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Development of Risk Management Mechanism and the System of Risk Metrics to Evaluate and Enhance the Long-Term Orientation of the Strategies of Non-Financial Companies

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Abstract: Companies that are performing innovation-focused strategies or experiencing digital transformation are exposed to significant long-term risks. The untimely and inefficient management of these risks leads to the destruction of the company's value and calls into question its survival. This is often underpinned by companies following strategic management with a short-term horizon. Such "strategic myopia" prevents timely identification and treatment of strategic risks and destroys value due to physical and intellectual capital investment restrictions. However, the existing mechanisms of setting up risk management architecture neither addresses the lengths of the horizon and the alignment of the horizon with the strategic objectives, state of the environment and stakeholder expectations nor provides the tools for evaluating the horizon of the firm's strategy. Moreover, existing systems of evaluating short-termism rely only on financial and governance metrics and do not address environmental and social factors. We closed these gaps and developed a strategic risk-controlling mechanisms to set up the risk management architecture that expanded "conventional" risk management analysis and addressed the "strategic myopia". We also worked out the critical tool of the mechanism—the system of key risk metrics (SKRI) aimed at assessing the degree of a company's following of long-term strategic orientation. Finally, we tested it on a sample of Russian non-financial companies. Testing results revealed a strong and positive correlation between the management's decision to follow a long-term strategic focus and the growth of companies' long-term value (measured by economic value added (EVA)). SKRI can be utilized in strategic risk controlling to assess the company's propensity to follow a short-term horizon, evaluate its ability to maintain sustainable value creation, and develop recommendations to stakeholders to expand its strategic focus.

Keywords: strategic risk controlling; short-termism; strategic horizon; integrated risk management; digital transformation

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1. Introduction

Currently, most industrial companies globally are following the digital transformation path and making significant efforts to increase their innovation capacity (Kozhina and Kudryavtseva 2021). This is underpinned by the Industry 4.0 industrial revolution, which implemented at least four foundational technologies applied along the firms' value chain (Birkel et al. 2019; Agrawal et al. 2020; Zaytsev et al. 2020). However, all these innovations come along with significant strategic risks, occurring in several dimensions: economic, ecological, social, governance and compliance, technical and others. Untimely, inefficient management of these risks leads to the achievement of the company's strategic goals, the destruction of its value for shareholders and ultimately raises the question of the organization's long-term sustainability (Pishalkina and Suloeva 2020).

We argue that one of the core causes of the inefficiency of risk management practices in organizations is the absence of a well-elaborated strategy focusing on sustainable value creation for all stakeholders (Tang and Greenwald 2016). Risks are usually tied to strategic goals and then cascaded to the operational and tactical goals of the company. Research shows that many public companies follow strategic management practices with a short-term horizon. In such a setting, management sticks to near-term profit maximization at the cost of value creation. Such behavior is called "short-termism" (Keum 2020). It is viewed as a severe obstacle because it (1) restricts risk management practices only to financial risks; (2) prevents the timely identification of new and emerging threats; (3) overlooks the external dependencies of the organization; (4) leads to untimely and inefficient risk treatment (Pishalkina and Suloeva 2020; Birkel et al. 2019).

Moreover, top management is prone to severe cognitive biases in decision-making, overlooking long-term "blind spots" and overconfidence (Tang and Greenwald 2016). All these result in the realization of material strategic risks and, consequently, lead to unintended consequences for the long-term value creation capability of the firm (Nikolov 2018). Problems caused by short-termism are exacerbated in emerging markets due to developing corporate governance and managerial practices, the immature nature of financial markets and ownership concentration. To overcome "strategic myopia", one of the key tasks of strategic risk controlling is to fulfill the detailed analysis of the company's strategy to access its time horizon with the system of metrics and to develop recommendations to adjust strategic focus if necessary (Grishunin et al. 2018).

The literature review indicated that companies' myopic behavior have been extensively studied in marketing, accounting, strategic management and finance. However, the literature focused either on causes and implications of short-termism or on developing particular managerial, regulatory and institutional actions to prevent short-termism. Very few studies were devoted to developing indicators that could help to distinguish between short-term focused and long-term focused firms. K. Tang and C. Greenwald as a reason of absence, a reliable horizon indicator, cited R. Martin in the Harvard Business Review: "There is no control group, we cannot compare the performance of corporate America with short-termism to that of corporate America without short-termism" (Tang and Greenwald 2016, p. 12).

Nevertheless, we consider the absence of such indicator as a significant research gap. The best solution to the problem, in our opinion, is to develop not an absolute indicator that measures the degree of short-termism of the company but a relative horizon index. Such benchmark should assess the probability that the company is strategically short-sighted and reflects the relative ordering of the risk of short-termism. Another research gap is that the majority of studies are performed for companies from developed markets. Very few, if any papers, were devoted to assessing short-termism of companies working in an emerging market. Yet, another research gap is that horizon indices in the existing papers are based on financial ratios but ignored non-financial metrics. Lastly, the literature does not provide holistic risk management mechanisms aimed at reducing short-termism.

Thus, the objectives of our paper were to develop the mechanism of setting up risk management architecture; construct the system of key risk indicators (SKRI) to evaluate the horizon of corporate strategies and find the relationship between "strategic myopia" and the ability of the firm to deliver value for all stakeholders. We also performed the empirical study of SKRI on a sample of 50 Russian non-financial companies from 2014 to 2020.

Our study contribution to the literature is four folded. Firstly, the paper provides the holistic mechanism of setting risk management architecture and ensuring the alignment of a company's objectives with stakeholders' expectations and a strategic horizon. Secondly, we developed SKRI, which we expanded to non-financial metrics, including environmental, social and governance (ESG) factors. Finally, we tested the relationship between "long-termism" and the ability of the firm to deliver sustainable economic value to the stakeholders in a sample of major Russian non-financial public companies. From a

practical perspective, the developed mechanism will help risk controllers align the strategic horizon and objectives with stakeholders' expectations.

