89	99	106
Consumer Discretionary	143	149	153	157	157
Consumer Staples	66	68	69	67	66
Energy	14	15	15	16	14
Health Care	86	85	87	94	98
Industrials	284	288	303	303	299
Information Technology	175	180	186	193	193
Materials	64	66	68	71	71
Real Estate	67	79	80	88	90
Utilities	22	24	25	27	25
Total number of companies	1 002	1 039	1 075	1 115	1 119

Source: Authors' results.

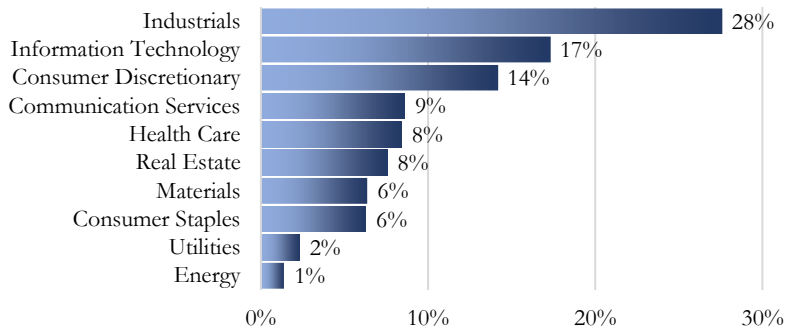

Figure 1. Industry-wise average distribution of sample firms

Source: Authors' results.

Non-financial sectors are represented by Communication Services, Consumer Discretionary, Consumer Staples, Energy, Health Care, Industrials, Information Technology, Materials, Real Estate, Utilities. Table 1 details the year-wise distribution of public companies listed in Central Europe. The average percentage number of firms during the sample period is illustrated on Figure 1. The most numerous sectors are Industrials, Information Technology and Consumer Discretionary. These three sectors together account for almost 60 per cent of total number of non-financial public companies in Central Europe.

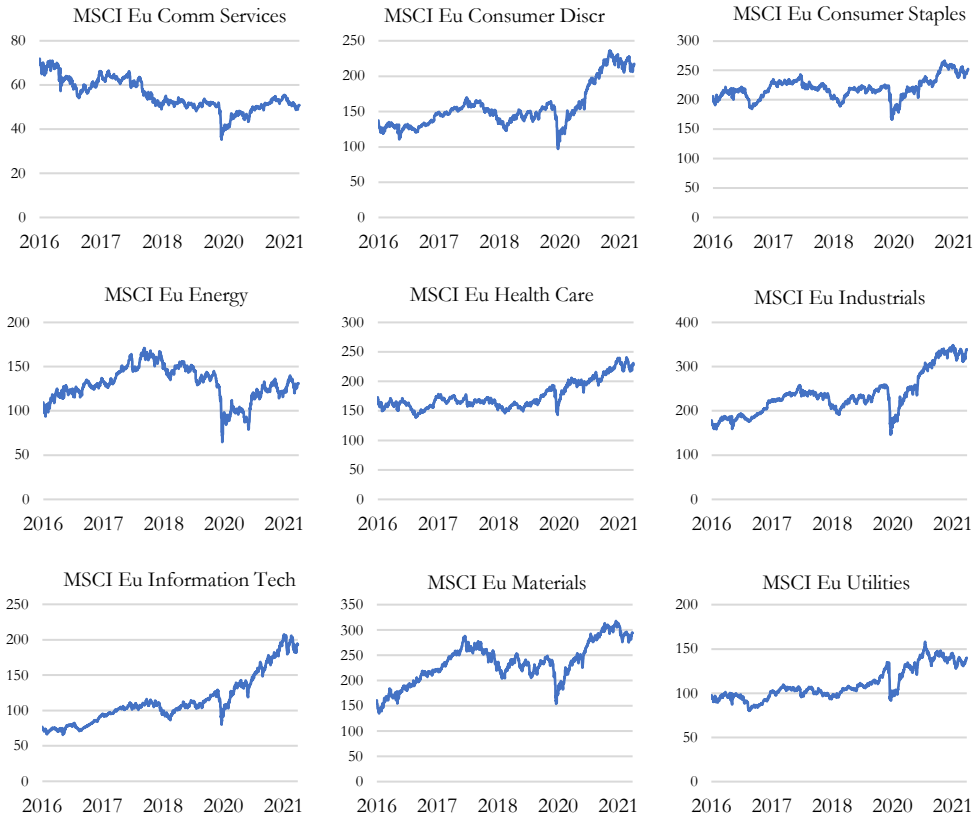

Figure 2. European industry MSCI indices

Source: Authors' results.

