DEVELOPMENT OF THE HORIZON INDEX TO EVALUATE LONG-TERMISM OF RUSSIAN NON-FINANCIAL COMPANIES

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Short-termism, the firm's following strategic management practices for short-term, restricts investment in physical and intellectual capital. Investors and managers should identify and counteract such practices in a timely manner. However, existing academic and practical studies overlook problem of short-termism in emerging markets, lack reliable metrics of short-termism or consider only financial indicators in existing horizon metrics. In this paper, we closed some research gaps and constructed the relative horizon index which evaluated strategic focus of public non-financial companies from various industries. We also performed empirical study of horizon index on the sample of 50 Russian non-financial companies over 2014–2019. It revealed that the energy and utility segments 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. The former is explained by: the significant need for modernization in these sectors; developed corporate government systems of firms; limited incentives to accounting manipulations; and a diverse set of stakeholders. Conversely, the latter is underpinned by low levels of investments in comparison to depreciation of real estate, industrial and consumer goods companies. It is also driven by higher incentives for these companies to play with accounting ratios. We showed that 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. The results can be used by investors, analysts and asset managers to screen the companies on the subject of their following long-term value creation principles and to compare the ability of the firms to sustain positive economic profit.

Keywords: horizon index, long-term value creation, economic profit, strategic management, short-termism, management myopia.

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INTRODUCTION

The key to success of each company is a well-elaborated strategy aimed at long-term value creation for all stakeholders. However, a thorough analysis of public companies' strategic practices showed that this is not often the case [Tang, Greenwald, 2016]. Many firms stick to strategic management for the short-term, with decisions focusing on near-term profit maximization (quarterly or annually) at the cost of long-term value creation through investments and innovations. Such behavior is often called "short-termism" [Keum, 2021]. Short-termism is currently viewed as a problem because it restricts investment in physical and intellectual capital. This leads to unintended consequences for the long-term value creation capabilities of the firm [Nikolov, 2018]. This, for its part, leads to a slowing of gross domestic product, higher unemployment, and lower future returns for savers [Tang, Greenwald, 2016].

Literature review indicated that company's myopic behavior has 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 which 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 indictor, cited R. Martin from 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, 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 reflect the relative ordering of risk of short-termism. Another research gap is that 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 emerging market. Yet, another research gap is that horizon indices in the existing papers are based on financial ratios but ignored non-financial metrics.

Thus, the objective of our research is to construct the relative horizon index which reflects the long- and short-term focus of Russian public non-financial companies from various industries. We chose Russia, because it checks off virtually every box on the list of risks in emerging markets investing geopolitical and currency risk, low depth and breadth of capital markets, excessive concentration of business in a few companies, inflation risks, immature corporate governance, or the risk that its large companies may be used for purposes of government policy rather than shareholder returns. The second objective of this study was to find the relationship between the degree of long-termism and the ability to create economic profit.

The relevance of the study is underpinned by the global dissemination of short-termism, which is confirmed by corporate sentiment, investor holding data, and secular trends [Tang, Greenwald, 2016]. Moreover, 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. Thus, it is important to assess non-financial indicators in conjunction with financial factors to obtain an analysis of the long-term value creation behavior of considered companies.

The paper contributes to the literature in various ways. Firstly, it addresses the issue of short-termism for Russian non-financial companies. To our knowledge, this is the first paper with investigates this problem

specifically for Russian corporate sector. Secondly, it covers gaps in the literature outlined above as the developed index contained both financial and non-financial indicators. Thirdly, the study provides the methodology of the index for analysis of short-termism of companies. Fourthly, we explored the relationship, the constructed benchmark and patterns of behavior based on the trends in economic profit (expressed by the economic value-added metric — EVA) and the average multi-period growth ratio of economic profit (AGeva) for the six years of observations.

We tested two hypotheses: (1) the long-term strategic orientation of the firm is not translated into a sTable positive economic profit pattern over time; and (2) there is a positive relationship between the rating of long-termism (LTR) and multi-period growth of firms' economic profit. From perspective of practice, the results can be used by various stakeholders — investors, business partners, analysts and assets managers to screen the companies on the subject of their following long-term value creation principles and to compare the ability of the firms to sustain positive economic profit.

The rest of the paper is organized as follows. Literature review and gaps in the studies are outlined in Section 1. Section 2 formulates the hypotheses of the study and explains the methodology of horizon index estimation together with metrics constituent the index. Section 3 discusses the results.

1. MEASURING SHORT-TERMISM: A LITERATURE REVIEW

The literature explored various aspects of long- and short-termism. Researchers from consulting companies and rating agencies have done considerable work on studying of practical consequences of short-termism. However, this topic remains insufficiently studied in academic literature.

1.1. Practical studies of short-termism

The most relevant white paper, prepared by practitioners, is the research written by McKinsey Global Institute [Barton et al., 2017]. It provides evidence of the negative impact of myopia on corporate performance and economic growth due to the lack of a complete and accurate list of criteria for identifying this phenomenon. Following the global goal of transforming the economy to improve the well-being of the population and ensure sTable gross domestic product (GDP) growth, McKinsey offers a 5-factor corporate horizon index (CHI), derived from a study on a sample of 615 non-financial companies in the United States with continuous data on revenue from 2000 to 2015 and a market capitalization of 5 bln doll. in at least one year over that period. CHI includes five financial factors and hypotheses (Table 1).