2. Results

2.1. Literature Review

In academic literature, the problem of short-termism was studied in various domains, including management, strategy, finance, accounting and marketing.

Strategic literature distinguishes between short-termism and managerial (strategic) myopia (Marginson and Mcaulay 2008). In such a setting, the latter refers to "...cognitive limitations about the temporal dimensions of decision making ..." (Miller 2002). Such practices may result in blind spots, overlooking the high-impact strategic risks and underassessment of consequences of short-term actions in the long term. Such methods are suboptimal in the long term but do not necessarily result in the deterioration of the company's value. A completely different picture was seen for short-termism, a "...managerial preference for actions in the near term that have detrimental consequences for the long term..." (Marginson and Mcaulay 2008). Thus, short-termism can be viewed "...not just terms of the prioritization of the short term, but as actions taken in the short term which damage the long-term effectiveness of the firm and hence its value" (Marginson et al. 2010). Short-termism coupled with strategic myopia results in long-term value destruction, due to underinvesting and overlooking strategic risks (Nikolov 2018). It is a pervasive phenomenon that is spread throughout the entire organizational structure, from top management to individual employees. Various sources of short-termism were studied, such as stock market analyst pressure, short-term-oriented key performance indicator systems, the risk-taking behavior of management, weak risk management practices, overconfidence in risk appetite setting, etc., (Nikolov 2018). For example, Marginson (Marginson et al. 2010) found that an imbalance between financial and non-financial metrics in key performance indicators favoring non-financial metrics leads to short-termism. The gap in strategic literature is that it does not provide the tools for measuring short-termism.

Financial literature contribution into analysis of short-termism is two-folded. One group of research studies the sustainability of the long-term growth rate of stocks and predictors of such growth, such as multiples, or indicators of operating performance (sales, earnings, etc.). Chan et al. (2003) showed that very few companies maintained stable growth rates. This is because the realization of long-term risks, for example growing competitive pressure, ultimately corrects excessively high or excessively low profitability growth. On the other hand, high and immediate growth in profit could be the way to bankruptcy. They suggested to concentrate on the following issues in strategic analysis: (1) the sign and the value of spread between firm's return on investments and cost of capital; (2) the ability of the firm to maintain that positive spread; and (3) the probability that the company could restore the sustainable positive spread after it had turned negative.

Another group of researchers focused on management incentives for short-termism due to financial market pressure (Nikolov 2018; Allee et al. 2020; Gonzalez and André 2014; Pogach 2018; Ikenberry et al. 1995). These incentives are explained by (1) external drivers (e.g., the short-term orientation of stakeholders' groups, pressure from financial market participants and investors, high perceived risk of the economic environment); (2) internal drivers (such as the structure of executive compensation, efficiency of risk management, performance management culture) and (3) individual drivers (e.g., personal characteristics of CEO and board members, their risk appetite and overconfidence). Cohn et al. (2020) studied the agency problem from the side of managers' desires to influence decision making, regarding the activities of the firm. Managers are interested in the growth of the company's shares so they have to meet market expectations—to make statements and show the values that are desired by current and future shareholders. In a desire to keep up with customer satisfaction, managers refused to act in a way that could lead to long-term growth in a company's value or did not agree to implement less elaborated but quick-return projects. However, the market reacted less positively to announcements of new projects when it

came to short-termism. The disadvantage of the paper is limited data on specific projects of companies, as this information is rarely disclosed to a sufficient level for analysis.

Accounting literature proved that one of the core causes of short-termism is investors' and analysts' reliance on short-term-oriented accounting ratios from financial reporting. These causes incentivize management to use accounting tricks to meet certain earning thresholds (such as the earnings-per-share (EPS) ratio) in the expenses of long-term value creation (Roychowdhury 2006). These manipulations of accounting ratios usually come from decreasing discretionary expenses, excessive use of accruals, boosting sales, over-production aimed at reducing the cost of goods sold and increasing working capital, capitalization of costs, or altering the timing of recognizing assets and liabilities. The gap in accounting literature is its focus on accounting-based metrics to evaluate firms' myopic behavior, even though these metrics are short-sighted. This is because the metrics are short-term oriented and do not measure significant parts of firm operations, such as intellectual capital, sustainability, and strategic and investment decisions.

The literature on sustainable development (Gong and Ho 2021; Maglio et al. 2020) argues that corporate social responsibility mitigates short-termism. Socially responsible firms engage less in accounting manipulation activities. It also suggests that the issuance of non-financial reporting reduces information asymmetry and effectively constrains managerial short-termism. Unfortunately, the gaps in this literature domain are almost the same—researchers do not provide tools to measure short-termism.

The literature on risk management and short-termism stresses that improper risk management fuels short-termism and vice versa. Hynek et al. (2009) showed that underdeveloped risk management and agency problems could postpone investments in advanced technologies, especially at times of elevated risks and economic pressure. Lefley and Sarkis (1997) argued that the difficulties in quantifying benefits associated with advanced manufacturing technologies and myopic treatment of project risks might result in underinvestment. Conversely, Krause and Tse (2016), based on the analysis of 65 recent theoretical and empirical studies on risk management, found that implementation of sound enterprise risk management practices increased firm value and returns reduced return and cash flow volatility. The gap in the literature is that it does not provide holistic risk management mechanisms aimed at reducing short-termism.

Practical studies are best represented by McKinsey (Barton et al. 2017). McKinsey developed the 5-factor Corporate Horizon Index (CHI), based on a survey of 615 companies' financial statements over the 15 years starting from 2000. The limitation of CHI is in its narrow focus only on financial metrics. It overlooks many issues mentioned in academic literature related to management, governance, and organizational and sustainability factors. Ernst and Young (Kędzior and Rozkrut 2014) studied the causes of short-termism and showed a strong positive relationship between investment spending and management stability and the duration of CEO service. No dependencies were found between the companies' performance and such factors as "the CEO insider effect" and the long-term orientation of CEO compensation schemes. Conversely, the impact of CEO experience on performance was significant only during the first years of CEO tenure. Unlike the research of McKinsey, this study did not provide the aggregate measure of a company's long-term strategic focus.

