

# A MODEL FOR ANALISING FINANCIAL EQUILIBRIUM OF FIRM

*Lecturer Phd Student Adina Elena Dănuțiu, [adina.danuletiu@gmail.com](mailto:adina.danuletiu@gmail.com)  
„1 Decembrie 1918” University, Alba Iulia, Romania*

**Abstract:** *This paper presents a model of financial equilibrium analysis. The model is based on relation between net working capital, necessary of working capital and net treasury of the firm. On this relation, the firms can be classified in six cases, which are granted a score by importance of the case. On five years period, indicators of firm equilibrium are determined by the sum of each year score divided by 6 (the number of cases).*

It is well-known that the life of an enterprise represents a succession of circumstances which drives to situations more or less difficult. Some of them are prevented and avoided even before they occur, others the most serious, are sometimes hard to endure and become fatal for the enterprise. To maintain of a good financial situation, to continue the activity in conditions of efficiency and efficacy, to reach the goals established, the enterprise and her managers must continually adapt the way of administration in the aim to compensate the changes that the socio-economical environment has on the activity of the enterprise. The neglect of this changes and the absence of proper administration measure compromise the maintaining of a good financial situation.

The problem of financial equilibrium is often associated with financial stability. An enterprise is financial stable if it has a good financial situation.

A way to measure stability is based on the opinion that stability is the situation in which there is a concordance between the volume and the structure of the resources

1. Long term resources finance long term utility
2. Short term resources finance short term utility
3. Long term resources don't finance short term utility
4. Short term resources don't finance long term utility

The first assertion is known as the rule of minimal financial equilibrium according to which the utilities established must be financed from long term resources. This rule is considered being “a rule of common sense and caution”, and requires the resources, used to finance the assets, to remain available to the enterprise on a period of time that equals at least the assets. The difference between the capital and the assets is the working capital

The second assertion represents the current equilibrium which must exist between the temporary needs and the temporary resources of financing the needs. The deference between temporary needs (exclusive the working capital) and the temporary resources (exclusive banker credits) represents the needed capital.

The relation between net working capital and necessary of working capital like financial equilibrium indicators determined short term equilibrium with indicator named net tresorery.

$$FR - NFR = TN$$

In accordance with this relation the enterprise can be classified in 6 cases which are granted a score by importance of the case, the score between 0 and 1 is granted to an unstable enterprise, the score 1 is for the most stable enterprise.

Case	Indicators of equilibrium			score(pij)
1	FR +	NFR -	TN +	1
2	FR +	NFR+	TN +	0,8
3	FR +	NFR+	TN -	0,6
4	FR -	NFR-	TN +	0,4
5	FR -	NFR-	TN -	0,2
6	FR -	NFR+	TN -	0

1. The enterprises in the first case are both in long term and in short term equilibrium. This enterprises are the most financial stable, and they are characterized by the existence of a certain finance self sustenance on short term, the financing of their activity is done from permanent capital and the non-financial temporary sources, without taking credits, and there is a favorable discrepancy between the stocks and debts liquidation and the exigibility of the running debts, meaning the acceleration of rotation of the circulating assets, to fast the incomes and to relax the payments, actually there is no financial need, that will lead to a net positive treasury.

2. The companies that are on the second case are characterized by the fact that during their activities they make investments to increase the capital needed for exploitation cycle, the short term debts are not sufficient to cover the running activity, so these are in lack of balance on short term. This lack of balance on short term, after analyzing the causes, can suggest two aspects:

- a normal situation in the case that the supplementary need of financing the running activity is due to some changes in the fabrication technology or to extension of exploitation cycle, and based on these it is also justified the increase of the elements on stocks or the increase of assets on deduction. Also, the increase of the volume of exploitation activity due some offer adjustments regarding a favorable request on the market of specific products can generate on short term a supplementary financing need for current assets, without being the expression of a grave financial lack of balance.