On the basis of the results gained McKinsey concluded that starting from 2001, the average real revenue of long-term companies within the sample grew in 15 years by 47% more than that of short-term firms, whereas their economic profit (measured by EVA) rose by 81%. In addition, during the crisis 2007–2014, investment spending by short-term firms grew at an average annual growth rate of 3.7% and that of long term-oriented companies by 8.5% [Barton et al., 2017]. Despite the practical value of these findings, there are some points that require more disclosure. For example, it would be interesting to consider a wider set of factors, adding non-financial and macroeconomic ones. Such factors can include, for example, ownership structures or productivity drivers. Given the growing impact of sustainability issues on the long-term development of the company, it is desirable to study criteria in this domain. In addition, the difference in indicators between economy sectors and the influence of regional factors are not considered.

"Ernst and Young" — global audit and consulting company (EY) performed the analysis of several channels through which

Table 1

Components of CHI suggested by McKinsey Global Institute

Indicator	Measuring approach	Hypothesis
Investment	Ratio of capital expenditures to depreciation	Long-term firms invest more frequently and in larger volumes than short-term firms
Earnings quality	Accruals as a share of revenue	Long-term firms' earnings reflect cash flows, not accounting decisions
Margin growth	Difference between earning growth and revenue growth	Long-term firms' revenue growth significantly differs from their net income growth
Quarterly management	Incidence of beating EPS targets by less than two cents and incidence of missing earnings per share (EPS) targets by less than two cents	Short-term firms aim to match analysts' EPS predictions, whereas long-term ones are willing to miss them if needed
Earnings per share growth	Difference between EPS growth and true earnings growth	Long-term firms do not tend to over-index EPS (e.g., through share buybacks) without consistent net income growth

short-termism negatively impacted the long-term performance of companies [EY Poland Report, 2014]. These channels included: (1) short CEO tenure; (2) reduction in investment activity; and (3) neglection of human capital. Other channels included short-term oriented remuneration schemes, short-term communication with the capital markets, and threats of CEO dismissals. EY ran the econometric model to study dependence between several CEOs characteristics (tenure, CEO status as outsider; the structure and level of CEOs remuneration) and basic financial indicators (ROE, share prices, revenue, debt, equity, market capitalization). The data sample included 1024 largest publicly listed companies on European stock markets from 1998 to 2013. Strong positive relationships were found between firms' market capitalization and CEO tenure as well as ROE and CEO tenure. The study revealed that in the long-term, both the company's market capitalization and ROE were positively influenced by the firm's investment activity. Moreover, investment spending and companies' performance positively depended on management stability. However, the impact of a CEO's experience on companies' performance was strongest only during the first years of a CEO's tenure. Significant linkages were not found between firms' long-term performance and capitalization from either: (1) "the CEO insider" effect; and (2) long-term orientation of CEO compensation schemes. The limitation of the paper was not addressing may important corporate governance factors, the financial decisions of CEOs and CFOs, and sustainability metrics. Unlike that of McKinsey, this study did not provide the aggregate measure of a company's long-term strategic behavior.

In turn, K. Tang and C. Greenwald from "Standard and Poor's" suggested five core areas for which major asset managers should pay attention in developing long-term investment strategies. These are investors beliefs, risk appetite statements, benchmarking processes, evaluations and incentives, and investment mandates [Tang, Greenwald, 2016]. The authors rightly point out that purely financial metrics are not enough to assess the long-term strategy of the company. To

assess these core areas, investors should extend the set of factors toward: (1) industry-specific metrics that will vary by sector; and (2) sustainability metrics that encompass environmental, social, and governance assessment criteria. However, the paper did not provide the aggregated index for assessing short-termism; it provides only single indicators.

1.2. Short-term investment bias in academic literature

In academic literature, the problem of short-termism was studied in various domains including marketing, management and strategy, accounting and finance. The accounting literature on strategic myopia refers to the same: analyzing of various metrics which can reveal the accounting tricks aimed at meeting earning thresholds (such as earnings per share — EPS) in expenses of long-term value creation [Cai, Zhao, Huang, 2005; Roychowdhury, 2006; Herawati, 2015].

These metrics manipulations are concentrated on such activities as: (1) decreasing discretionary expenses; (2) sales; (3) overproduction to decrease cost of goods sold and increase working capital; or (4) timing of recognizing assets and liabilities. In the paper "Is It Time to Get Rid of EPS?" the author hypothesizes that the EPS metric is not exclusively indicative for investors, although it is easily understandable and accessible [Almeida, 2018]. The author conducts bibliographic analysis and proposes to rely on several indicators at the same time — for example, EPS, ROA (return on assets), sales growth (revenue growth rates), as well as the trend of indicators over the time and not at the moment. In addition, the author disagrees on providing quarterly reports and advises to switch to semi-annual and annual ones, because frequent reporting can encourage firms to adjust financial results in line with market expectations. A. Lopes reported significant relationships between the manipulation of reporting and thus short-termism and the quality of the auditor [Lopes, 2018]. Companies for which auditors were repuTable and independent showed a lower level of accrued liabilities. On the contrary, audit firms with an unknown brand and lack of reputation do not prevent clients from manipulating income in order to achieve short-term goals.

