

Complex performance matrix revisited

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Abstract: The aim of this study is to revisit the fundamentals and the practical usability of the Complex Performance Matrix (CPM). The CPM was established as a straightforward evaluation tool that offers comprehensive overview the financial and non-financial performance of organisations. Based on the literature review, the Author suggests that CPM should be a sound tool to measure complex corporate performance and could be an integrate part of the managerial dashboard.

Keywords: Corporate Social Responsibility, financial performance, non-financial performance

JEL: M14, M21

1 Introduction

With global problems (e.g. increasing social inequalities, migration, extreme weather conditions, etc.) becoming part of our everyday life, sustainability and responsibility for impacts of own activities are considered some of the most dominant topics nowadays. Although some authors claim that due to its too frequent use, the concept of sustainability is unsustainable itself [9], the climate responsible lifestyle and economy are important factors of social discussions.

Although some communities made significant progress to solve global problems including “global commons, nature, greenhouse gas emissions and climate change, and the deep global interconnection of economies and supply chains that mean anything less than global co-operation produces sub-optimal solutions” (Schanes et. al, 2018:7). The United Nations’ Sustainable Development Summit in 25 September 2015 adopted the agenda entitled “Transforming our world: the 2030 Agenda for Sustainable Development” and the related Sustainable Development Goals (SDGs). These documents could serve as important instruments of global co-operation. Although deviation from the fulfilment of the SDGs cannot be

sanctioned, the monitoring process may contribute to the maintenance of social and political support. Compared with the former UN Agenda (Millennium Development Goals, MDGs), the SDGs have two significant novelties. First, whereas MDGs focused on the problems of the developing world (such as hunger, sanitation, basic infrastructures, etc.), the SDGs address global challenges faced by both developed and developing nations. Second, unlike the MDGs, the SDGs explicitly turn to all businesses to apply their creativity and innovation to respond to sustainable development challenges [22].

Theoretical frameworks were elaborated to understand better the non-financial performance of corporations. The most cited frameworks include Corporate Sustainability (CS), Corporate Social Responsibility (CSR), Corporate Social Performance (CSP), Triple Bottom-Line (TBL or 3P) and ESG criteria. There are many similarities in the abovementioned approaches. First, sustainability is built upon three pillars (environmental, societal, economical). Second, weak definition of sustainability is assumed, namely substitution between artificial and natural capital is expected [11]. Third, the calculation of complex performance (i.e. the sum of performance on the three pillars of sustainability) is problematic. The Complex Performance Matrix (CPM) can be a sound method concerning the last issue [21]. Although CPM provides only a comprehensive view of the complex performance, it can be used as a part of a management information system. The objective of this paper is twofold: (1) to answer the questions and issues emerged since the release of the former article; (2) to reassess and improve the theoretical foundations of CPM.

In the following section the relevant literature is overviewed. The subsequent section contains the methodology, and the next one results. The last section includes the conclusions.

2 Different approaches of corporate responsibility

The objective of this paper is to assess the theoretical fundamentals of the CPM and answer the questions that have emerged since the publication of the method. Therefore, only the relevant literature is reviewed in this section.

The CPM is associated with the literature of corporate sustainability (CS) and corporate social responsibility (CSR). CS is a specific stream of literature that “deals directly with the role of business, i.e. economic value creation, when it comes to ecological and social concerns” (Vildåsen et. al, 2017:40). Corporate social responsibility can be defined as the complex of economic, legal, ethical and philanthropical responsibilities of a corporation [2]. Though Carroll [2] urges that legal responsibilities should be part of CSR, there is no consensus about it in the relevant literature. According to the definition of the European Commission (EC),

CSR is a “concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis” [3]. The EC highlights that CSR “concerns actions by companies over and above their legal obligations towards society and the environment” [3].

Gering [5] identifies three turning-points in the CSR literature: (1) the so-called Friedman-doctrine according to which the one and only responsibility of the firm is to maximise shareholder’s value; (2) the CSR pyramid approach of Archie B. Carroll according to which financial performance and CSR are complementary functions; (3) the approach of business with political responsibility.