Table 2

Reaction and recovery of industry equity indices in the COVID-19 period

	2019 return	2020 return	1st reaction	Q2 recovery	Q3 recovery	Q4 recovery
Communication Services	0.2%	-1.1%	-13.5%	-4.0%	-5.4%	4.1%
Consumer Discretionary	25.4%	24.5%	-13.5%	0.5%	12.6%	39.9%
Consumer Staples	14.8%	8.8%	-10.7%	0.1%	5.3%	16.0%
Energy	2.6%	-7.3%	-15.5%	-13.5%	-21.3%	2.6%
Health Care	21.8%	11.0%	-10.4%	8.8%	11.1%	13.3%
Industrials	26.5%	20.5%	-14.5%	-3.3%	9.0%	30.0%
Information Technology	30.0%	28.3%	-12.3%	9.3%	18.2%	33.3%
Materials	16.7%	16.3%	-12.6%	2.2%	14.3%	31.9%
Utilities	20.4%	25.4%	-16.8%	-6.0%	-0.6%	16.4%

Source: Authors' results.

Figure 2 and Table 2 show the equity market reaction to the pandemic. They report the changes in all industry MSCI European indices. The first two columns of Table 2 detail annualized average return on MSCI European indices for the pre-pandemic and pandemic year (2019 return and 2020 return). The third column (1st reaction) presents the daily return on the first day after the announcement of the pandemic by the World Health Organization in March 2020. The last three columns report buy-and-hold returns at the end of the 2nd, 3rd, and 4th quarter of 2020 (Q2, Q3, and Q4 recovery). They show the return on the industry portfolio assuming the investment started before the pandemic announcement (the beginning of March 2020) with holding it until the end of the each of the following quarters.

The pandemic caused all major equity market indices to decline sharply in March 2020, including industry indices too, as seen in Figure 2 and Table 2. There was no industry index in 2019 which experienced negative annualized average return. However, eight out nine sector indices fell substantially in 2020 and the yearly average of returns for two of them were even negative. The Utilities sector was the only one with an increase in annualized return in 2020. For all industries the first day reaction to the pandemic announcement was definitely negative, with an average fall of about -13 per cent. The extent of the fall and the time needed to recover varied greatly among industries. Sector indices for Consumer Discretionary, Information Technology, Materials, and Industrials experienced a growth of more than 30 per cent compared to the pre-pandemic market quotation. However, some industries had barely recovered even after three quarters.

4. METHODOLOGY

The empirical observation of the process of value migration is based on several steps (Siudak, 2014; Slywotzky, 1996). The starting point is the calculation of a market value added. It is the excess of market value over invested capital for a company (MVA_i):

$$MVA_i = V_i - K_i \tag{1}$$

Where:

MVA_i - market value added

V_i - gross market value

K_i - book value of invested capital

The outlier values of V_i and K_i were eliminated using the formula based on the interquartile range. We define outlier values using the *3*IQR* rule, where *IQR* is the difference between the upper and lower quartile, i.e. Q_3-Q_1. Values lower than Q_1-*3*IQR* and values higher than Q_3+*3*IQR* are trimmed. Finally, the change in market value added (ΔMVA_i) is given as:

$$\Delta MVA_i = MVA_{i,t} - MVA_{i,t-1} \tag{2}$$

Next, we estimate the share in the market migration balance (*SMB_mkt*) as:

$$SMB\_mkt_i = \frac{\Delta MVA_i}{\left| \sum_{i=1}^{n\_mkt} \Delta MVA_i \right|} \tag{3}$$