Thus, accounting literature has revealed that the one cause of short-termism is overweighting short-term value generation due to investors' reliance on short-term oriented accounting statement data. However, this literature suggests focusing on accounting-based metrics to evaluate firms' myopic behavior despite the fact that these metrics are short-sighted by itself. This is because the metrics are short-term oriented and do not measure significant parts of firm operations such as intellectual capital, sustainability, strategic and investment decisions.

In turn, academic literature in strategy and finance is trying to either determine the causes and consequences of management myopia or suggest remedies to short-termism. Strategy papers focus on flawed management practices that result from bounded rationality and cognitive limitations of managers and are followed by restricted investments in intellectual capital and other intangible assets [Miller, 2002]. L. Chan, L. Karceski and J. Lakonishok in their pioneering work on short-termism theory [Chan, Karcescki, Lakonishok, 2004] studied historical long-term growth rates across a broad cross-section of stocks using several indicators of operating performance. They showed that very few companies maintained sTable growth rates. 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.

Finance literature focuses on management incentives to short-termism due to financial market pressure [Gonzalez, André; 2014; Nikolov, 2018; Pogach, 2018; Allee et al., 2020]. Theses incentives are driven by: (1) outside factors (e.g. short-term orientation of some stakeholder groups or high perceived risk of economic environment); (2) executive compensation incentives (e, g. cash bonuses and in the money stock options of managers); (3) intra-organizational factors (e.g. company culture emphasizing accounting number-based performance management, short-term orientation of Boards, efficiency of auditing and oversight); or (4) individual factors (e.g. personal characteristics of managers, self-confidence of CEO, etc.).

D. Ikenberry, J. Lakonishok and T. Vermaelen showed that managers incentivized by short-term oriented compensation will conduct more share repurchases to manage earnings and boost stock prices [Ikenberry, Lakonishok, Vermaelen, 1995]. B. Yanovski, K. Lessman and I. Tahri [Yanovski, Lessman, Tahri, 2020] demonstrated that high perceived risk in the economic environment led to low levels of long-term investment and that policy measures were needed to support these investments especially during times of increased uncertainty. J. Cohn, U. Gurun and R. Moussawi considered the agency problem from the side of managers' personal desires influence on decision-making regarding the activities of the firm [Cohn, Gurun, Moussawi, 2020]. Managers are interested in the growth of the company's shares so that they have to meet market expectations — to make statements and show the values that are desired by current and future shareholders. As a result of regression analysis on a sample of US companies this paper concluded that in a desire to keep up with customer satisfaction, managers refused to act in a way that could lead to a 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.

Academic literature has some controversies as well. R. Henderson, H. Rahmandad and N. Repenning [Henderson, Rahmandad, Repenning, 2015] argue that the problem of short-term earnings management is not linear. Conversely, above a certain threshold of capability stock (measured as a balance between investments and non-investment) earnings management is relatively harmless and does not result in underinvestment, but below it, it can be disastrous for stakeholders.

The general gap in academic literature is that it aims at discovering the causes of short-termism, however, does not provide the indicator of how investors or asset managers can segregate short-sighted companies from long-sighted companies. Very few, if any, papers, were devoted to assessing short-termism of companies working in emerging markets.

2. MODELS AND METHODS

2.1. Horizon index methodology

The objective of the study was: (1) to construct the relative horizon index (HI) which reflect the long- and short-term focus of Russian public non-financial companies from various industries; (2) to calculate HI for the selected companies over the period of 2014–2019; and (3) to analyze the relationship between HI and economic profit of the companies in the sample.

We constructed HI using the hybrid approach. We take the set of strategic financial factors proposed by McKinsey [Barton et al., 2017] as the base and enrich this set by financial and non-financial indicators, mentioned in the academic and practitioner literature. Then, we checked a set of

factors for correlation between them. To do this, we calculated the Pearson pair correlation coefficient between the indicators in the set and excluded indicators with a correlation greater than 0.7. Lastly, we double checked if there is a strong correlation between the factors comprising the HI and firms' economic profit measured by economic value added (EVA). We only left factors which demonstrated Spearman's rank correlation between economic profit of above 0.5. The final list of metrics is presented in Table 2. When assessing the quality of auditors, we used the ranking calculated by the group of international rating agencies RAEX1.

Construction of HI involves the following steps.

Step 1. Calculate the individual metrics from Table 1 for each year of observation (t).

Step 2. In each year of observation and each individual metrics 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. In case of direct relationship, we assigned the score "10" if the value of the factor had the maximum value, "9", if the value of the factor fell into 90th percentile, "8" if the value of factor fell into 80th percentile and so on. Conversely, in case of inverse relationship, we assigned the score "10" if the value of the factor had the minimal value, "9" if the value of the factor fell into the 10th percentile, "8" if the value of the factor fell into the 20th percentile and so on.

Step 3. For each firm and each individual metrics, we calculated the average score across the years of observations.

Step 4. For each firm we calculated the HI by the following formula. The same as in CHI methodology [Barton et al., 2017] we applied the descriptive analysis and constructed the index that weighted each of factor equally. Thus, our HI 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:

$$HI = \frac{\sum_{i=1}^{13} FC_i}{13}, \quad (1)$$

where FC_i — is the score of *i-th* factor across years of observations.

