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For scientists, scientists, students, graduate students, representatives of business and public organizations and higher education institutions and a wide range of readers.

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FINANCIAL AND INNOVATION PERFORMANCE OF THE COMPANIES IN THE CONTEXT OF GREEN DEAL TARGETS

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The paper evaluates relationships between the financial, innovation, and environmental performance of the North American companies. We seek to reveal, how companies' performance is reflecting potential implementation of emissions reduction and climate targets. Systematization of scientific literature, selection of input and output variables based on the previous research results, statistical analysis and regression models as the main research methods are applied to achieve the research target. The analysis results provide insights that companies financial and innovation driven performance in North American region analyzed significantly concur with the implementation of climate targets. Both financial and innovation indicators of companies have a significant influence on environmental performance. Return on assets and leverage as financial performance indicators significantly interacts with carbon dioxide emissions as an indicator of climate targets. Research and experimental development expenditure as an indicator of innovation performance has a significant relationship on emission reduction targets as well.

Companies' financial performance can significantly impact environmental performance, as profit distribution enables the creation of innovation that reduce environmental pollution, and capital allocation increases innovation development possibilities [1, 2, 9]. Positive financial performance results directed to the expenditures of research and experimental development can create a stronger effect in reducing environmental pollution. In general, sustainable growth in the world cannot be achieved without spending on research and development and innovation activities [3, 4]. But also, companies that invest in environmental issues suffer from increased operating costs [5]. Therefore both - the financial and innovation performance of companies are examined in this research. Financial and innovation indicators are independent variables (see Table 1) that can influence environmental performance (dependent variable) [6, 7]. Environmental performance is the dependent variable that reveals the carbon emissions of companies and is calculated as CO₂ equivalent direct emissions (Scope 1) divided by market capitalization multiplied by 1000 [6].

Table 1. Description of the independent variables [6]

Part of performance	Name of ratio	Abbreviation	Formula
Financial performance	Company size	Size	$\ln(\text{assets})$
	Leverage	Leverage	$((\text{long-term debt} + \text{short-term debt})/\text{assets})$
	Tobin q	Tobinq	$((\text{assets} + (\text{market capitalization} * 1000) - \text{common equity})/\text{assets})$
	Return on Assets	ROA	$(\text{net income}/\text{assets})$
Innovation performance	Research and development (R&D) expenditures	R&D	R&D expenditures/assets
Multiplication of financial and innovation performance	Multiplication of R&D expenditures and net profitability	R&D& Profitability	R&D expenditures*(net income/net sales)

Following the constructed methodology, research sample is based on data collected from North America (USA and Canada) are provided in Tables 2, 3. Based on the developed regression models, a comparative analysis was performed. The analysis results from American region are presented in terms of descriptive statistics and regression models presenting. Based on the obtained results, the variables influencing the environmental performance of companies' financial and innovation performance are discussed.

In total, we collected 5,895 observations from companies in the North America region (Canada – 1035; USA – 4860). The data sample was for the same period: 2008 - 2019 (all in 12 years). Data was collected from these databases (Bloomberg, Orbis and Thomson Reuters). Statistical descriptions of the North America region are presented in Table 2.

Table 2. Statistical description of companies from American region

Variable	N	Mean	p50	SD	Min	Max
Size	5895	15.94272	15.9177	1.326244	9.375516	18.3
Leverage	5895	.2892479	.2711417	.177494	0	1.21
TOBINQ	5895	1.995926	1.604686	1.290115	.5617709	10.9
ROA	5895	.0827331	.0807809	.1009821	-1.148215	.395
R&D	5895	.0244217	.0019239	.0467759	0	.589
R&D& profitability	5895	.0010738	0	.0346025	-1.392053	.150
Environmental performance	5895	.2459101	.0134367	.7097484	.0000219	4.97

The results of the OLS regression models from the American region are provided in Table 3. Return on assets (ROA) of companies have a significant impact on environmental performance (negative relationship). Research and development (R&D) expenditures significantly influences the environmental performance (negative relationship). Leverage, as an indicator of a company's financial performance, has a significant influence on environmental performance (positive relationship).

Table 3. OLS models from American region

	model1	model2	model3	model4	model5	model6
Size	-0.055*** [0.015]	-0.056*** [0.015]	-0.056*** [0.015]	-0.056*** [0.015]	-0.046*** [0.015]	-0.052** [0.015]
Leverage	0.431*** [0.118]	0.416*** [0.121]	0.423*** [0.117]	0.407*** [0.121]	0.414*** [0.118]	0.367*** [0.118]
TOBINQ	-0.060*** [0.010]	-0.054*** [0.011]	-0.055*** [0.011]	-0.049*** [0.012]		
ROA	-0.525*** [0.140]	-0.556*** [0.141]	-0.642*** [0.167]	-0.674*** [0.170]	-0.764*** [0.157]	-0.941* [0.166]
R&D		-0.399 [0.300]		-0.397 [0.292]		-0.966* [0.264]
R&D& profitability			0.483** [0.237]	0.408* [0.232]		0.463** [0.232]
Constant	1.634*** [0.219]	1.640*** [0.219]	1.652*** [0.220]	1.657*** [0.219]	1.504*** [0.214]	1.596** [0.217]
Adjusted R-squared	0.361	0.361	0.361	0.362	0.352	0.357
Observations		5895	5895	5895	5895	5895

In summary, we provide evidence that the financial and innovation performance of companies has a significant relationship with the environmental performance. We provided that return on assets, R&D expenditure, and leverage are statistically highly significant for environmental performance in different regions around the globe. This proves that targeted capital allocations, sustainable assets usage can contribute to the long-term goals of the emissions reduction and climate targets regardless of regional differences. It also confirms that reduction of environmental pollution and achievement of climate neutralization goals is without geographical boundaries.

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