Where:

n_{mkt} - number of companies in the market

Share in the industry migration balance (*SMB_ind*) is defined as:

$$SMB\_ind_i = \frac{\Delta MVA_i}{\left| \sum_{i=1}^{n\_ind} \Delta MVA_i \right|} \tag{4}$$

Where:

n_{ind} - number of companies in the industry

The change in MVA/K is given as:

$$\Delta \frac{MVA_i}{K_i} = \left(\frac{MVA_i}{K_i} \right)_t - \left(\frac{MVA_i}{K_i} \right)_{t-1} \tag{5}$$

The analysis of proxies defined above is the first step in the discussion on value migration processes. It gives us an initial overview of changes in market value added in public companies in Central Europe

during the pandemic in comparison to the preceding years. In the next step, the procedure of classification into development phases is applied. The multidimensional approach employed in the empirical analysis of value migration has a twofold effect. First, it results in an assessment of a three-criteria measure of development (i.e. a synthetic measure of value migration). Second, it allows us to define the stage in the lifecycle of each company and industry. The linear ordering method is adopted to observe value migration in this multidimensional approach (Helwig, 1968; Tarczyńska-Łuniewska & Tarczyński, 2006). First, three types of firm-year observations (x_{ij}) of *SMB_mkt*, *SMB_ind*, and change in MVA/K are used as stimulants. Next, they are normalized (each of the mentioned variables independently). Euclid's metric measures the distance between the analysed objects and the element constituting the anti-pattern (the lower development pole for the above characteristics of stimulants) as defined by the relation:

$$z_{ij} = \frac{x_{ij}}{\max_i\{x_{ij}\} - \min_i\{x_{ij}\}} \quad \max_i\{x_{ij}\} - \min_i\{x_{ij}\} \neq 0 \tag{6}$$

The synthetic measure of value migration (*SMVM*) involves the following weights (w_j, where $j=1,2,\ldots,m$): 25% for *SMB_mkt*, 25% for *SMB_ind*, and 50% for $\Delta MVA/K$. The synthetic measure of value migration is calculated according to:

$$SMVM_i = \sqrt{\sum_{j=1}^{m} w_j \left(z_{ij} - z_{0j}\right)^2} \tag{7}$$

Where for the anti-pattern:

$$z_{0j} = \min_i\{z_{ij}\} \tag{8}$$

Next, we calculate the absolute value of the distance between the synthetic measure of value migration for company each company (i) and the median value of *SMVM*:

$$SMVM'_i = \left|SMVM_i - Me\{SMVM_i\}\right| \tag{9}$$

The threshold value (u) is given as:

$$u = \underset{i}{Me}\{SMVM_i`\} \tag{10}$$

In the final step, each company and industry is classified into one of three development phases: inflow, outflow or stability phase according to the rules given in Table 3.

Table 3

Rules of classification into development phases

Phase	Classification rules
Stability phase	$SMVM'_i < u$
Inflow phase	$SMVM'_i \geq u$, and $SMVM_i > \underset{i}{Me}\{SMVM_i\}$
Outflow phase	$SMVM'_i \geq u$ $SMVM_i < \underset{i}{Me}\{SMVM_i\}$

Source: Authors' own based on the proposal by Slywotzky (1996) and Siudak (2014).

Next, we test differences in operating financial performance between 2019 and 2020. Non-parametric tests are applied for return on sales (*ROS*), return on equity (*ROE*), cash ratio (*LIQ*), capital expenditures to assets ($CAPEX/A$), and market value added to equity (MVA/E).

5. EMPIRICAL RESULTS AND DISCUSSION

Value migrates in the lifecycle of business models. This is because the logic of value is changing. New spaces for creating value are opening, whereas market possibilities for some companies or industries are diminishing. To illustrate the shifts in market value added between industries, consider the specification in Table 4. Table 5 reports on the industry-wise and year-wise changes in share in the industry and market migration balance.