Step 5. All companies in the sample were treated as "short-sighted" or "far-sighted" based on whether their individual HI value were below or above M (M — the median value of HI) of the whole set of companies. In addition, we developed the following rating of "long-termism" (rating of long-termism — LTR) which shows the relative degree of myopia or foresight of each company (Table 3).

2.2. The hypotheses

In this study we will explore the following hypotheses.

Hypothesis H1. Long-term strategic orientation of the firm is not realized in sTable positive economic profit pattern over time.

This corresponds with conclusions of [Chan et al., 2004] that that very few companies maintained sTable patterns in economic profit over time due to investment and economic cycles. Conversely, sTable positive pattern of economic profit usually is the sign of short-termism.

Hypothesis H2. There is a positive relationship between LTR 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.

[1] RAEX. URL: https://raex-a.ru/files/files/_Metod.pdf (accessed: 19.04.2021).

Table 2

Components in the developed HI

Factor	Way of calculation/ evaluation	Rationale	The feature of far-sighted firm	Relationship between HI and factor
Strategic factors (from McKinsey set)				
Investments	$\frac{Capital\,expenditures_t}{Depreciation_t}$, where t — reporting period (year)	Long-term firms consistently invest much more than require sustaining current operations	>>1	Direct
Earning quality	$\frac{Net\,income_t - Free\,cash\,flow_t}{Revenue_t}$	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*	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 are in compliance 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 two 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

Factor	Way of calculation/ evaluation	Rationale	The feature of far-sighted firm	Relationship between HI and factor
		Susceptibility to accounting manipulations		
Days in inventory growth (DII)	$\frac{Inventory_t / Direct\,Costs_t}{Inventory_{t-1} / Direct\,Costs_{t-1}}$	Long-term firms will maintain inventory level consistent to shipment to customers (reflected in direct cost)	~1	Inverse
Days in accounts receivable growth (DSRI)	$\frac{Receivables_t / Sales_t}{Receivables_{t-1} / Sales_{t-1}}$ $\frac{Receivables_t / Sales_t}{Receivables_{t-1} / Sales_{t-1}}$	Long-term firms will maintain accounts receivable level consistent to sales	~1	Inverse
Asset quality index (AQI)	$1-\left(\frac{CA_t + PPE_t / TA_t}{CA_{t-1} + PPE_{t-1} / TA_{t-1}}\right)$, where CA — current assets; 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
		Factors of financial policy		
Share of permanent capital	$\frac{Long-term\,debt_t + Equity_t}{Total\,assets_t}$	Long-term firms finance growth in assets by long-term (permanent) capital	Close to 1	Direct
Retained cash flow margin	$\frac{Retained\,cash\,flow\,(RCF)_t}{Revenue_t}$	Long-term firms consistently retain sufficient cash for future development after liability and dividend payments	Above market or industry peers	Direct

Note: * — published by RAEX. URL: https://raex-a.ru/files/files/_Metod.pdf (accessed: 19.04.2021).

Table 3

Rating of "long-termism" of the firm

LTR value	Pattern name	Definition of the pattern
3	Foresight company	$HI > HT$ $HT = M + 0.5 \cdot (\max(HI) - M)$
2	Far-sighted company	$M < HI \le HT$
1	Myopic company	$LT < HI \le M$ $LT = M - 0.5 \cdot (M - \min(HI))$
0	Blind company	$HI \le LT$

2.3. The economic profit (EVA) and economic profit rating (EPR). EVA growth rate

We used EVA as the measure of a company's economic profit. It can be defined as a profit earned by the firm less the cost of capital to finance its operations [Stern, Stewart, Chew, 1995; Ivashkovskaya, Kukina, 2009; Sabol, Sverer, 2017]:

$$EVA_t = NOPAT_t - (TA_t - CL_t) \cdot WACC_t, \quad (2)$$

where t — reporting period; EVA_t — economic profit the in the period t; TA_t — total assets in the period t; CLt — current liabilities in the period t; $WACC_t$ — cost of capital of the company in the period t; NOPAT — net operating profit after tax in the period t. If economic profit in the period is positive than the company creates value for its stakeholders and, conversely, destroys value in the opposite case [Stern, Stewart, Chew, 1995].

The formula (3) can be rewritten to form the economic profit spread measure (EVAS). It denotes the percentage by which the return on invested capital exceeds the performance period WACC:

$$EVAS_t = \frac{NOPAT_t}{TA_t - CL_t} - WACC_t. \quad (3)$$

To prove hypothesis *H1* we build the economic profit rating (EPR). Based on this metric we constructed the EPR (Table 4) which showed how efficient was each company in terms of value creation in all six periods of observation (2014–2019). In other words, EPR shows the pattern of creating economic profit of each company in the sample.

To prove hypothesis *H2* we introduced average multi-period growth ratio of economic profit (AG_{eva}) for the six years of observations:

$$AG_{EVA} = \frac{\frac{(EVA_6 - EVA_1)}{EVA_1}}{6} \cdot 100\ \%. \quad (4)$$

If the hypothesis is true than far sighted companies should produce higher AG_{EVA} than short-sighted firms.

