

Josef Krause
PhD (Ing.), Senior Lecturer, University of Economics, Prague, Czech Republic
4 W. Churchill Sq., Prague 3, 130 67, Czech Republic
krausej@vse.cz



COMPANY PERFORMANCE EVALUATION WITHIN ENVIRONMENTALLY FRIENDLY APPROACH

Abstract. The presented article deals with the important role that the voluntary activities of companies play in a responsible approach to the environment, and also with the growing importance of environmental protection. The research is oriented towards the companies which operate in the Czech Republic. The potential benefits of this approach for companies are discussed. Attention is especially focused on eco-labelling as one of these voluntary instruments. The author examines whether holders of the certification «environmentally friendly product» achieve higher performance in comparison with the industry average. Return on assets is chosen for the evaluation of performance. Further, the growing trend of expenditures on environmental protection is presented in the article through selected statistical data.

Keywords: business strategy; environmental protection; eco-labelling; sustainability.

JEL Classification: L10, M10, M21

Йозеф Краузе

PhD (инж.), старший преподаватель, Экономический университет, Прага, Чешская Республика

ОЦЕНКА ПРОИЗВОДИТЕЛЬНОСТИ КОМПАНИИ В КОНТЕКСТЕ ЗАЩИТЫ ОКРУЖАЮЩЕЙ СРЕДЫ

Аннотация. Представленная статья посвящена важной роли, которую играет добровольная деятельность компаний по заботе об окружающей среде, а также растущей необходимости ее охраны. Автором определены потенциальные преимущества такого ответственного подхода для чешских компаний. Особое внимание уделено рассмотрению эко-маркировки как одному из добровольных инструментов защиты экосреды. В статье показано, насколько обладатели сертификата «экологически дружелюбный продукт» достигают более высоких показателей развития по сравнению со средними показателями в отрасли. Для оценки производительности предприятий используется рентабельность активов. На основе выборочных статистических данных автором выявлена тенденция увеличения средств, выделяемых компаниями на защиту окружающей среды.

Ключевые слова: бизнес-стратегия; защита окружающей среды; экологическая маркировка; «экологически дружелюбный продукт»; устойчивость.

Йозеф Краузе

PhD (инж.), старший викладач, Економічний університет, Прага, Чеська Республіка

ОЦІНКА ПРОДУКТИВНОСТІ КОМПАНІЇ В КОНТЕКСТІ ЗАХИСТУ НАВКОЛИШНЬОГО СЕРЕДОВИЩА

Анотація. Представлена стаття присвячена важливій ролі, яку відіграє добровільна діяльність компаній, що опікуються навколишнім середовищем, а також необхідності його охорони. Автором визначено потенційні переваги такого відповідального підходу для чешських компаній. Особливу увагу приділено розгляду екомаркировки як одному із добровільних інструментів захисту екосередовища. У статті показано, наскільки власники сертификата «екологічно дружній продукт» досягають вищих показників розвитку порівняно із середніми показниками в галузі. Для оцінки продуктивності підприємств використовується рентабельність активів. На основі вибіркового статистичних даних автором виявлено тенденцію збільшення коштів, що виділяються компаніями на захист довкілля.

Ключові слова: захист навколишнього середовища; екологічне маркування; «екологічно дружній продукт»; стійкість.

Introduction. In recent years, the steadily increasing importance of environmental protection can be observed. Global climate change, natural disasters and various other areas related to the environment are being discussed. Companies must observe these trends, because environmental protection is included in the legislation of each country. They can also develop activities beyond legal obligations.

One aim of the presented paper is to highlight the growing expenditures on environmental protection and how they benefit the economy of a country. Another aim of the article is to use examples of voluntary measures taken by companies to care for the environment (particularly the environmentally friendly product certification), in order to assess the impact of the generally recognized benefits of these tools on the economic performance of companies.

Methodology. For evaluation of the expenditures on environmental protection development, data from statistical environmental yearbooks are used. It is processed in the Czech Republic, especially at the Czech Environmental Information Agency.

The next aim of the study is to verify whether product certification brings producers the benefits formulated in the introductory section, and whether it enables them to achieve better values of the selected indicators. Another aim of the presented paper is to find the relationship between consumers and the certification of an environmentally friendly product. In order to meet this objective, a list of products which are certified as

«environmentally friendly products» or which possess the EU «Flower» Ecolabel certification was compiled. The selected data were obtained from the financial statements of these companies, and the selected indicator of financial performance, which will be described further, was calculated. In order to obtain financial statements, the database Albertina was used together with information from the Commercial Register, where companies in the Czech Republic are obliged to publish their financial statements. The obtained data has been cleared of extreme deviations and is further used for statistical testing.