Table 4

Change in market value added for industries and market

	2016	**2017**	**2018**	**2019**	**2020**
Communication Services	680	1 758	-1 889	783	2 595
Consumer Discretionary	1 453	2 963	-8 009	80	4 775
Consumer Staples	634	513	-1 631	333	627
Energy	730	336	-1 391	441	-186
Health Care	463	3 014	-2 598	696	6 479
Industrials	3 783	11 459	-20 397	3 949	5 331
Information Technology	1 145	11 068	-10 298	5 679	7 588
Materials	682	1 826	-4 468	1 003	1 783
Real Estate	388	622	-1 221	2 184	-677
Utilities	62	-25	184	1 220	753
Total for Central Europe	10 020	33 534	-51 720	16 368	29 067
Observations	1 002	1 039	1 075	1 115	1 119

Source: Authors' results.

Table 5

Share in the migration balance

	2016	**2017**	**2018**	**2019**	**2020**
Communication Services	40%	61%	-64%	48%	63%
Consumer Discretionary	36%	55%	-91%	2%	52%
Consumer Staples	49%	20%	-62%	22%	36%
Energy	61%	28%	-90%	25%	-25%
Health Care	12%	66%	-68%	18%	83%
Industrials	36%	66%	-89%	34%	46%
Information Technology	20%	85%	-94%	75%	74%
Materials	25%	57%	-90%	30%	61%
Real Estate	38%	31%	-55%	64%	-25%
Utilities	16%	-9%	26%	88%	55%
Total for Central Europe	31%	64%	-84%	40%	56%
Observations	1 002	1 039	1 075	1 115	1 119

Source: Authors' results.

Table 4 and Table 5 reports that Information Technology experienced the greatest positive market value added and share in migration balance, both in 2019 and 2020. The results were similar, although not so spectacular for Industrials. At the same time, Consumer Discretionary and Health Care industries substantially attracted value in 2020 in comparison to their weak results in 2019, as measured with ΔMVA_i and *SMB_ind*. Quite the opposite changes were observed for Real Estate, Utilities or Energy, as value was flowing out of these industries in 2020 in comparison to the previous year.

Table 6

Synthetic measure of value migration

	2016	2017	2018	2019	2020
Communication Services	0.5823	0.4421	0.5031	0.3156	0.3304
Consumer Discretionary	0.5818	0.4424	0.4963	0.3170	0.3349
Consumer Staples	0.5827	0.4418	0.5019	0.3159	0.3281
Energy	0.5951	0.4473	0.4800	0.3269	0.3131
Health Care	0.5838	0.4441	0.5009	0.3162	0.3401
Industrials	0.5833	0.4449	0.4950	0.3173	0.3280
Information Technology	0.5796	0.4519	0.4959	0.3223	0.3329
Materials	0.5834	0.4438	0.4925	0.3185	0.3311
Real Estate	0.5817	0.4403	0.5043	0.3205	0.3205
Utilities	0.5889	0.4356	0.5343	0.3271	0.3365
Observations	1 002	1 039	1 075	1 115	1 119

Source: Authors' results.

Table 7

Phases of development

	2016	2017	2018	2019	2020
Communication Services	Stability	Stability	Inflow	Outflow	Stability
Consumer Discretionary	Outflow	Stability	Stability	Stability	Inflow
Consumer Staples	Stability	Stability	Stability	Stability	Stability
Energy	Inflow	Inflow	Outflow	Inflow	Outflow
Health Care	Stability	Stability	Stability	Stability	Inflow
Industrials	Stability	Inflow	Stability	Stability	Stability
Information Technology	Outflow	Inflow	Stability	Inflow	Stability
Materials	Stability	Stability	Outflow	Stability	Stability
Real Estate	Outflow	Outflow	Inflow	Inflow	Outflow
Utilities	Inflow	Outflow	Inflow	Inflow	Inflow

Source: Authors' results.

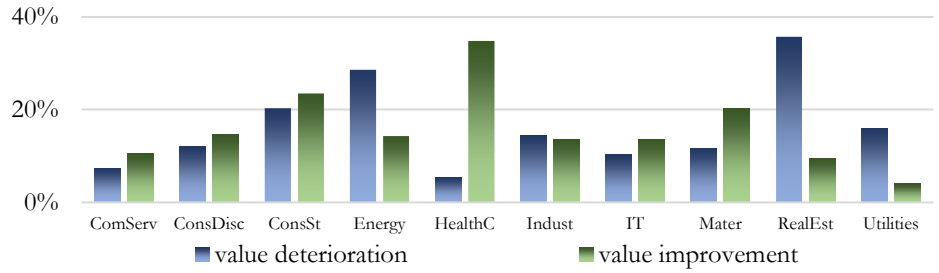

Figure 3. Value changes across industries before and during pandemic

Source: Authors' results.

