



Developed Model for Debts Relief Decision Based on Financial and Accounting Reports Applied on PORT TRANS EUROPE SA

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ABSTRACT

Business agents are today facing with a dynamic economic environment transformed by the direct effects of the economic crisis. In these circumstances the managers of the entities are forced to adapt to the economic activities by various types of decisions. A special attention is paid to financial decisions. Financial issues touch all aspects of economic life of an agent. In this context are fitting the management of debts. Management of debts problem can be addressed through a decision-making model. In this paper we propose the development of a multidimensional decision to be strengthened the management of debts of PORT TRANS EUROPE SA, in order to reduce them.

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1. Introduction

Information base source for decision making is in the past, and proper evaluation and comparison of variants targeting horizon decision that relate to future consequences will be obtained in the future.

Methods and models used are extremely varied due to the variety of decision situations. Decision making methods are different, having regarded to:

- ◆ How important are the issues addressed, the result of the consequences of decisions to be approved;
- ◆ Certainty of information that can be used, the factors that can influence;
- ◆ How big is the decision horizon;
- ◆ The decision criteria and their number;
- ◆ Decision problem and its reflection in the company.

For each decision problem has to be developed a model that should contain data accuracy assessments and grounding methods.

2. Dimensionality in decision process

To evaluate the action lines are considered one or more decision criteria. One decision criterion can be used for decision making when the criterion considers an important objective of the company.

Regarding managerial decisions, you can use unique objectives such as increased turnover, profit growth, increased financial liquidity, reduce costs of production. These criteria have different meanings in terms of how speech can be relative or absolute values. On the horizon decision on criteria results can talk short, medium or long term. Decision problems are multidimensional, with multiple plans consequences, but in practice most of them are one-dimensional. Thus, implementation of decisions appear serious consequences on the organization, which means that the previous decision may be revoked or be major corrections. For multidimensional decision making must be addressed estimate the relative importance of decision criteria. Reflecting the degree to which managers want to make the decision criteria is given by the coefficients of importance. To do this, you can use different ways that can be both direct estimate of the coefficients of importance of decision criteria based on subjective assessments, or their calculation through a comparison. When evaluating coefficients (k_j) by the comparison criteria for a number of people, you can use the formula:

$$k_j = \frac{\sum_i N_{ij}}{\sum_j \sum_i N_{ij}} \text{ where:}$$

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$i = \overline{1, R}$ - is the number of the person making the hierarchy of decision criteria

x_i ; N_{ij} - is the score awarded to the person "i" criterion x_j

Comparison results are shown in a matrix D, where the elements

if x_i is more important than x_j ($x_i > x_j$), then $D_{ij} = 1$;

if $x_i < x_j$, then $D_{ij} = 0$;

if $x_i \sim x_j$ have the same importance, the two criteria will be represented in matrix D by a single line and column;

criteria themselves dominate, so $x_i > x_j$ and $d_{ii} = 1$.

3. Develop decision-making model

Proposed decision model provides a framework for identifying the best methods of management company debt.

Description of the model

In making a decision to reduce debt, decision style and level of participation required of the group are influenced by three important factors:

- ◆ Quality of decision: how important is finding the right solution? As required quality is much higher opinion should be requested several persons.
- ◆ Involvement: how important it is to support other decision? The more necessary with the approval of others should be involved more people.
- ◆ Time available: while it is available for decision making? As more time is even more people would be involved.

Model is recommended to be used in economic crisis or development of financial pressure on the company to more quickly identify what must be done.

Table 1. Submission criteria

The decision criteria		Departments participate in decision making	
X1	Level (amount) in trade payables	P 1	Financial department
X2	Level of trade receivables	P 2	Juridic department
X3	Stock value	P 3	Human resource department
X4	Level (amount) of financial liabilities	P 4	Supply compartment
X5	Level (amount) of social debt	P 5	Marketing department (sales)
X6	Liquidity level (inv t.s. + banks)	P 6	Accounting department
X7	Distribution of profit	P 7	Investment compartment
X8	Cash flow	P 8	Management department
X9	Net profit		
X10	Turnover		
X11	Working capital requirement		
X12	Value of fixed assets		

Source: Elaborated by the author

To determine which of these ways are most recommended for debt relief is necessary to answer some questions in the affirmative, negative and then build a decision-making scheme.