There are no strict borders among the abovementioned approaches. Although Friedman [4] writes that the single responsibility of the business is to maximise profits (and thereby maximise shareholder’s value) but he recognises as well that businesses must conform to the basic rules of society embodied in law and in ethical custom. That means that managers who work according to the Friedman-doctrine conform the economic, the legal and the ethical dimensions of the CSR pyramid, and reject only its philanthropical part. It is important to remark that businesses are reactive actors in both approaches, namely their responsibility is based on societal expectations. That reactive role is verified by the theory of explicit and implicit CSR [12]. The authors claim that based on the theory of varieties of capitalism (VoC) [7], the CSR practices of developed countries can be divided into two types: (1) since the role of the state is weak in liberal market economies (LMEs), the responsibility of businesses is based on societal expectations, therefore such a CSR is labelled explicit; (2) since the role of the state and other actors (such as industry chambers, trade unions, etc.) is more important in coordinated market economies (CMEs), many attributes of business life (e.g., environmental standards, industrial relations, wages, etc.) are codified, therefore CSR practices are rather implicit.

The approach of business with political responsibilities is relevant mainly for multinational companies (MNCs) and transnational companies (TNCs), because due to the size of these entities, few states or organisations can influence their activities and behaviour. At the same time through their operations (by the provision of goods and/or services, investments, workplaces, work relations etc.) the impact of these corporations on the life of the citizens is significant in many countries. Therefore, Scherer et. al [17] argue that MNCs and TNCs cannot behave in a reactive way anymore, but they should be proactive, and they should undertake societal activities based on their own values and norms.

There are many tools available to help to report on sustainability related activities of organisations (such as companies). These so-called sustainable reporting tools (SRTs) can be divided into three groups [18]: (1) reporting frameworks (e.g., GRI, UN Global Compact etc.); (2) sustainability related standards (e.g., ISO 14001, ISO 26001, EMAS, OHSAS 18001, etc.); (3) third party ratings and indices (e.g.,

Dow Jones Sustainability, FTSE4Good etc.). Harangozo [8] amends this with a fourth element, the strategy that comprises tools such as the Sustainability Balanced Scorecard (SBSC) or the ecoefficiency approach of WBCSD. The CPM measures the dynamics and the relative performance of business compared to its competitors, thus it is part of the strategic tools. Nevertheless, data can be collected from different reporting frameworks.

The Global Reporting Initiative (GRI) is the global standard among sustainability reporting frameworks [13]. This fact is based on the survey of KPMG [10] stating that 82 percent of sustainability reports of the 250 largest companies mention GRI. The main advantages of this framework include its well-elaborated reporting principles and the ready-to-use indicator set provides assistance in the reporting process. Furthermore, it helps to compare the performance of different entities due to its standardised approach. The indicator set of GRI is grouped into three categories, from which three (economic, environmental, societal) are identical to the triple bottom-line approach of John Elkington, whereas the fourth group comprises comprehensive indicators that concern information such as size of the entity, the number of employees etc.

Nevertheless, we highlight two GRI-related problems: (1) reporting according to the GRI is voluntary, hereby organisations have the opportunity to pick out only indicators that are favourable for them, thus concerns related to the holistic approach of sustainability emerge [15]. It is also remarkable that this cherry picking behaviour may contribute to the increasing popularity of sustainability reporting as well [15]; (2) regarding non-customised (i.e. ready-to-use) indicator sets, there is a risk that matching happens “without verifying, or even considering, the indicator-indicated fact relation”[6].

3 Methodology

We assess the practical usability of the method in this paper. Since it has not been applied in the practice yet, the methodology of this paper is mainly theoretical, based principally on the available literature.

Our results are associated with the main attributes of the method. These questions are as following: (1) the objective of the analysis – in what cases and for what is the method useful; (2) the analysed firms – what kind of companies can be assessed; (3) the indicators – which indicators can be applied in the analysis? (4) the way of comparison – how to compare the companies; (5) the results and conclusions – what types of results are expected from the method?

4 The structure of the CPM

The structure of the CPM is quite simple: the method uses a coordinate system where at least three but maximum four indicators are presented simultaneously. That solution contributes to performance measurement for the following reasons: (1) since at least three indicators are shown simultaneously, the CPM is suitable to compare a financial indicator (e.g., the profit rate) and a non-financial indicator (e.g., greenhouse gas emission per product) with a third, independent indicator (e.g., firm size or turnover); (2) the method is suitable to show the relative performance because the scale of the indicators is identical, where the extreme values are identical with the worst and best performer businesses; (3) for dynamic analysis, indicators are proposed to be used for more periods.