Next, the synthetic proxy of value migration and classification of sectors according to the corporate life cycle for Central European companies is delivered. The results are detailed in Table 6 where the estimates of the synthetic measure of value migration are detailed. Table 7 reports the classification of each industry into one of the development phases. A company or industry is classified in the value inflow phase when it captures value from other firms or industries. In the stability phase a competitive equilibrium is established. During the value outflow phase company or industry growth diminishes or even stops. Apart from natural changes observed between industries, sudden turmoil in development phases was observed

during the pandemic year 2020. Figure 3 illustrates the percentage of Central European companies that experience value deterioration or value improvement between 2019 and 2020.

Table 8

Tests of operating performance differences between 2019 and 2020

Period	ROS		ROE		LIQ		CAPEX/A		MVA/E	
Panel A: Communication Services										
2019	6.9%	***	3.0%	**	0.20	***	-2.1%	***	63.2%	***
2020	8.0%	***	6.2%	***	0.32	***	-1.4%	***	91.3%	***
diff	1.1%		3.2%		0.12	*	0.7%		28.1%	**
Panel B: Consumer Discretionary										
2019	3.8%	***	6.4%	***	0.18	***	-2.6%	***	19.9%	***
2020	2.9%		4.0%		0.27	***	-1.8%	***	56.9%	***
diff	-0.9%	*	-2.4%		0.08	**	0.8%	**	36.9%	***
Panel C: Consumer Staples										
2019	3.3%	***	5.6%	***	0.11	***	-3.7%	***	7.7%	***
2020	4.0%	***	6.5%	**	0.15	***	-3.2%	***	28.9%	***
diff	0.7%		0.9%		0.04		0.5%		21.1%	
Panel D: Energy										
2019	6.4%	***	4.0%		0.27	***	-3.2%	***	-8.9%	
2020	1.4%		-0.6%		0.24	***	-3.0%	***	-33.8%	
diff	-5.0%		-4.6%		-0.03		0.2%		-24.9%	
Panel E: Health Care										
2019	6.5%	***	3.8%		0.29	***	-1.9%	***	103.7%	***
2020	10.4%	***	8.3%	**	0.38	***	-1.7%	***	180.1%	***
diff	3.9%		4.5%		0.10	**	0.2%		76.4%	*
Panel F: Industrials										
2019	4.5%	***	8.2%	***	0.20	***	-2.6%	***	16.3%	***
2020	3.4%	***	5.8%	***	0.31	***	-2.3%	***	32.7%	***
diff	-1.1%	***	-2.4%	***	0.11	***	0.3%		16.4%	***
Panel G: Information Technology										
2019	4.5%	***	7.0%	***	0.35	***	-1.5%	***	81.8%	***
2020	5.2%	***	7.6%	***	0.52	***	-1.3%	***	127.1%	***
diff	0.6%		0.6%		0.17	***	0.2%	**	45.3%	***
Panel H: Materials										
2019	6.1%	***	7.1%	***	0.22	***	-5.4%	***	3.2%	***
2020	6.0%	***	7.1%	**	0.28	***	-4.1%	***	21.2%	***
diff	-0.1%		0.1%		0.05	**	1.3%	*	18.0%	
Panel I: Real Estate										
2019	20.8%	***	7.7%	***	0.24	***	-0.2%	***	-0.2%	***
2020	20.5%	***	6.7%	***	0.28	***	-0.2%	***	-1.9%	
diff	-0.3%		-1.0%		0.04		0.0%		-1.7%	
Panel J: Utilities										
2019	7.3%	***	4.8%	**	0.23	***	-3.4%	***	21.3%	**
2020	9.0%	***	5.7%	***	0.29	***	-4.5%	***	30.0%	*
diff	1.6%		0.9%		0.05		-1.1%		8.7%	

Source: Authors' results.