Other practical studies suggested refocusing the risk management function to the long-term horizon from operational and compliance hazards (DeLoach 2018; Tang and Greenwald 2016). A company must (1) "self-organize" instead of relying on command-and-control; (2) "recombine" best practices from diverse sources; (3) "sense and respond" to changing conditions; (4) "seed, select and amplify" a multitude of innovations; and (4) constantly "destabilize" itself (Meyer and Davis 2003; Funston and Wagner 2010). This can be done by adjusting the risk assessment process. Adjustments to the enterprise risk management system shall include the evaluation of critical strategic assumptions, and the usage of forward-looking lead metrics to complement the more traditional retrospective lag metric. They also include elimination of short-term biases in management compensation,

development of risk, and value creation culture and usage of ESG metrics. Risk assessment processes should be refocused on critical enterprise risks that can impair the organization's reputation, brand image, and enterprise value for up to 10 years and recognize emerging risks looming on that horizon. The limitation of practical studies is the absence of holistic risk management mechanisms that can help diagnose and alleviate short-termism.

2.2. Research Methodology

We constructed our system of key risk metrics (SKRI) by synthesis of practical and academic literature. We used the strategic financial factors developed by McKinsey (Barton et al. 2017) and supplemented them with financial, non-financial, and sustainability metrics, which, according to the literature, had demonstrated significant predictive power in evaluating firms' short-term strategic focus. Then, we checked a set of factors for correlation between them. We calculated the Pearson pair correlation coefficient between the indicators in the set and excluded indicators with a correlation greater than 0.7. The list of metrics is presented in Table 1.

Table 1. Key indicators of short-termism.

Factor	Way of Calculation/Evaluation	Rationale	The Feature of Far-Sighted Firm	Relationship between SKRI and Factor
Strategic financial metrics				
Investments	$\frac{\text{Capital expenditures}_t}{\text{Depreciation}_t}$ t—reporting period (year)	Long-term firms consistently invest much more than require sustaining current operations	>1	Direct
Earning quality	$\frac{\text{Net income}_t - \text{Free cash flow}_t}{\text{Revenue}_t}$	Long-term firms will generate earnings that reflect cash flow and not accounting decisions	~0	Inverse
Margin growth	Growth rate of net income—Growth rate of revenue	Long-term firm grow net income by growth in sales rather than by manipulation by expenses	~0	Inverse
Earning-per-share (EPS) growth	Growth rate of EPS_t-Growth rate of net income_t	Long-term firms do not artificially boost EPS (e.g., by share buyback) but focus on fundamentals of value creation	~0 or negative	Inverse
Corporate governance				
Quality of auditor	The place of firm's auditor in ranking of audit companies, published by Russian RAEX agency	Long-term firms use reputable auditors as they do not need to manipulate accounting records	Top places in the ranking	Direct
Quality of corporate governance	Percentage of compliance with corporate governance requirements (Corporate governance code of Central bank of Russia) according to the self-assessment of companies	Corporate governance systems of long-term firms comply to regulatory requirements	~100%	Direct
Formalization of company's strategy	The presence of a formalized strategy and financial targets for the period of more than 2 years. The strategic goals correspond to the scale of business	Long-term firms disclose their strategy and financial targets to investors. The strategic goals correspond to the scale of business	Compliance to the statement	Direct
Transparency of ownership	The composition of the ultimate beneficiaries is fully disclosed; the ownership structure is transparent to investors	Long-term firms fully disclose the ownership structure of the firm	Compliance to the statement	Direct
Susceptibility to accounting manipulations				
Days in inventory growth (DII)	$\frac{\frac{\text{Inventory}_t}{\text{Direct Costs}_t}}{\frac{\text{Inventory}_{t-1}}{\text{Direct Costs}_{t-1}}}$	Long-term firms will maintain inventory level consistent to shipment to customers (reflected in direct cost)	~1	Inverse
Days in accounts receivable growth (DSRI)	$\frac{\frac{\text{Receivables}_t}{\text{Sales}_t}}{\frac{\text{Receivables}_{t-1}}{\text{Sales}_{t-1}}}$	Long-term firms will maintain accounts receivable level consistent to sales	~1	Inverse
Asset quality index (AQI)	$1 - \left(\frac{\frac{\text{CA}_t + \text{Net PPE}_t}{\text{TA}_t}}{\frac{\text{CA}_{t-1} + \text{Net PPE}_{t-1}}{\text{TA}_{t-1}}} \right)$ CA—current assets Net PPE—residual value of property, plant, and equipment TA—total assets of the firm	Long-term firms consistently maintain stable ratio of long-term assets other than PPE and do not use other long-term assets as a source of cost deferral	~0 or negative	Inverse