There are five questions:

1. Debts have reached maturity?
2. There are funds for payment?
3. Cover claims receivable amount of debt?
4. Can renegotiate payment terms?
5. What are the methods that can be performed to obtain funding?

Relations between hierarchical decision criteria for each department directly involved in decision-making are:

Table 2. Ordering criteria

Order by degree of importance (descending)	p1	p2	p3	p4	p5	p6	p7	p8
	x8	x10	x1	x12	x4	x9	x5	x3
	x1	x11	x11	x4	x5	x7	x11	x12
	x6	x12	x12	x5	x7	x8	x3	x5
	x11	x3	x2	x7	x12	x11	x4	x4
	x7	x8	x3	x9	x1	x12	x1	x1
	x10	x9	x4	x10	x6	x3	x2	x2
	x9	x6	x7	x8	x11	x5	x10	x11
	x3	x5	x8	x11	x3	x4	x8	x6
	x4	x7	x9	x2	x9	x1	x9	x8
	x12	x4	x10	x6	x10	x2	x7	x9
	x2	x1	x6	x3	x8	x6	x12	x10
	x5	x2	x5	x1	x2	x10	x6	x7

Source: Elaborated by the author

The table above shows that departments that participate in the decision making process (p1 - Financial compartment, p2 - legal department, p3 - HR department, p4 - supply compartment, p5 - marketing department (sales), p6 - accounting department, p7 - investment compartment, p8 - management department) only influence the decision of some criteria. This conclusion is drawn from the analysis of flow chart. Thus, the 12 criteria are distinct relational belonging to each department. After calculating the D matrix and significance of the k_j coefficients, we obtain the following data:

Table 3. Estimate the relative importance of decision criteria

	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12
p1	11	1	3	2	1	10	7	12	5	6	9	1
p2	6	7	1	5	3	2	4	1	1	1	1	1
p3	1	1	1	1	7	6	2	3	4	5	1	1
p4	10	7	9	1	1	8	1	5	2	4	6	1
p5	3	10	6	1	1	4	1	9	7	8	5	2
p6	9	10	6	8	7	11	2	3	1	12	4	5
p7	5	6	3	4	1	12	10	8	9	7	2	11
p8	5	6	1	4	3	8	12	9	10	11	7	2
$\sum_i N_{ij}$	50	48	30	26	24	61	39	50	39	54	35	24
$\sum_j \sum_i N_{ij}$												480
$k_j = \frac{\sum_i N_{ij}}{\sum_j \sum_i N_{ij}}$	0,104	0,100	0,063	0,054	0,050	0,127	0,081	0,104	0,081	0,113	0,073	0,050
0 < k_j < 1												

Source: Elaborated by the author

Estimate the relative importance of decision criteria, showed that in order score the most important criteria is: x6 - the liquidity (short-term investments and banks) x10 - turnover, x8 - cash flow, x1 - level (amount) in trade payables.

For S.A. PORT TRANS EUROPE the period 2006 - 2011 have the following values for the selection criteria:

Table 4. Assigning value to criteria (RON)

Current prices indicators	2006	2007	2008	2009	2010	2011
x1 Level (amount) in trade payables	11.054.002	11.458.073	14.037.300	14.536.670	14.319.245	19.028.166
x2 Level of trade receivables	17.999.076	27.143.266	36.146.362	43.446.509	46.005.115	55.142.576
x3 Stock value	3.648.021	3.591.273	4.526.511	5.252.316	5.890.681	6.616.508
x4 Level (amount) of financial liabilities	17.977.894	59.125.121	56.830.039	50.629.833	47.072.673	39.052.700
x5 Level (amount) of social debt	1.820.677	6.380.754	3.893.107	3.837.074	2.720.614	3.312.738
x6 Liquidity level (inv t.s. + banks)	12.435.972	12.668.710	18.403.632	8.252.498	16.181.048	14.882.566
x7 Distribution of profit	33.368	25.000	120.000	340.000	300.000	80.000
x8 Cash flow	18.456.363	17.918.426	19.661.961	34.835.242	30.308.499	28.202.000
x9 Net profit	1.111.214	1.479.476	2.572.854	9.684.500	6.267.428	2.217.634
x10 Turnover	137.247.117	142.139.688	155.232.835	199.945.306	156.160.170	185.905.402
x11 Working capital requirement	20.454.612	21.295.137	15.652.671	28.089.995	28.179.528	34.577.108
x12 Value of fixed assets	182.153.082	208.144.996	282.141.102	295.228.535	288.920.626	280.377.947
xb Total debts	30.852.573	76.963.948	74.760.446	69.003.577	64.112.532	61.393.604