2.4. The data

The sample contained relevant data for 50 Russian public non-financial companies over the period 2014–2019. The sample was built on the following considerations: (1) the existence of publicly traded shares; (2) availability of information (financial results under IFRS or GAAP standards and annual reports). The list of companies is presented

Table 4

EPR and patterns of economic profit

EPR value	Pattern of economic profit creation	Definition of the pattern
3	Positive stable	The company had positive EVA in each six periods of observations
2	Positive	The company had positive EVA in more than 50 % of periods of observations (four and more out of six periods)
1	Negative	The company had positive EVA in 50 % of less periods of observations (three and less out of six periods)
0	Negative stable	The company had negative EVA in all periods of observations

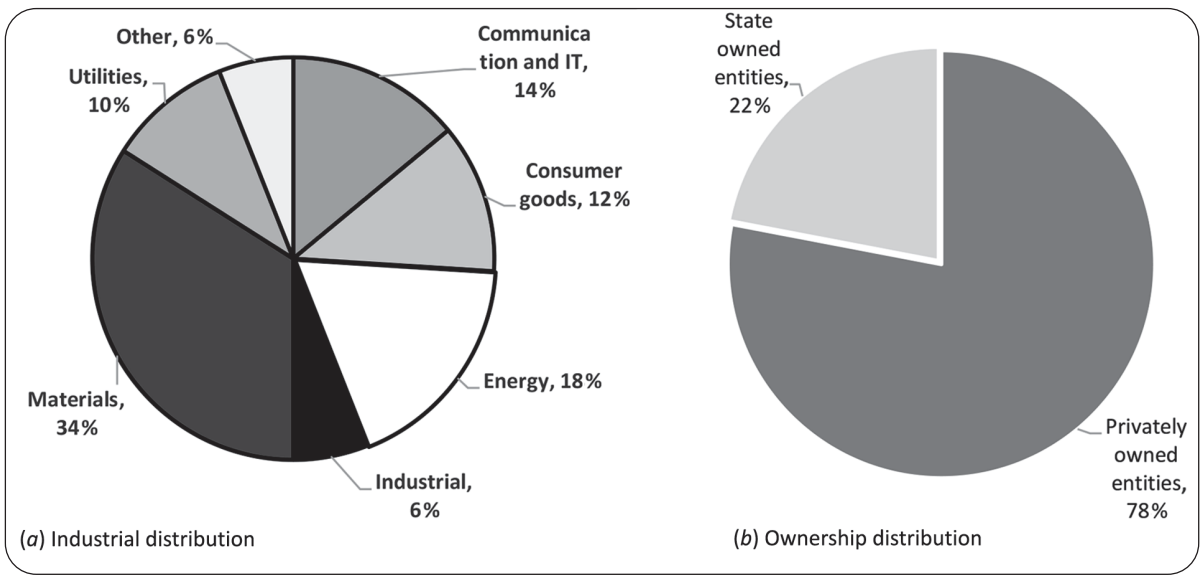

Fig. 1. Distribution of companies in the sample, 2014–2019

in the Appendix, together with the results. Industrial and ownership distribution of companies in the sample is in Figure 1 (a, b). Financial statements of companies were taken from Bloomberg. The combined revenue of the companies in the sample was around 30 % of Russia's gross domestic product.

As Figure 1 shown, privately owned entities dominated the sample of Russian companies. The majority companies in the sample are operating in materials sectors (chemicals and metals and mining) and energy sector (oil and gas).

3. RESULTS AND DISCUSSION

Results of calculations of HI, LTR and EPR with the formulas 1–4 is in the Appendix. The summary of calculation of LTR is presented in Table 5. As it indicated, industries

Table 5

LTR distribution by industry, 2014–2019

Industry	Total number of companies	Foresight company	Far-sighted company	Myopic company	Blind company
Communication and IT	7	0	4	0	3
Consumer goods and healthcare	7	0	2	4	1
Energy	9	4	3	2	0
Industrial	3	0	1	1	1
Materials	17	2	6	7	2
Real estate	2	0	0	2	0
Utilities	5	3	1	1	0

with the largest relative number of visionary companies (foresight and far-sighted) are utilities (80%), energy (78%) and communication and IT (57%).

The energy segment (mainly presented by oil and gas companies) has the largest number of foresight companies (57% 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 reduction of risks to accepTable level and maintaining resilience to threats. Moreover, these are companies with continuous production processes and business-to-business sales models. These reduce 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 (43% 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 (67%), there is a significant concentration of short-sighted companies. Real estate companies are scored low due to low investments in comparison to depreciation and large share of accruals in revenue. We attribute this to high demand on affordable real estate in the country, which incentives companies to focus on construction, low-budget and simple design apartment blocks rather than investing in complex architectural projects, improvements in consumer properties of housing and innovations. Moreover, local banks are reluctant to finance real estate companies due to high risk; thus construction companies have incentives to manipulate earnings to meet banks' standards.