Table 1. *Cont.*

Factor	Way of Calculation/Evaluation	Rationale	The Feature of Far-Sighted Firm	Relationship between SKRI and Factor
		Sustainable financial policy		
Share of permanent capital	$\frac{\text{Long}-\text{term debt}_t+\text{Equity}_t}{\text{Total assets}_t}$	Long-term firms finance growth in assets by long-term (permanent) capital	Close to 1	Direct
Retained cash flow margin	$\frac{\text{Retained cash flow (RCF)}_t}{\text{Revenue}_t}$	Long-term firms consistently retain sufficient cash for future development after liability and dividend payments	Above market or industry peers	Direct
		Environmental issues		
Formalization of environmental management system	The presence of (1) ISO 14001 certified system of environmental management; (2) existence of strategy or policy of environmental protection; (3) existence realization of ecological requirements to suppliers and buyers; (4) realization of environmental educational program for stakeholders, society, and employees; and (5) serious ecological incidents and accidents in the last 5 years	Long-term firms maintain and constantly improve environmental management system, which covers the entire supply chain. Realization of this system helped to reduce the number of ecological incidents and accidents	Compliance to the statement (maximum 5 points)	Direct
Environmental impact assessment	Reduction in unit-based emission in air, water, and soil; recycling of packaging; and realization of program aimed in biodiversity	Long-term firms perform efforts to reduce emissions, recycle of packaging and performing programs to sustain biodiversity	Maximum of 5 points	Direct
Climate change actions	Existence of environmental impact reduction/climate change adaptation programs and participation in international voluntary initiatives in the field of sustainable development/combating climate change/voluntary certification	Long-term firms develop and perform environmental impact reduction and climate change adaptation programs	Maximum of 3 points	Direct
Usage of resources	Reduction in unit-based water consumption and energy intensity consumptions	Long-term firms develop and perform programs to reduce per unit consumptions of water and energy	Maximum 2 points	Direct
		Social investments and inclusive culture		
Contribution to society	Realization of (1) social investments in regions of presence; (2) policies of interactions with local communities; (3) sustainable charity programs	Long-term firms develop and realize policies and efforts to contribute to society and local communities	Maximum 3 points	Direct
Human capital	(1) Reduction in unit-based injuries and accidents at work; (2) availability of continuous training and employee development programs; (3) providing a wide range of programs and activities for social support of employees	Long-term firms invest in employees' well-being and maintain zero tolerance policies to injuries at work	Maximum 3 points	Direct
Inclusive work environment	Existence of (1) feedback mechanism for employees; (2) employment programs for persons with disabilities; (3) gender balance practices (including management); (4) requirements for suppliers/contractors in the field of human rights/ethics of doing business	Long-term firms create work environment, which foster feedback, inclusive culture, gender balance, and working with responsible partners	Maximum 4 points	Direct

Construction of SKRI included the following steps:

1. Calculate the individual metrics from Table 1 for each year of observation, t.
2. In each year of observation and each individual metric we sort the firms from the lowest to the highest value. Then, we split the sorted list into the deciles. Finally, depending on relationship between HI and the factor, we assigned each firm the category from 1 to 10 for the particular factor.
3. For each firm and each individual metric, we calculated the average score across the years of observations.
4. Finally, we constructed the SKRI. Given the absence of relative benchmarks we weighted each of the factors equally. Thus, our SKRI index relied on ordinal ranking of firms on each metric (relative to firms in the sample) to form a composite score for each company in the sample across the observed time interval.

$$\text{SKRI} = \frac{\sum_{i=1}^{20} FS_i}{20} \quad (1)$$

where FS_i is the score of i-th factor across years of observations

5. All companies in the sample were classified as "short-sighted" or "far-sighted", based on whether their individual SKRI value were below or above the median value of SKRI across the whole set of companies. Finally, we constructed the ranking of "long-term strategic focus" (LTSF), which shows the relative degree of long termism of each company (Table 2).

Table 2. Ranking of "strategic myopia" of the firm (LTSF).

LTSF Level	Group Name	Definition of the Group
3	Foresight company	SKRI > UT UB = M + 0.5 × (max(SKRI) − M) M—median of SKRI UB—upper bound
2	Far-sighted company	M < SKRI ≤ UB
1	Myopic company	LB < SKRI ≤ M LB = M − 0.5 × (M − min(SKRI)) LB—lower bound
0	Blind company	SKRI ≤ LB

Our goal was to prove the hypothesis that there is a positive relationship between LTSF and multi-period growth of firms' economic profit. This also corresponds with conclusions of (Barton et al. 2017) that long-term-oriented firms demonstrate above average growth in economic profit over time in comparison to short-term-oriented firms. We applied economic value added (EVA) as a measure of company's ability to create sustainable value for stakeholders (Ivashkovskaya and Kukina 2009; Worthington and West 2001).

$$\mathrm{EVA_t} = \mathrm{NOPAT_t} - (\mathrm{TA_t} - \mathrm{CL_t}) \times \mathrm{WACC_t} \quad (2)$$

To measure the average of multi-period average growth ratio of economic profit for n-years of observations:

$$\mathrm{EVA_{growth}} = \frac{\frac{(\mathrm{EVA_n} - \mathrm{EVA_1})}{\mathrm{EVA_n}}}{\mathrm{n}} * 100\% \quad (3)$$

2.3. The Risk Controlling Mechanism

Strategic risk controlling (SRC) is a holistic, integrated, technology-enabled and continuous process for managing a diverse set of long-term risks across the whole value chain of an organization. Its objective is to ensure the sustainable growth of the company's value on the long horizon for all stakeholders of the organization. The value growth is enabled via achieving the balances between risk, return, and cost of capital; proper treatment of risks influencing creation and maintenance of competitive advantage; continuous focus on new and emerging risks; and addressing sustainable resilience of operations. Key benefits of SRC are (1) optimization of the long-term value of the company; (2) coordination of risk management activities across the organizational silos; (3) integration of risk management into strategic decision making; (4) automation of risk communication, monitoring, and reporting; and (5) expanding the risk management both outside the firm's boundaries and financial risks (Grishunin et al. 2018). In the paper, we developed the mechanism of the initial stage of SRC—setting up the strategic risk management architecture. The block diagram of the mechanism is presented in Figure 1.