Source: Elaborated by the author

Analyzing the data in Table 4 the following conclusions:

Turnover increased in 2011 compared to 2006, with Ron 48,658,285 and net profit increased compared with the same period was Ron 1,106,420. Although in 2011, as compared to 2010, turnover increased by Ron 29,745,232, net profit in the same period decreased by Ron 4,049,749 this led to an increase in expenses.

Liquidity level in 2011 compared to 2010 decreased by Ron 8,019,973 as a result of payment of the outstanding debt of Ron 2,718,928 and the balance of trade receivables increased by Ron 9,137,461.

Turnover growth in 2011 than in 2010, Ron 29,745,232 was overshadowed by higher costs leading to lower net income in 2011 compared to 2010, with 4,049,794 lei.

The analysis of the indicators most profitable year was 2009, before the manifestation of the economic crisis in Romania, when turnover was Ron 199,945,306 and profit was Ron 9,684,500 and the trade receivables was lower in 2009 compared to 2011, with 11,696,067 lei. The only unfavorable situation is encountered in the debt, especially financial liabilities which led to a decrease in cash balance.

In the period 2006-2011 operating needs could be met from surplus stable resources on stable resources. Analyzing the claims and the liquidity in the period 2006-2010, we find that they do not cover the total debt due to higher financial debt. This situation was improved in 2011 when the debt fell Ron 2,718,928 and the debt and liquidity increased by Ron 7,838,979. Future be avoided completely cover operational need of stable resources. Long-term debt is to be contracted only to cover depreciable assets because the only way the operator can ensure development. Stable resource use surplus for investment, not for current needs.

The weighting coefficients k_j values with estimated values obtained dynamics of debt indicators during 2006 - 2011:

Table 5. Determining the estimated indicator "Debts" on the decision model (RON)

	2006	2007	2008	2009	2010	2011
Debts	30.852.573	76.963.948	74.760.446	69.003.577	64.112.532	61.393.604
Estimated debts	30.852.573	33.071.654	36.778.051	37.691.592	33.745.261	19.630.744

Source: Elaborated by the author

There is a much decelerated trend estimate for debt indicator, deceleration caused by the effect of making the indicator model implementation. In order to eliminate the influence of inflationary event was done to adjust the values of the consumer price index, adjusted values are shown in the table below:

Table 6. Value adjustments in consumer price index

	2006	2007	2008	2009	2010	2011
Consumer price index	134.34	128.1	120.2	113.08	107.96	100
Debts (adjusted)	41.447.347	98.590.817	89.862.056	78.029.245	69.215.890	61.393.604
Debts estimate (adjusted)	41.447.347	44.428.461	49.407.634	50.634.884	45.333.383	26.371.941

Source: Elaborated by the author

If adjustment with CPI values, it is observed a tendency for equalization of values, correlation coefficients decreased from -2.1 to -2.924

4. Conclusions

Developing the model for debt relief decision based on information gathered from financial statements is useful for the managers of the companies affected by the economic, and it can offer a solution to limit their impact on the evolution of the business activities of the company concerned. Model proved reliable in terms of financial and economic analysis, managing to highlight the role of each resource involved in management processes.

Financial resources at a time can be limited by several external factors enterprise, but efficient management and a coherent process of debt relief can be a rigorous basis for future economic development of society.

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