Simultaneously, the benchmarking model INFA of the Ministry of Industry and Trade of the Czech Republic was also used. Thanks to this model, it is possible to acquire information for various categories of the «NACE» classification, and thereby gain data for comparison with the selected group of companies.

The following hypothesis will be tested:

Certified companies have a higher return on assets than companies without this certification. For the purposes of this testing, a one-tailed t-test is used. A standard significance level of $\alpha = 5$ is required. A variety of indicators can be used in order to evaluate the financial performance of a company [1].

For evaluation of the impact of eco-labelling, the return on assets ratio was used.

Return on assets is calculated as:

$$\text{Return on Assets (ROA)} = \text{Earnings before Interest Rates} / \text{Assets}$$

This ratio is useful for evaluating the production performance of a company because it does not reflect the capital structure and cost of capital. This ratio is used not only by industrial companies, but also for evaluating the performance of companies in other fields [2].

Brief Literature Review. Environmental factors are among the factors that are relevant to business strategy. The evaluation of these environmental factors is an important element in the strategic analysis which underlies the formulation of strategy [3].

The analysis of environmental factors is mainly focused on factors such as waste management, use of recycled materials, environmental protection, occupational safety, etc. This ecological analysis also involves other factors that are important for business strategy (political, technological, macroeconomic, etc.) [4]. Environmental factors are also an important part of strategic corporate social responsibility [5].

The importance of environmental factors gradually increased during the second half of the last century. Some authors state that during the 70s and 80s of the last century there was a «legitimate birth of corporate environmental strategy» [6].

The element of environmental friendliness may be respected due to the legislation of a particular country or region, or through the voluntary behaviour of companies beyond the obligations imposed by legislation.

If a company decides to incorporate a friendly approach to the environment in its strategy, that fact could have a positive impact on its productivity. These effects can be divided into process and product. The procedural effects include: savings in materials costs, increased operating income, reduced downtime through more careful maintenance, better use of by-products, value-added utilization of waste, less energy consumption during production, savings resulting from safer working conditions, and reduced costs arising from waste management. The product effects include higher product quality, lower production costs, lower packaging costs, secure products, etc. [7].

Firms apply a friendly approach to the environment not only in production, but throughout the entire production and distribution process. It has been discussed, for example, that a competitive advantage can be obtained «through the supply chain network» [8].

Another benefit for businesses which achieve an «eco-advantage» is the ability to increase their income by selling products that will meet the needs of their customers in saving energy and reducing pollution. Another possible advantage is reaching customers on an emotional level, reaching the best employees, etc. [9].

Voluntary instruments. As mentioned above, companies can develop a variety of voluntary activities that are environmentally friendly. Voluntary environmental protection measures include environmental management systems, environmental labelling, lifecycle assessment methods, eco-design, cleaner production [10; 11] and environmental management accounting [12].

Eco-labelling. There are 3 ways to standardize environmental labelling [13]: eco-labelling (type I), self-declared environmental claims (type II) and environmental product declarations (type III). Eco-labelling (type I) denotes products and services. These products and services have fewer negative impacts on the environment compared with other similar products. These products are interchangeable with regard to consumption and use. The products must meet environmental criteria in each product category. Furthermore, these

products must be independently verified. Self-declared environmental claims (type II) point out the environmental aspects of a product or packaging. Examples of a company's own environmental assertions include «biodegradable» and «recycled». These statements must be verifiable. An environmental product declaration (type III) shows the impact of the product on the environment. Information must be verifiable on the basis of information provided by the promoter. An environmental product declaration (type III) gives information about the impact of the product on the environment. The method of evaluating the product lifecycle (LCA) is the basis for this statement.

Results

Expenditures on environmental protection, and the benefits of these expenditures

Public administration authorities can affect environmental protection in various ways. In the Czech Republic, some of the important methods of environmental protection include expenditures on environmental protection and the motivation of companies by preferring certain selected products or services.

Table 1 lists public expenditures on environmental protection according to the sources of funding.

The figures clearly show that there is a growing trend of public expenditures on environmental protection. In the Czech Republic, public expenditures in this area come from the government budget, state funds, the Ministry of Finance (formerly the National Property Fund) and local budgets. The largest share of expenditures on environmental protection is financed by local budgets. In 2012, one can notice a stagnation or even slight decrease in expenditures from all sources except state funds.