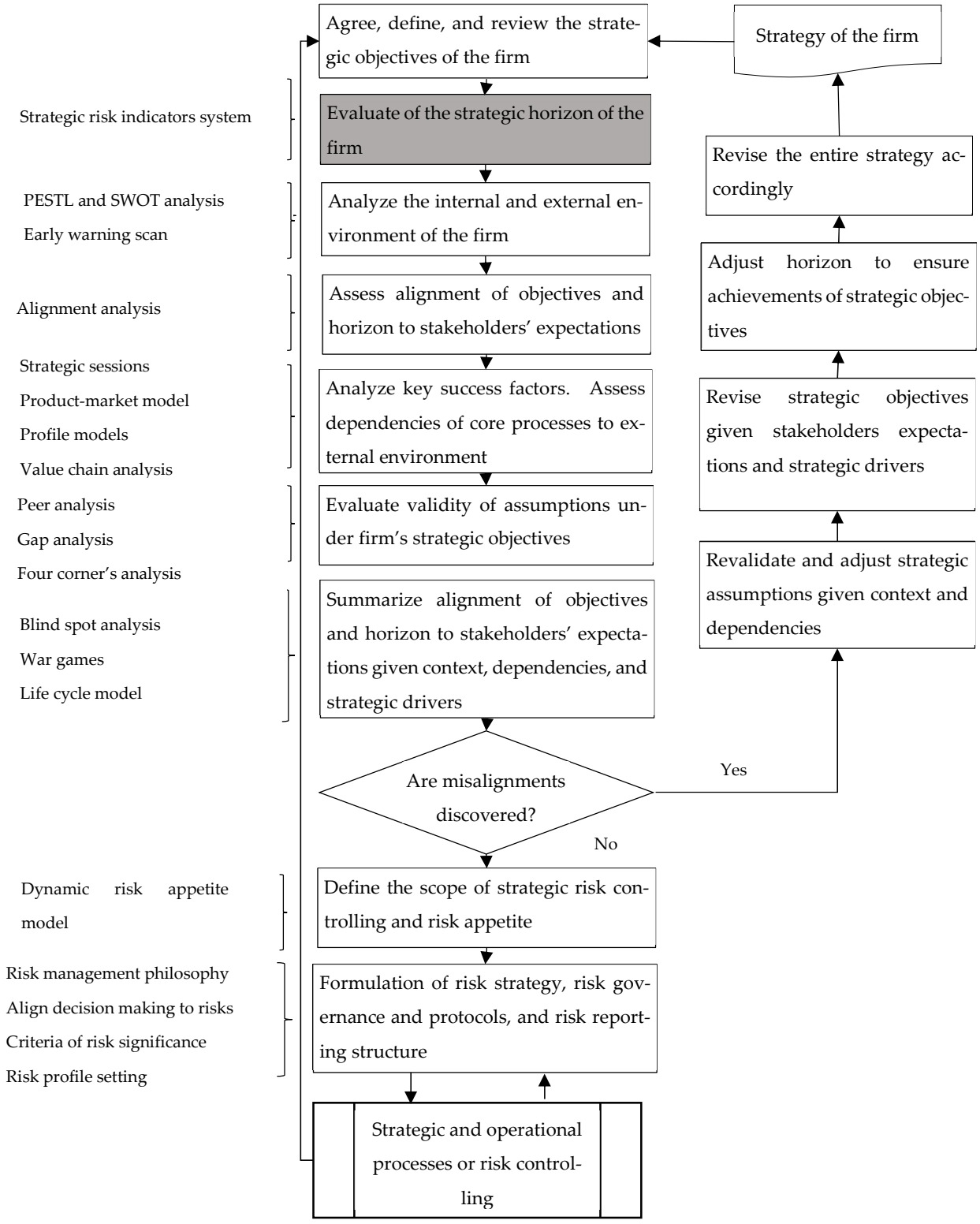


Figure 1. The mechanism of setting up the strategic management architecture. Source: developed by authors.

In the first phase of the mechanism, the company's management and board should agree on and define the firm's strategic objectives. Then, the past company's performance and the company's strategic projections are tested for long-term orientation with our SKRI system. Next, the resulting SKRI index is benchmarked with the industry average and the

key competitors. Finally, the analysis is performed to evaluate if the strategic goals are achievable given the degree of the company's strategic long-termism.

In the second stage of the mechanism, the company evaluates its internal and external environment, stakeholders' goals and expectations, and dependencies across the value chain. First, an analysis of the environment is performed with PESTLE and SWOT analysis (Hopkin 2017). The time duration of the strategic cycle is considered in this analysis. The analysis tools of critical success factors can also be applied to clarify the risk areas (Funston and Wagner 2010; Horvath & Partners 2004). Next, to evaluate the validity of assumptions under a firm's strategic objectives, other tools, such as Kaplan and Norton's balanced scorecard, Porter's five forces model, blind-spot analysis, life cycle model, or war gapes can be applied (Funston and Wagner 2010). Fuzzy models can increase the accuracy of the tools and methods (Gresko et al. 2019). The ultimate goal of the second stage is to summarize the alignment of objectives and horizon to stakeholders' expectations given context, dependencies, and strategic drivers.

Suppose the degree of the company's strategic long-termism provides for achieving the company's objectives and no misalignment with stakeholders' goals and expectations is found. In that case, the scope of strategic risk controlling is defined, and strategic risk appetite is established (Funston and Wagner 2010). Also, the risk strategy is formulated, risk governance and protocols are established, and the risk reporting structure is set.

What happens if the degree of the company's strategic long-termism is non-sufficient for achieving the company's objectives or misalignment with broad stakeholder's goals and expectations are found? In that case, the board and management must take the correction measure. The first step is revalidation and adjusting strategic assumptions given context and dependencies. Secondly, the strategic objectives should be reconsidered given stakeholders' expectations and strategic drivers. Thirdly, the strategic horizon is adjusted to ensure the achievement of strategic objectives. Finally, the entire strategy must be revised to address the earlier steps.