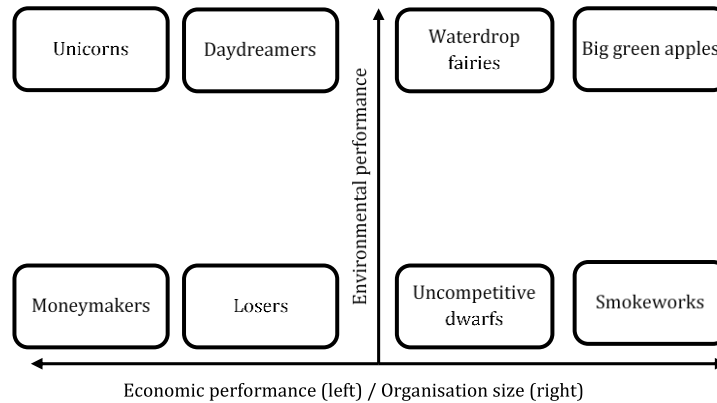


Figure 1 The structure of the CPM (Szennay, 2016)

The practical usability of the CPM is discussed in the following subsections according to the questions asked in the methodology section.

4.1 The objective of the analysis

The objective of the CPM is to assess the market position of a firm based on its financial and non-financial performance. The method lays emphasis on market trends rather than the volume of data; therefore, it can be a sound part of the management information system. The analysis can be conducted in two ways [21]: (1) as a market analysis method; (2) as a portfolio analysis method.

In the case of market analysis, the present and former performance of the analysed corporation and its competitors is compared according to selected indicators. The analysis can reveal trends on the relative performance in the reference period. The main benefits of the CPM are the following: (1) the performance of the company can be compared to its own former performance, and thus, positive or negative

trends can be revealed; (2) the performance of the firm is compared to that of its competitors and this makes the evaluation of relative market position possible. Furthermore, it filters out distortions caused by other industries. The objective results of the analysis may be threatened by the inadequately selected reference period and/or competitors.

Regarding companies with more divisions and/or subsidiaries, the CPM can be used as a portfolio analysis tool as well. The objective of this analysis is to assess and compare the performance of divisions and/or subsidiaries. The benefits of the CPM are in this case the following: (1) a comparison of the performance of different divisions and/or subsidiaries as well as their contribution to the performance of the firm as a whole is possible; (2) the change of the performance of divisions and/or subsidiaries can be stated, and thus the best and worst performer part of the firm can be identified as well; (3) the performance of divisions and/or subsidiaries can be compared with that of competitors. It is important that the results and conclusions of the portfolio analysis may be threatened by intrafirm transactions such as transfer prices, inadequate indicator calculations, etc.

4.2 The analysed firms

When the CPM is used as a market analysis tool, adequate selection of competitors may influence the conclusions significantly. As Szennay (2009) highlights, the headquarter country of corporations may be relevant due to the different societal expectations of the countries. That implies that sustainability-related decisions are influenced by societal expectations, that is to say, the author suggests implicitly the use of the CSR pyramid approach and company without political responsibilities. Since shareholders and other stakeholders (such as employees, local communities, vendors, etc.) are interested in the results of the activities (e.g., the rate of return, work relations, price and quality of product/services etc.), it is inadequate to make such limitations.

Nevertheless, the external operational environment may influence the operations of companies. As Matten and Moon [12] claim, corporations of liberal market economies engage sustainability related actions on a voluntary basis, whereas such actions in coordinated market economies are forced mainly by laws, regulations, standards and norms, therefore voluntary activities are rather rare. This finding is consistent with the results of Prakash and Potoski [1], that is to say the greenhouse gas (GHG) emission of corporations with ISO 14001 is significantly lower than the emission of companies without such standard in case of countries with loose environmental regulations. There is no substantial difference in countries with strict environmental regulations.

4.3 Indicators

Because of the specific feature of the coordinate system, at least three but maximum four indicator can be used simultaneously. With such an aggregation of data, the CPM can only satisfy managerial needs, therefore it may be used as (an element of) a dashboard, where indicators included in the quartiles are modifiable.

The indicators used in the analysis must fulfil the following minimum criteria: (1) the methodology and the indicated facts should be identical for each analysed firm and period; (2) the indicators should be conforming with SMART criteria, i.e. specific, measurable, achievable, real and time-bound [6]; (3) the indicators should be relevant, in other words, they should be set according to the indicated fact [6]; (4) in order to measure complex performance, indicators of financial and non-financial performance should be used simultaneously.

For better understanding we suggest the use of a financial and a non-financial indicator on the horizontal axis and one or two comprehensive indicators (e.g., the number of employees, total assets, market capitalisation, etc.) on the vertical axis. Though Szennay [21] argues that societal indicators should be excluded from the analysis, because they exert insignificant influence on non-financial performance [14], that standpoint is inadequate for two reasons: (1) one of the most quoted criticism of TBL is that the performance of each dimension is measured on different scales [19], therefore they can be summed only with limitations [20], furthermore the frameworks provides a chance to compensate the bad performance of a dimension with an another; (2) in case of GRI, the ratio of societal indicators is too high [13]. Accordingly, the use of indicators from each dimension is suggested.