Table 2 shows the economic benefits arising from activities in the area of environmental protection.

The data suggest that environmental protection activities represent a significant revenue potential for companies. Table 3 presents the development of environmental protection expenditures by the public sector in selected countries of EU.

Tab. 1: Expenditures on Environmental Protection in the Czech Republic

Year	Government budgetary expenditures (in billions of CZK)	State funds expenditures (in billions of CZK)	National Property Fund / Ministry of Finance expenditures (in billions of CZK)	Local budgets expenditures (in billions of CZK)	Total
2002	4.95	4.13	3.23	17.33	29.64
2003	5.99	4.72	2.59	22.35	35.65
2004	6.61	4.2	3.56	23.21	37.58
2005	7.55	3.45	6.02	24.94	41.96
2006	16.25	2.41	4.61	27.45	50.72
2007	18.17	1.7	4.71	26.33	50.91
2008	11.76	2.05	3.59	26.98	44.38
2009	16.48	2.07	5.39	31.68	55.62
2010	18.47	4.44	3.57	35.7	62.18
2011	19.98	10.9	3.39	37.01	71.28
2012	19.86	11.27	3.39	32.94	67.46

Source: [14]

Tab. 2: The Economic Benefits Arising from Activities in the Area of Environmental Protection in the Czech Republic (in billions of CZK)

Indicator	Year							
	2005	2006	2007	2008	2009	2010	2011	2012
Revenues from the sale of environmental protection services	22.055	23.358	32.384	33.64	35.36	39.99	43.56	41.721
Revenues from the sale of by-products, total	8.043	6.308	7.309	10.63	6.7	10.62	14.97	12.678
Savings from the re-use of by-products	1.284	1.217	1.439	2.84	1.2	0.98	1.15	1.148

Source: [15]

Tab. 3: Environmental protection expenditures by the public sector in selected EU countries (% of GDP)

Country	Year					
	2006	2007	2008	2009	2010	2011
EU-27	0.64	0.62	0.65	0.74	0.7	0.66
Bulgaria	0.39	0.52	0.59	0.64	0.51	0.6
Czech Republic	0.51	0.36	0.35	0.43	0.52	0.51
France	0.57	0.58	0.66	0.7	0.71	:
Italy	0.8	0.8	0.84	0.89	0.88	0.88
Luxembourg	0.8	0.67	0.67	0.85	0.71	0.79
Romania	0.54	0.57	0.58	0.59	0.81	0.96

: - not available
Source: Eurostat [16]

The share of public expenditures in the gross domestic product does not exceed 1 percent. In average, it is about 0.65% in the countries of the European Union. In the Czech Republic, the share is around 0.5%, which is slightly lower.

Table 4 shows the development of environmental protection expenditures by industry.

Tab. 4: Environmental protection expenditures by industrial companies/manufacturers in selected EU countries (% of GDP)

Country	Year					
	2006	2007	2008	2009	2010	2011
EU-27	0.42	0.43	0.43	0.42	0.42	0.41
Bulgaria	1.31	1.02	1.11	0.77	0.8	0.69
Czech Republic	0.83	0.79	0.78	0.79	0.8	0.86
France	:	0.14	:	:	0.24	:
Italy	0.85	0.82	0.71	0.71	0.73	0.76
Luxembourg	:	:	:	:	:	:
Romania	0.67	0.62	0.78	0.69	0.82	0.76

: - not available
Source: [17]

On average, the share of expenditures for industrial companies is about 0.4 percent in the countries of the European Union. This value is about 0.2 percentage points lower than the share of public expenditures.

The data show that public authorities play an important role in environmental protection. The share of public administration expenditures on environmental protection in the selected European Union countries was larger than the expenditures of industrial companies.

Green Public Procurement represents another way to take an environmentally friendly approach, namely support for eco-labelled products. In the Czech Republic, products with this label are favoured when public contracts are awarded. This procedure is governed by the Resolution of the Government of the Czech Republic No. 465. Recently, specific methodologies for ICT and furniture purchases have been developed which reflect the efforts to favour environmentally friendly products in public administration.

Evaluation of the impact of a chosen certification on company performance

Figure shows the number of Ecolabel holders in the Czech Republic from 2006 to 2012.

The number of Ecolabel holders grew in the period from 2006 to 2012. The highest number of Ecolabel holders was in 2010, with 102 certified holders. However, the number of certified holders dropped to 90 the following year, and the number of certified holders was only 78 in 2012.