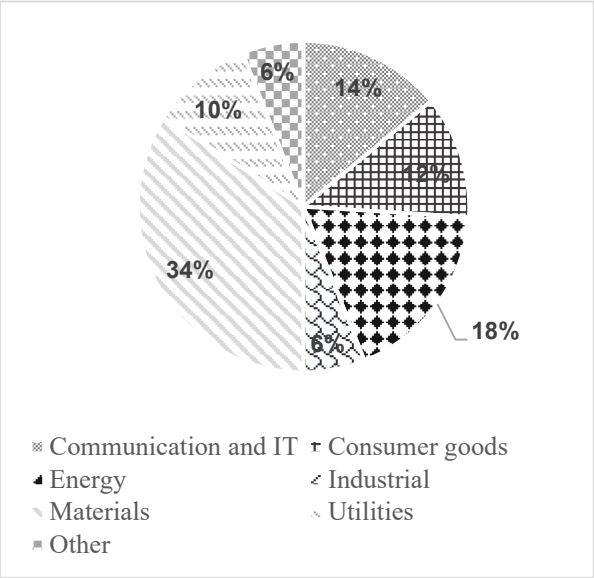
2.4. The Data

The sample contained data for 50 Russian public industrial and consumer companies for eleven years from 2009 to 2020. This time interval covers the entire economic cycle that began after the end of the 2008 financial crisis. In addition, during this period, many Russian companies became public and began to publish financial statements, according to IFRS or GAAP standards. The sample (Figure 2) was built on the following considerations: (1) the existence of publicly traded shares; (2) the availability of information (financial results under IFRS or GAAP standards), annual reports, and non-financial reports (integrated reporting, reporting under GRI standards). Financial statements of companies and EVA were taken from Bloomberg. The consolidated revenue of the companies in the sample comprised around 30% of Russia's gross domestic product.

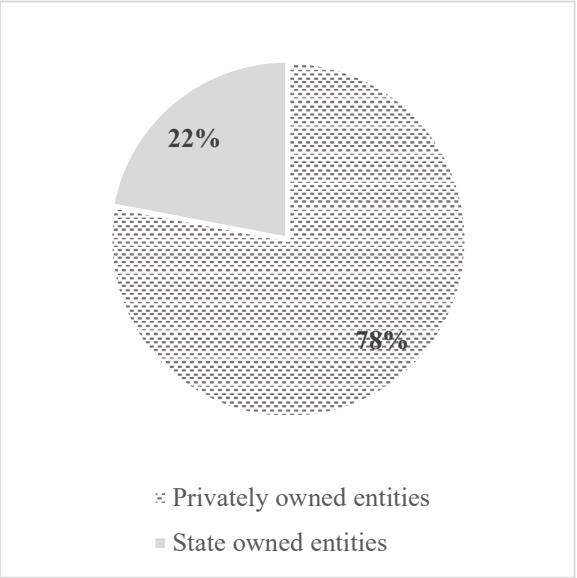
Descriptive statistics for the sample is presented in the Table 3.

The average WACC in the sample was 9%, which coincides with the research of McKinsey (Bradley et al. 2013) who received a global average cost of capital of 9 percent. The average EVA across the sample was negative and the median of EVA is around zero. It means that on average Russian industrial and consumer companies destroyed value for its stakeholder rather than creating it. It is mainly explained by their low NOPAT generation ability in comparison to invested capital. As we see can from Table 3, the average return on investment capital (ROIC) in the sample was 7.2%, which gave us the EVA spread (the difference between ROIC and WACC) of minus 1.85%. This, in turn, translated into the negative average EVA of RUB 11.3 billion. In our opinion, the low value generation ability of the largest Russian corporations was one of the primary reasons for the low growth potential of the Russian economy. Therefore, stakeholders and regulators, while assessing the companies' performance and its risk management practices, should pay more attention to value-based metrics rather than traditional metrics as EBITDA margin. As we see from

Table 3, the companies on average had healthy EBITDA margin, however, destroyed the value for the stakeholders.



(**a**) Industrial distribution



(**b**) Ownership distribution

Figure 2. Characteristics of the sample: (**a**) industrial structure; (**b**) ownership type.

Table 3. Descriptive statistics of data by EVA and other financial metrics.

Factor	Units	Mean	Median	Standard Deviation	Maximum	Minimum
EVA	RUBm	−11,260	46	114,407	613,748	−1,401,295
Total Assets	RUBm	635,935	58,660	2,159,628	20,810,440	130
Revenue	RUBm	357,206	39,265	1,092,750	8,576,000	1
Cash flow from operations	RUBm	73,587	2959	230,777	2,058,000	−16,012
WACC	%	9.0	8.2	4.2	30.7	1.8
NOPAT	RUBm	43,520	9640	138,250	1,661,341	−946,766
Invested capital	RUBm	608,700	116,894	1,867,100	21,920,062	−2100
EBITDA margin	%	20.0	19.5	19.4	83.9	−139.4

Sources: Bloomberg, Thomson Reuters.

2.5. Analysis of Long-Term Strategic Orientation Factors for Russian Industrial Companies

The results of the evaluation of the ranking of firms in the sample with long-term strategic focus (LTSF) are presented in Tables 4 and 5. Table 4 shows the medians of key financial and indicators of short-termism. We chose median because of the significant diversity of companies in the sample.

For the Russian economy, the size of revenue and assets determined the long-term orientation of the companies. Large companies were able to follow long-term strategies as they had stronger market positions, stable business profiles, and generated solid cash flows for long-term investments. However, we did not find a direct relationship between the long-term orientation and the size of economic profit. On the contrary, the median economic profit of myopic companies was higher than that of foresight companies. This observation corresponds to the conclusions of Chan et al. (2003) that high values of economic profit in certain periods may mean taking on excessive risks with damage to value creation in the future. Also, the high values of economic profit in certain periods may indicate underinvestment in future development. Long-term-oriented companies invested significantly more than the myopic ones. The median ratio of capital expenditures to depreciation for foresight and far-sighted companies was about 2 times, while for myopic and blind companies it equaled 1.4 times.

Table 4. Key median characteristics of companies by rating of relative long termism (SKRI).