4.4 The way of comparison

The CPM uses indicators not in natural units (such as dollars, metric tons, etc.) but in a common scale. Its importance is twofold. On the one hand, in case of a common scale the result can be assessed visually. On the other hand, in this case the difference of the units does not matter. Though in the example of Szennay (2016) scale of 0 to 1 is used, that scale can be 0 to 100 or another scale as well.

4.5 Results and conclusions

Many conclusions can be drowned on the basis of the CPM. Making conclusions is the task of the analyst. However, we highlight the most important opportunities.

As Szennay [21] claims that “the conclusion is fairly clear only if there is/are company(ies) in corners”. Companies in corners can be illustrated with names as well. Under normal market conditions, however, companies are expected to be

outside these fields. Therefore, it is attractive to make a dynamic analysis, because it allows to analyse performance changes over time, even the absence of changes can provide information on performance. We suggest the use of conclusions according to its wider context and the objectives of the company.

It is remarkable that economic performance can be maximised in most cases according to the economies of scales, while there is no evidence from such determinations in case of non-financial performance. Therefore, it is suggested analysing relationship between growing size and change of non-financial performance.

Conclusions

The objective of this paper is to revisit the usability of the CPM and to answer questions having emerged since the publication of original report (see Szennay, 2016). Since the CPM has not been used in practice yet, it was a legitim claim that the method may have problems or shortcomings that hinder its application. We assessed the method on the basis of domestic and international literature accordingly in order to determine whether the CPM is applicable in practice and if the answer is yes, under what conditions.

The CPM belongs to sustainability reporting tools and it can be applied in strategy making and as a part of management information systems. According to our analyses, there are no conditions that can hinder the practical use of the method. It can be used even in more cases and with a greater determination power than we expected in the original paper in 2016. Our main conclusions are as follows: (1) the population of analysable companies is influenced by societal expectation factors less than expected. We assume that companies of developed countries and companies operating in the markets of developed countries can be assessed by the method without significant limitations; (2) there is no well-founded reason for rejecting societal indicators. Furthermore, we suggest the creation of a managerial dashboard, where indicators of each quartile can be modified dynamically. That suggestion can contribute to the strengthening of the holistic approach; (3) we argue that the use of a common scale in the analysis is necessary, because without that conclusions can be significantly distorted.

The main limiting factor of our results is the absence of practical use. Though the CPM is fairly sound according to its theoretical fundamentals and demonstrative applications, the method has not been applied in real market conditions.

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References

- [1] Barkemeyer, R., – Preuss, L. – Lee, L. (2015): On the effectiveness of private transnational governance regimes—Evaluating corporate sustainability reporting according to the Global Reporting Initiative. *Journal of World Business*, 50., 312-325
<https://doi.org/10.1016/j.jwb.2014.10.008>
- [2] Carroll, A. (1991): The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*, 4, 39-48. [https://doi.org/10.1016/0007-6813\(91\)90005-G](https://doi.org/10.1016/0007-6813(91)90005-G)
- [3] European Commission (2014): Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions
[http://www.europarl.europa.eu/meetdocs/2009_2014/documents/com/com_com\(2011\)0681_/com_com\(2011\)0681_en.pdf](http://www.europarl.europa.eu/meetdocs/2009_2014/documents/com/com_com(2011)0681_/com_com(2011)0681_en.pdf) Downloaded: 17 August.2018
- [4] Friedman, M. (September 13, 1970): The Social Responsibility of Business is to Increase its Profits. *The New York Times Magazine*.
<https://www.colorado.edu/studentgroups/libertarians/issues/friedman-soc-resp-business.html> Downloaded: 28May 2018
- [5] Gering, Zs. (2014): Profit es/vagy kozossegi szerepvallalas? Vallalati tarsadalmi felelossegvallalas vezetoi szemmel. *Vezetestudomany*, 12, 53-66.
- [6] Hak, T. – Janouškova, S. – Moldan, B. (2016): Sustainable Development Goals: A need for relevant indicators. *Ecological Indicators*. 60, 565-573, <https://doi.org/10.1016/j.ecolind.2015.08.003>.
- [7] Hall, P. – Soskice, D. (2004): An introduction to varieties of capitalism. In P. A. Hall, D. Soskice, *Varieties of capitalism. The institutional foundations of comparative advantage* (old.: 1-70). New York: Oxford University Press.
- [8] Harangozo, G. – Szechy, A. – Zilahy, Gy. (2016): A fenntarthatosagi labnyom-megkozelitesek szerepe a vallalatok fenntarthatosagi szempontu teljesitmenyertekeleseben. *Vezetestudomany / Budapest Management Review*. 47, 2-13.
- [9] Kiss, K. (2012): Nehany mondat a fenntarthatosagrol. (Egy fogalom tundoklese es bukasa). *Magyar Nemzet*, 19 July 2012.
http://epa.oszk.hu/02000/02065/00005/pdf/EPA02065_gazdasagetika_2013_05_kiss%20karoly_%20nehany%20mondat.pdf Downloaded: 17 August 2018