The synthetic measure of value migration only to some extent confirms the changes observed on the basis of ΔMVA_i and *SMB_ind*. It indicates that the most negative changes were observed in the Energy and Real Estate sectors which moved from inflow to outflow phase in 2019 and 2020. Consumer Staples, Industrials, Materials and Utilities kept a competitive equilibrium. The digital sector moved to the stability phase in 2020, which could be connected with the profound value increase in the previous year. The Energy and the Real Estate sectors were affected by a devastating blow to their business models.

The results of tests for differences in operating financial performance between 2019 and 2020 are delivered in Table 8. It reports median values for return on sales (*ROS*), return on equity (*ROE*), cash ratio (*LIQ*), capital expenditures scaled by assets ($CAPEX/A$), and market value added to equity (MVA/E). The pandemic was connected with a greater willingness of companies to accumulate the most liquid assets to be able to pay for their current liabilities. The changes in the level of the cash ratio between the pre-pandemic year and 2020 were significant for the majority of industries. At the same time, relative capital expenditures declined in all sectors except for Utilities. However, the differences between 2019 and 2020 were significant for Consumer Discretionary, Information Technology and Materials. The most spectacular increase in market value added scaled by equity was observed for Health Care and Information Technology, but positive changes were reported also for Consumer Discretionary, Communication Services and Industrials. Consumer Discretionary and Industrials experienced a significant drop in profitability in 2020 as compared to 2019. Other industries did not experience significant unfavourable changes in operating returns.

CONCLUSION

The COVID-19 pandemic has evoked changes that are unlike previous economic and social turbulences in recent decades in terms of nature and magnitude. The transmission of the health crisis to economic turbulence happened very quickly and resulted in substantial turmoil of a global nature. The effects of the pandemic like national lockdowns, closed airspace and borders, interruptions in supply chains, sudden changes of consumption patterns and market demand, seriously affected all industries. In this paper, we aimed to provide insight into the empirical assessment of the market process of value migration across industries, as some of them may have been suffering from the financial turmoil whereas it can be a time of opening new spaces for creating value for other business models.

The study fills a gap in the literature by adding evidence on value migration for public nonfinancial companies in the pandemic year in relation to preceding period. This research is the first endeavor at conducting an empirical study to discuss the impact of the COVID-19 pandemic on the performance of Central European companies in a multidimensional empirical approach. The cross-country nature of the research helps to better understand the changes induced by the pandemic. This study contributes to the existing literature in several ways. The main contribution is that it provides empirical evidence on the shifts in relative strength of particular industries during market downturns.

More specifically, our study reports on the pandemic implications for corporate financial market performance. We observe substantial shifts in market value added between industries during 2020. As the difficulties faced by particular industries were not equal, the outbreak of COVID-19 was an earthquake for some sectors, while it increased growth opportunities for other industries. There were businesses that halted their activities during the health turmoil, whereas other industries seemed to get a positive boost and grew in strength. The downturn situation resulted also in significant changes in operating performance between 2019 and 2020. The most substantial differences were revealed in the area of liquidity and strategic plans. First, we observed relatively higher cash stocks for most sectors. Second, many industries implemented cuts on investment activities where there was uncertainty about future cash flows.

The research based on the international European sample reveals changes that allow us to better understand the financial background of the processes taking place in the lifecycle of business models during financial turmoil. Thus, it helps to prepare better for other disruptive turbulences that may also affect corporate competitive advantage in the future. During periods of crisis, companies should especially focus on thinking strategically about possibilities for adaptation when markets suddenly evolve in a direction that is unforeseeable. It is vital to prepare for further volatility and risk with a fresh eye. Other business models can learn from the business activities of successful ones during the uncertainty period.

These findings also provide opportunities for future studies. A possible research direction may be to discuss drivers of value migration. Thus, this challenging direction of research could be focused on financial factors explaining the differences between industry strengths and weaknesses in uncertain times. Such results would broaden this research and give additional insights into the problem of corporate value management from the financial perspective. This could also contribute to an issue that the transition from build-to-destroy or destroy-to-build value migration phases may be accompanied by a significant change in value drivers.

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