Consumer goods companies score low in days in inventory growth ratio (DII) and

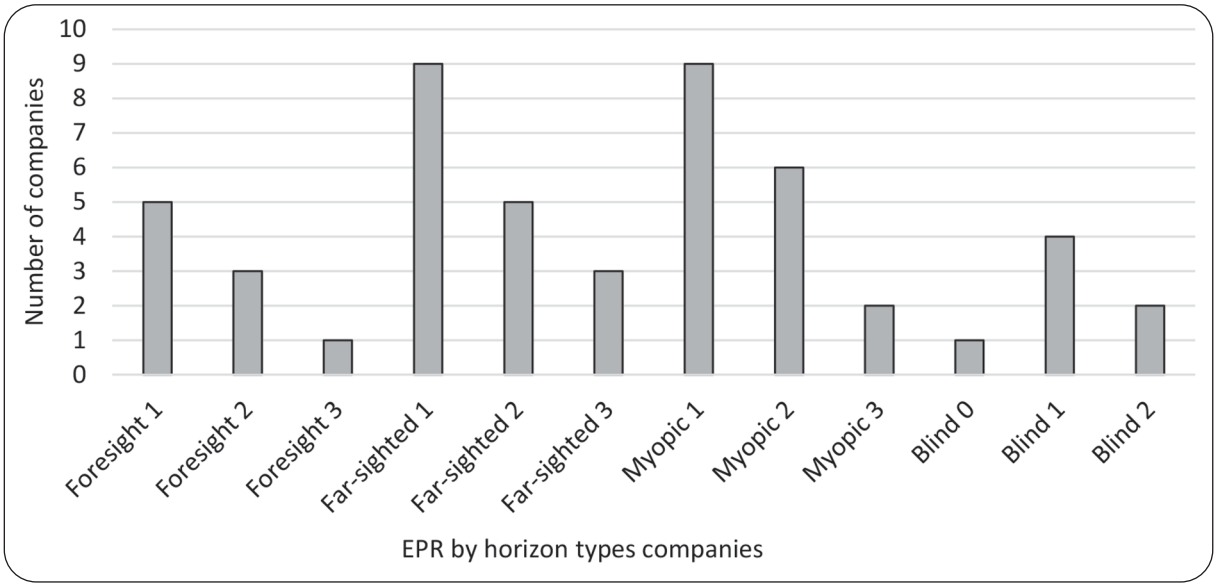

Fig. 2. Dependence between EPR and companies' horizon

days in accounts receivable growth ratio (DSRI) , indicating their low efficiency in working capital management. Lastly, short-sighted industrial companies in Russia are mainly scored low in accounting ratios (days in accounts receivable growth ratio and asset quality index) which may indicate low efficiency of accounts receivable management and risks that their long-term assets are used as a source of cost deferral. They also are scored low in share of permanent capital and retained cash flow efficiency ratios, which indicates that these companies finance their investments with short-term loans. This increases liquidity risks due to mismatch between assets and liabilities. Also, these companies are characterized by large differences between earnings and revenue growth which indicate unsustainable growth in margins and the risks of earnings manipulation to meet banks' covenants.

To prove our hypothesis *H1* we estimated Spearman's rank correlation coefficient between LTR and economic profit rating (EPR). The results demonstrated a positive but weak correlation of 0.14, meaning that long-term-oriented firms did not show a sTable and positive pattern of economic profit. Conversely, myopic companies (with LTR $\leq$ 2) demonstrated a more tense correlation between EPR and LTR (0.3) while there was a very low rank correlation between EPR and LTR of far-sighted companies (0.06). Thus, for Russian companies in the sample, the hypothesis *H1* was proved, and the long-term strategic orientation of the firm was not immediately translated into sTable positive economic profit patterns over time.

The chart of the distribution of long-term companies by economic value patterns also revealed an absence of strong correlation between EPR and LTR (Fig. 2). Conversely, high investments in initial periods require a significant amount of capital at a high cost. Moreover, the period 2014–2019 in Russia was associated with high debt rates due to the economic and sanctions crisis. That translated into high costs of capital, which reduced the positive effect of long-term behavior of the companies.

To prove our hypothesis *H2* we calculated Spearman's rank correlation coefficient between LTR and average AG_{eva} for each LTR class. The result demonstrated positive and