- [10] KPMG (2013): The KPMG Survey of Corporate Responsibility Reporting 2013 <https://assets.kpmg.com/content/dam/kpmg/pdf/2015/08/kpmg-survey-of-corporate-responsibility-reporting-2013.pdf> (accessed 12 April 2018)
- [11] Malovics, Gy. – Bajmocy, Z. (2009): A fenntarthatóság közgazdasági értelmezései. *Közgazdasági Szemle*. 464-483
- [12] Matten, D. – Moon, J. (2008): „Implicit” and „explicit” CSR: A conceptual framework for a comparative understanding of corporate social responsibility. *Academy of Management Review*. 33., 404-424
<https://www.dirkmatten.com/Papers/Matten/Matten&Moon%20in%20AMR%202008.pdf>
- [13] Moneva, J., M. - Archel, P. – Correa, C. (2006): GRI and the camouflaging of corporate unsustainability, *Accounting Forum*. 30, 121-137 <http://dx.doi.org/10.1016/j.accfor.2006.02.001>
- [14] Ng, A.C. - Rezaee, Z. (2015): Business sustainability performance and cost of equity capital, *Journal of Corporate Finance*, 34, 128-149
<http://dx.doi.org/10.1016/j.jcorpfin.2015.08.003>.
- [15] Pinter, L. - Hardi, P. – Martinuzzi, A. – Hall, J. (2012): Bellagio STAMP: Principles for sustainability assessment and measurement. *Ecological Indicators*. 17, 20-28 <https://doi.org/10.1016/j.ecolind.2011.07.001>
- [16] Schanes, K. – Jäger, J. – Drummond, P. (2018): Three Scenario Narratives for a Resource-Efficient and Low-Carbon Europe in 2050. *Ecological Economics*. In Press., <https://doi.org/10.1016/j.ecolecon.2018.02.009>
- [17] Scherer, A. - Palazzo, G. – Matten, D. (2009). Introduction to the Special Issue: Globalization as Challenge for Business Responsibilities. *Business Ethics Quarterly*, 3, 327-347. Downloaded: 23 May 2018
<http://www.dirkmatten.com/Papers/RZ/Scherer%20Palazzo%20Matten%20BEQ%202009.pdf>
- [18] Siew R.Y.J. (2015): A review of corporate sustainability reporting tools (SRTs). *Journal of Environmental Management*. 164, 180-195
<https://doi.org/10.1016/j.jenvman.2015.09.010>
- [19] Shridhar K. – Jones G. (2013): The three fundamental criticisms of the Triple Bottom Line approach: An empirical study to link sustainability reports in companies based in the Asia-Pacific region and TBL shortcomings. *Asian Journal of Business Ethics*. 2, 91-111
<https://doi.org/10.1007/s13520-012-0019-3>
- [20] Slaper, T.F. – Hall, T., J. (2011): The Triple Bottom Line: What Is It and How Does It Work?, *Indiana Business Review*. Spring 86,
<http://www.ibrc.indiana.edu/ibr/2011/spring/article2.html> Downloaded: 28 April 2018
- [21] Szennay, A. (2016): Possibilities of corporate financial and non-financial performance measurement. *Journal of Financial Management and Accounting*, 4., 2 pp. 59-69

- [22] United Nations (2015): Transforming our world: the 2030 Agenda for Sustainable Development.
http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E
(Downloaded: 12 April 2018)
- [23] Vildåsen, S.S., Keitsch, M., Fet, A.M. (2017): Clarifying the Epistemology of Corporate Sustainability. *Ecological Economics*, 138., 40-46
<https://doi.org/10.1016/j.ecolecon.2017.03.029>