Factors	Foresight Companies	Far-Sighted Companies	Myopic Companies	Blind Companies
Revenue (RUBm)	498,597	227,737	131,159	6221
Assets (RUBm)	866,756	285,645	132,706	22,353
EVA (RUBm)	508	7	900	8
CAGR of revenue growth (%)	5.5	6.1	3.0	4.1
Return of capital employed (ROIC, %)	7.80	8.75	8.45	8.65
Cost of capital (%)	7.78	8.00	8.45	8.50
EVA spread (ROIC-cost of capital), %	−0.02	−0.51	1.00	0.40
NOPAT margin, %	2.86	3.14	0.95	3.43
EBITDA margin, %	31%	28%	16%	14%
EBIT margin, %	22%	16%	13%	6%
Assets turnover (x)	0.61	0.74	0.72	0.74
Earnings quality (x)	0.11	0.09	0.02	0.04
Margin growth (x)	0.04	0.08	0.02	0.37
EPS growth (x)	0.01	0.00	0.00	0.05
DSRI (x)	0.95	1.04	0.99	0.98
DII (x)	1.00	1.02	1.02	0.99
AQI (x)	0.99	1.01	0.96	1.08
Corporate governance index (x)	10	10	8	5
Share of permanent capital (x)	0.78	0.70	0.60	0.64
Financial leverage (debt/equity, x)	1.7	2.4	2.8	5.4
ESG disclosure score (x)	45	33	21	12

Sources: Bloomberg, Thomson Reuters.

Forward-thinking companies used equity and long-term debt as sources of capital for long-term investment. They were more conservative from the point of view of credit risk management because their financial leverage ratio is significantly lower than that of short-term-oriented companies. On the contrary, short-term-oriented companies used much more short-term debt. This allows myopic companies to get a higher return on invested capital (in terms of ROIC) but exposes them to higher credit risk. This conclusion also coincided with those of Chan et al. (2003) that myopic companies took excessive risks, which undermined their long-term competitiveness.

Moreover, companies with a long-term strategic orientation generate higher profitability, compared to short-sighted companies. For example, the median EBITDA margin for foresight companies is 15–17% higher than for myopic ones. High profitability allows long-term companies to use larger available free flow for investments, thereby creating leverage for future growth. The table shows that the compound annual growth rate (CAGR) of revenue for long-term-oriented companies is approximately 3% higher than for those pursuing a short-term strategy.

Finally, companies with a long-term strategic orientation used assets more efficiently. Their asset turnover rate is higher than for short-sighted companies. We also see that companies focused on the long term have increased their net profit due to sales growth, and not due to cost manipulations.

The key prerequisites for long-term strategic orientation were the following of high standards of corporate governance, investing in the best practices of sustainable development, high levels of corporate social responsibility, and maintaining a solid level of disclosure of non-financial information. The table shows that the corporate governance quality index for farsighted companies is significantly higher than for companies pursuing short-term strategies. Moreover, the median rate of the disclosure of information about following environmental, social, and governance (ESG) practices for forward-thinking companies is nearly 20 points higher than for short-sighted and blind companies. However, we failed to find that short-term rental companies used more manipulations in accounting compared to companies with a long-term strategic orientation. On the contrary, according

to the earning quality indicator, forward thinking companies in Russia generated earnings that reflected accounting decisions.

Table 5 showed that industries with the largest relative number of long-term focus companies operated in utilities (80%), energy (78%), and communication and IT (57%) industries.

Table 5. Long-term focused companies across industries.

Industry	Total # of Firms	Foresight Companies (#), LTSF = 3	Far-Sighted Companies (#), LTSF = 2	Myopic Companies (#), LTSF = 1	Blind Companies (#), LTSF = 0
Communication and IT	7	0	4	1	2
Consumer goods and healthcare	7	0	2	3	2
Oil and gas	9	4	2	3	0
Industrial	3	0	0	2	1
Materials	17	3	7	5	2
Real estate	2	0	0	1	1
Utilities	5	3	1	1	0

number of companies in the group. Source: developed by authors.

The energy segment (mainly presented by oil and gas companies) has a significant number of foresight companies (44% of the sample). This is due to the need for significant capital investments in the development of new fields and improving the efficiency of production and processing. Additionally, these companies operate in an industry that is subject to significant volatility in demand, supply, and prices. Therefore, in order to survive, these companies: (1) need to balance capital expenditure budgets to up-and-down price cycles; (2) constantly seek ways to reduce exploration and processing cost; and (3) establish strong risk management function focused on the reduction in risks to an acceptable level and maintaining resilience to threats. Moreover, these are companies with continuous production processes and business-to-business sales models. This reduces the possibility of manipulating cost and result items in the accounting of these firms. Lastly, the utilities and energy industries were among the first in Russia to attract financing abroad, so they have already built corporate governance systems that meet the requirements of foreign investors.

Another example of an industry in Russia where foresight companies dominate is the utility industry (60% of companies in the set). This is underpinned mainly by government regulation, which encourages utilities to invest in more efficient generating capacity and electricity networks in exchange for increased tariffs. Now, both Russian utility and energy companies need to think about optimizing its investment programs and modernizing production due to a gradual transition to a low carbon economy.

In such sectors as real estate (100%), consumer goods (71%), and industrials (100%), there is a significant concentration of companies with LTSF = 1 or LTSF = 0. Real estate companies were scored low due to low investments, in comparison to depreciation and a large share of accruals in revenue. We attributed that to the high demand for affordable real estate in the country, which incentivized those companies to focus on constructing low-budget and simple design apartment blocks rather than investing in complex architectural projects, improvements in consumer properties of housing, and innovations. Consumer goods companies scored low in DII and DSRI ratios, indicating reduced efficiency in working capital management.

Short-sighted industrial companies in Russia often scored low in accounting ratios (DSRI and AQI), which indicated difficulties in working capital management and pointed out the risks that their long-term assets could be used as a source of cost deferral. They also scored low in the share of permanent capital and retained cash flow efficiency ratios, which indicated the high probability that those companies financed their investment programs with short-term loans. That, in turn, could increase the liquidity risks due to a mismatch

between assets and liabilities. Another feature of short-sighted companies was the large difference between earnings and revenue growth, which indicated unsustainable growth in margins and the risks of earnings manipulation to meet banks' covenants.

Lastly, we calculated Spearman's rank correlation coefficient between SKRI and EVA_{growth}. The calculation resulted in a value of 0.8 (Figure 3).