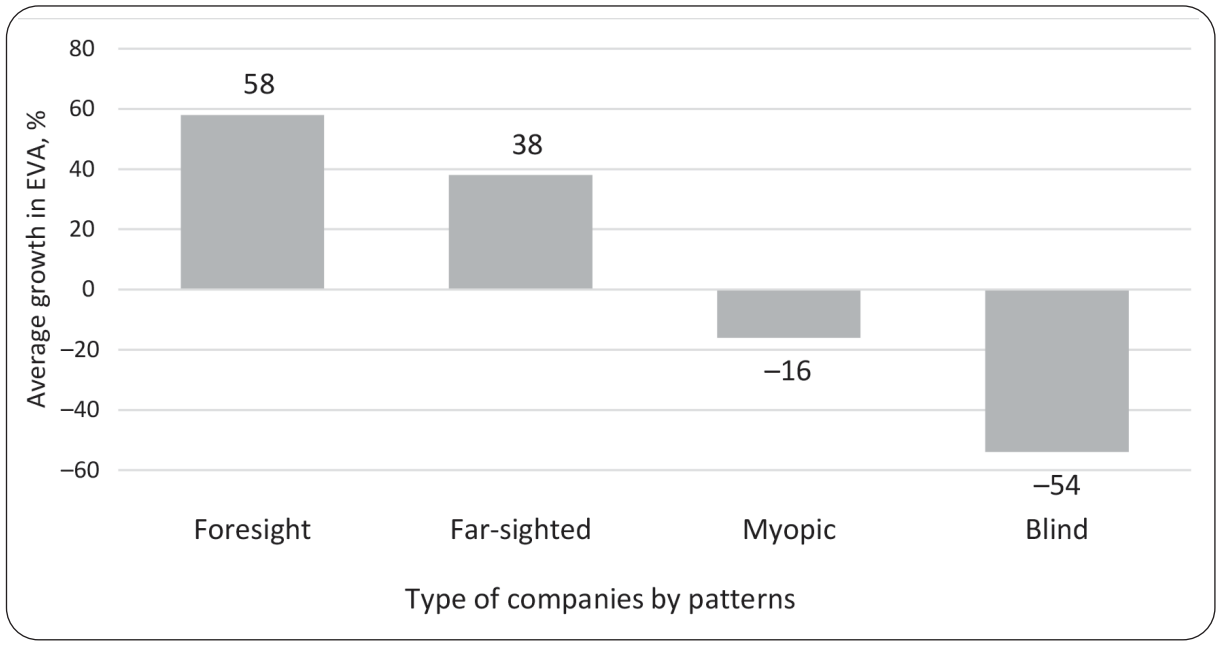

Fig. 3. Dependence between LTR and multi-period average growth of EVA, 2014–2019

strong correlation of 0.85 (Fig. 3). Thus, hypothesis *H2* is proved.

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.

CONCLUSIONS

We developed the relative horizon index which gauges the long- and short-term focus of public non-financial companies. We also performed empirical study of HI on Russian public non-financial companies from diverse industries over the period of 2014–2019. The study indicated that the energy and utility segments in the country have the largest share of long term-oriented companies, while the industrial, real estate and consumer goods segments have significant share of short-term oriented companies. The former is explained by: (1) the significant need for modernization in these sectors; (2) developed corporate government systems of firms; (3) limited incentives to accounting manipulation; and (4) a diverse set of stakeholders. Conversely, the latter is underpinned by low levels of investments in comparison to depreciation of real estate, industrial and consumer goods companies. It is also driven by higher incentives for these companies to play with accounting ratios.

We believe that our study expands the academic research in field of short-termism and raises important questions such as: (1) whether long-termism can positively affect company's economic profit and how long may it take; (2) if the shift toward responsible investments signals of long-term value creation and how it can be integrated into the horizon metrics; or (3) whether drivers of short-termism differ from industry to industry and across the countries and markets. However, the limitations of the study include the limited sample size and the focus on narrow markets as well as the absence of metrics of sustainable development in the HI. We

showed that: (1) the long-term strategic orientation of the firm is not immediately translated in sTable positive economic profit pattern; and (2) there is a positive relationship between company's decision to follow long-term strategic orientation (reflected in HI) and multi-period growth of its economic profit.

The future research directions include: (1) expanding the study on other emerging and developing markets; (2) studying industrial drivers of management myopia; (3) researching the influence of sustainable development practices on long-term management practices and firm value; (4) conducting an extended empirical analysis of the impact of long-termism on the creation of long-term value of companies; and (5) enrichment of horizon index by non-financial drivers of long-termism. We also consider analyzing the dependence of the company's resilience to external risks on the chosen strategic orientation (long-term or short-term).

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Разработка индекса горизонта для оценки долгосрочного развития российских нефинансовых компаний

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Стратегическая «близорукость», следование фирмой краткосрочным практикам стратегического управления ограничивают инвестиции в физический и интеллектуальный капитал. Инвесторы и менеджеры должны своевременно идентифицировать и противодействовать таким практикам. Однако существующие академические и практические исследования упускают из виду проблему краткосрочности на развивающихся рынках, не приводят надежные показатели стратегической «близорукости» или рассматривают только финансовые показатели в существующих индикаторах горизонта управления. В статье ликвидированы некоторые пробелы в исследованиях и построен индекс относительного горизонта, который оценивает стратегическую ориентацию публичных нефинансовых компаний из различных отраслей. Авторы применили самостоятельно разработанный индекс горизонта на выборке из 50 российских нефинансовых компаний за 2014–2019 гг. Анализ результатов расчета индекса показал, что наибольшее количество стратегически «дальнозорких» компаний в России работают в отраслях энергетики. Это объясняется значительными инвестициями в эту область,

развитыми системами корпоративного управления и разнообразным кругом заинтересованных сторон. Компании обладают ограниченными стимулами к манипуляциям в бухгалтерском учете. Однако значительная часть компаний в отраслях машиностроения, строительства и недвижимости, а также производства потребительских товаров являются стратегически «близорукими». Такая стратегическая ориентация объясняется недоинвестированностью указанных отраслей. При этом компании обладают развивающейся системой корпоративного управления, что оставляет стимулы для манипуляций в бухгалтерском учете. Результаты исследования продемонстрировали, что следование долгосрочной стратегии реализуется в устойчивый долгосрочный рост экономической прибыли компаний не мгновенно, а с течением времени. Тем не менее выявлена положительная корреляция между долгосрочным стратегическим выбором компании и темпами роста экономической прибыли компании за несколько лет. Полученные результаты могут быть использованы инвесторами, аналитиками и управляющими активами для скрининга стратегий компаний на долгосрочную ориентацию и сравнения их способностей создавать долгосрочный и устойчивый рост экономической прибыли.