The above-mentioned bibliographical research shows that a company which produces environmentally friendly products can achieve lower costs as a result of more efficient technology, less waste, lower fees for the emission of substances into the environment, etc. At the same time, the company's profits

can rise thanks to the greater attractiveness of these products for customers.

Table 5 shows the number of granted licenses, divided according to product family.

Currently, there are 19 certified product families in the Czech Republic. According to the number of granted licenses, the most important product families are furniture (31), water-soluble coatings (24), polyolefin pipes (10) and accommodation services for tourists (9). In other categories, there are 5 or fewer licenses.

Approximately 70 companies hold licenses for environmentally friendly products in the Czech Republic. The structure, according to company size, is as follows: 51% of companies belong to the category of small companies with up to 50 employees; 37% of companies belong to the category of medium-sized companies with 51 to 250 employees; 13% of companies belong to the category of large companies, which employ over 250 workers.

Table 6 shows the average values of return on assets from 2007 to 2011. Next, it also lists the minimum and maximum values of this ratio and the average values for the manufacturing industry. The last row shows the minimum significance level for confirmation of the hypothesis formulated in the previous section.

In the selected years, the average values of the returns on assets of companies that have certified products were lower than the average values in the manufacturing industry. Thus the tested hypothesis cannot be confirmed for any of the chosen periods. This corresponds to the required minimum significance levels specified in Table 6. The descriptive characteristics listed in the table also show that the achieved ROA values were substantially variable in the analyzed companies.

Conclusion. Statistical data show that expenditures on environmental protection increased in recent years in the Czech Republic (considered in absolute sums). Their share of the gross domestic products of the Czech Republic and most countries of the European Union has been moving at approximately the same level in recent years. Activities in the field of environmental protection have an impact on a company. Benefits, in the form of revenues from the provision of environmental services and other products, are in the billions of Czech crowns.

The executed research did not confirm that certification as an «environmentally friendly product/service» has a positive impact on the performance of companies. Further research should explore the reasons why the expected benefits from this approach are not achieved.

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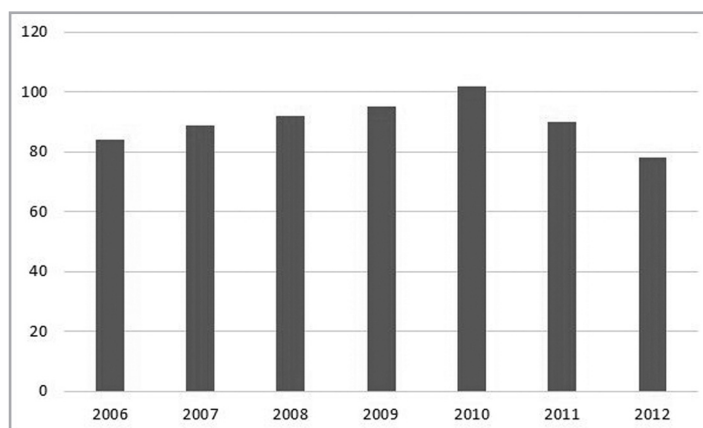


Figure : Number of Ecolabel Holders in the Czech Republic from 2006 to 2012
Source: [18]

Tab. 5: Number of «Environmentally Friendly Product» Licenses Granted in the Czech Republic in 2013

Number of licenses according to product family	
Metal furniture	1
Paper bags and shopping bags	1
Spreading materials used for winter maintenance service	1
Wood furnaces	1
Mulching materials from waste paper	1
Adsorbents	1
Printed paper	2
Water-soluble glues and sealants	2
Thermal insulation made from waste paper	2
Molded pulp products	2
Office and administrative services	2
Cleaning products and detergents	4
Paperboard, cardboard and products made from them	5
Laundry detergents	5
Textile products	5
Accommodation services for tourists	9
Polyolefin pipes	10
Water-soluble coatings	24
Furniture	31

Source: [19]

Tab. 6: Returns on Assets of companies having certification environmentally friendly product

Item	Year				
	2007	2008	2009	2010	2011
Average ROA ratio of label holders (in %)	7.38	7.54	5.09	5.27	3.79
Minimum ROA (in %)	-19.00	-13.96	-8.13	-12.96	-12.52
Maximum ROA (in %)	26.15	33.42	19.58	26.68	13.66
Average for the manufacturing industry (in %)	11.58	8.81	5.77	7.30	7.20
Significance level	1.00	0.83	0.78	0.96	1.00

Source: Calculations by the author based on the financial statements of the individual companies

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