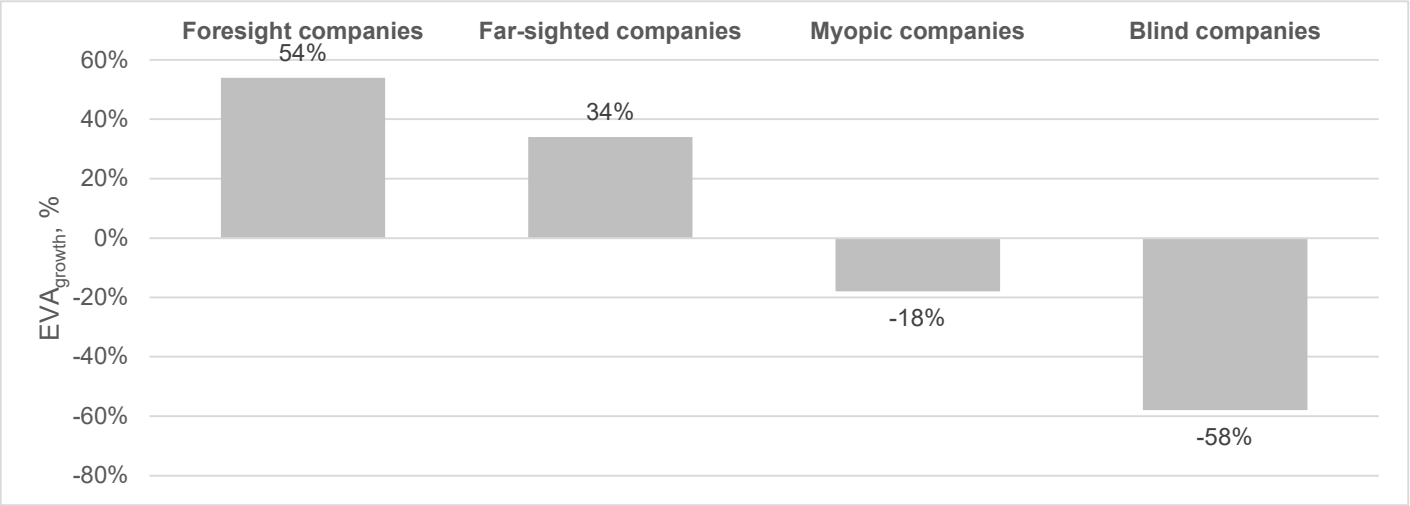


Figure 3. Correlation between SKRI and multi-period average growth of economic value added.

Therefore, the long-term strategic orientation of the firm is not immediately realized into stable positive economic profit patterns over time. However, there is strong and positive correlation between the firm's decision to follow long-term strategic orientation and the value of multi-period growth in firms' economic profit.

These results confirmed the conclusions from the practical and academic literature on other countries and financial markets. Just like in the study performed by McKinsey (Barton et al. 2017) on the US market, the long-term companies outperformed "short-term" companies in economic profit over the sample period. On the other hand, we did not discover that long-term companies outperform short-term companies if we consider their performance by individual periods. This conclusion also coincided with the results of McKinsey, which said that "value did not materialize overnight". These inferences are also confirmed in the work of Chan et al. (2003), high and immediate growth in profit could be the way to bankruptcy. Our finding also agreed with those in accounting literature (Roychowdhury 2006) that companies less engaged in accounting manipulation demonstrated higher levels of economic profit. Moreover, the foresight companies in our sample had on average higher scores on corporate governance. This is agreed with the conclusions of (Krause and Tse 2016) who found that the implementation of sound enterprise risk management and corporate governance practices increased firms' value.

3. Discussion

The future research directions include: (1) expanding the study to other markets; (2) studying specific industrial drivers of short-termism; (3) assessing the difference in resilience to risks between strategically "short-sighted" and "foresighted" companies; and (4) expanding the set of environmental, social, and governance factors for analysis.

4. Conclusions

In this paper, we worked out the strategic risk-controlling mechanism for setting up risk management architecture in the firm. We also developed the system of key risk metrics (SKRI) aimed at assessing the degree of a company's following long-term strategic orientation. This assessment is necessary because following strategic management with a

short-term horizon usually results in the realization of high-impact risks, which ultimately leads to the destruction of long-term value and calls into question the firms' survival. We also tested SKRI on a sample of 50 Russian public non-financial companies. We found a strong and positive correlation between the management's decision to follow a long-term strategic focus and the growth of companies' long-term value (measured by the economic value-added metric (EVA)). We also demonstrated that companies from the oil and gas and utility industries in Russia have the largest share of long-term-oriented companies, while the industrial, real estate, and consumer goods segments have a significant share of short-term-oriented companies.

We believe that our study expands the academic research in the field of short-termism and raises important questions, such as (1) whether long-termism can positively affect a company's long-term value; (2) how the assessment of short-termism can be considered at the stage of setting up risk management architecture; (3) if the shift toward responsible investments signals long-term value creation and how it can be integrated into the measurement of "long-termism"; and (4) whether drivers of short-termism differ from industry to industry.

The developed mechanism provides a holistic view of setting risk management architecture and ensuring alignment of a company's objectives with both the stakeholders' expectations and the strategic horizon. Unlike the "conventional" SKRI systems that were focused mainly on financial drivers, our system includes a wide range of factors, including accounting, corporate governance, and sustainable development. The advantage of such a system of indicators is the traceability of interaction and connections between different divisions of the company. The implementation of such a system as a basis for planning and decision-making ensures coordination of actions within the company. The developed SKRI system can also be used as a basis for the preparation and presentation of integrated reporting. Finally, this is one of the first studies on the issue of assessing the long-term strategies of Russian public companies. The findings can be used by investors in the Russian financial market to assess the quality of issuers' strategies and assess the compliance of their investment horizons with the strategic horizons of companies in the financial market. Accordingly, the developed mechanism will help risk controllers align the strategic horizon and objectives with stakeholders' expectations.

However, the limitations of the study include the small sample size and the focus on the narrow market of Russia.

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