Ключевые слова: индекс горизонта, долгосрочное создание стоимости, экономическая прибыль, стратегическое управление, краткосрочный стратегический фокус, стратегическая близорукость.

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Appendix

Results of calculation of HI, LTR and EPR, 2014–2019

Ticker	Company's name	Industry	Government ownership	HI	LTR	Median EVA spread, %	EPR
GAZP	PAO "Gazprom"	Energy	SOE	7.69	3	−5	1
TRNFP	PAO "Transneft"	Energy	SOE	7.65	3	−1	1
LKOH	PAO "Lukoil"	Energy	POE	7.54	3	−4	1
HYDR	PAO "RusHydro"	Utilities	SOE	7.54	3	−8	1
GMKN	PAO "MMC NORILSK NICKEL"	Materials	POE	7.50	3	11	2
RSTI	PAO "Rossiyskiye Seti"	Utilities	SOE	7.46	3	0	2
NVTK	PAO "Novatek"	Energy	POE	7.46	3	0	2
IRAO	PAO "InterRAO"	Utilities	POE	7.38	3	−3	1
ALRS	PAO "Alrosa"	Materials	SOE	7.27	3	8	3
CHMF	PAO "Severstal"	Materials	POE	7.19	2	13	2
NLMK	PAO "NLMK"	Materials	POE	7.08	2	1	1
PHOR	PAO "Phosagro"	Materials	POE	7.08	2	9	3
ENRU	PAO "Enel Russia"	Utilities	POE	7.00	2	1	2
GCHE	PAO "Cherkizovo Group"	Consumer goods	POE	6.96	2	3	2
YAKG	PAO "YATEK"	Energy	POE	6.96	2	5	2
RTKM	PAO "Rostelekom"	Communication and IT	SOE	6.88	2	−2	1
TATN	PAO "Tatneft"	Energy	SOE	6.85	2	−4	1
NKNC	PAO "Nizhnekamskneftekhim"	Materials	POE	6.85	2	6	3
MTSS	PAO "MTS"	Communication and IT	POE	6.81	2	3	3
AKRN	PAO "Acron"	Materials	POE	6.77	2	2	2
ROSN	PAO "Rosneft"	Energy	SOE	6.69	2	−3	1
MFON	PAO "Megaphon"	Communication and IT	POE	6.62	2	2	1
MGNT	PAO "Magnit"	Consumer goods	POE	6.58	2	−2	1
MAGN	PAO "MMK"	Materials	POE	6.50	2	3	1
KMAZ	PAO "Kamaz"	Industrials	POE	6.50	2	−3	1
RASP	PAO "Raspadskaya"	Materials	POE	6.46	1	5	1

Ticker	Company's name	Industry	Government ownership	HI	LTR	Median EVA spread, %	EPR
AFLT	PAO "Aeroflot — Russian Airlines"	Industrials	SOE	6.38	1	8	2
MTLR	PAO "Mechel"	Materials	POE	6.35	1	5	2
SNGS	PAO "Surgrutneftegas"	Energy	POE	6.27	1	−8	1
PRTK	PAO "Protek"	HealthCare	POE	6.27	1	2	3
AQUA	PAO "Russkaya Aquakultura"	Consumer goods	POE	6.27	1	−1	1
CHEP	PAO "Chelyabinsk Pipe Plant"	Materials	POE	6.23	1	7	3
TRMK	PAO "TMK"	Energy	POE	6.15	1	−1	1
BELU	PAO "Beluga Group"	Consumer goods	POE	6.15	1	−3	1
LSRG	PAO "LSR Group"	Real Estate	POE	6.00	1	2	1
IRGZ	PAO "Irkutskenergo"	Utilities	POE	6.00	1	1	2
SELG	PAO "Seligdar"	Materials	POE	5.81	1	2	2
VSMO	PAO "VSMPO-Avisma Corp"	Materials	SOE	5.73	1	−1	1
PRFN	PAO "Chekyabinsky Zavod Profilir"	Materials	POE	5.73	1	0	2
OPIN	PAO "OPIN"	Real Estate	POE	5.69	1	−9	1
KAZT	PAO "Kuibyshevazot"	Materials	POE	5.69	1	2	2
ABRD	PAO "Abrau-Durso"	Consumer goods	POE	5.65	1	−2	1
URKA	PAO "Uralkali"	Materials	POE	5.23	0	6	2
UWGN	PAO "United Wagon Co"	Industrials	POE	5.00	0	−1	1
ODVA	PAO "Mediaholding"	Communication and IT	POE	4.92	0	−102	0
APTK	PAO "Drugstore 36.6"	Consumer goods	POE	4.88	0	−14	1
TUCH	PAO "Tuchkovsky KSM"	Materials	POE	4.73	0	−13	1
RBCM	PAO "RBK"	Communcation and IT	POE	4.19	0	7	2
MORI	PAO "Morion"	Communication and IT	POE	3.92	0	−2	1