- a negative situation, in the case there is a slowing of the stocks rotation (decrease of products request, incorrect establish of stocks level, production re-orientation, technological reorganization, etc), slowing the incomes and in general, negative administration of the report between debts and duties that means that the company does not draw sufficient non-financial resources to cover current needs.

On long term, permanent capital covers fix assets, those companies have a safe reserve that assure them their daily functioning, so they are on long term balance, and because the net working capital is bigger than the need of working capital their treasury is positive.

3. The companies that are in the third case, although they are on long term balance, they compare with a negative gap between stocks and debts liquidation and exigibility exploitation debts, due to the slowing of the incomes and the acceleration of the payments, accruing a negative treasury. Although the situation illustrates a certain limitation of the company financial independence, this should not be interpreted as a state of insolvency. The companies should act to recover the debts, to accelerate the stocks rotation speed and possibly to raise the expiration of temporary resources, that will lead to decrease the need of net working capital and implicit of the treasury deficit. In the case when the normal unrolling of the exploitation cycle allows to justify the using of partially financing the current assets based on short term bank credits, the company financial bonito does not seem to be regarded on negative treasury. This situation is confirmed by reality with the financial statistics, that shows that in the most of the economic fields companies have negative treasuries situations but this does not influence their financial health.

By exception, the net negative net working capital can be registered for those companies who, through their activity, liquidate and renewal very fast their stocks, such as an gross and en detail commercial enterprise, or those companies that use advances and guaranties, such as electric

companies, gas companies, companies that on the other hand, benefit many facilities regarding payments to their suppliers (they have no access to the supplier credit).

4. The companies that are on the fourth case are confronted with the acceleration of stocks rotation and exploitation debts that will lead to diminishing or even missing the lack of net working capital, these companies are on short term equilibrium. However, on long term, these companies are in a lack of balance, being unable to cover fix assets from permanent capitals, so they do not have net working capital, and are forced to take long term loans. The net positive treasury comes from urging incomes and relaxing the payments.

5. For the companies that are on the fifth case, although working capital and necessary of working capital are negative like in the case of the companies mentioned above, these are in lack of balance on long term and in equilibrium on short term, the net negative treasury results from slowing the incomes and accelerating the payments. Same time, because the company on this case are characterized by a big need of financing resources for permanent activity, the situation can be the expression of a backed investment policy. The financial lack of balance shown on long term can have an economical justification, founded into the intention of increasing the technical and production base. A certain volume of permanent activity that can not be covered from permanent sources is partially financed based on temporary sources (situation that trespass the general principles of financial balance) and the supplementary not covered need of financing of fix assets is founded in treasury, it becomes negative.

6. The companies that are on the sixth case are both in lack of balance on long term because they can not cover fix assets from permanent capitals and on short term because standing debts are not sufficient to finance current assets, there is unfavorable gap between the stock and debts liquidation and exigibility of exploitation debts, by slowing incomes and accelerating payments that will lead to net negative treasury.

Our study is based on financial situation of the 48 companies quoted at Bucharest

Due to this classify on cases, meaning the situations when a company can move from one case to another during the period analyse, there is necessary a scale procedure to establish the stability rate of the specific company for the entire analyse period, as it is shown below:

$$G_i = \frac{\sum p_{ij}}{6}$$

Where: -  $G_i$  is the stability rate of the company for the entire analyse period

-  $p_{ij}$  is the score given to the company  $i$  during the year  $j$

This obtained coefficient is adjusted (in mathematic sense) with next formula:

$$G_i^* = \frac{G_i - \min(G1: G48)}{\text{Max}(G1:G48) - \min(G1: G48)}$$

The adjusted stability rate takes values between 0 and 1 thus:

Stability rate	$G_i^*$
Very good stability	0,9-1
Good stability	0,8-0,9
Medium stability +	0,7-0,8
Medium stability	0,6-0,7
Medium stability -	0,5-0,6
Low stability +	0,4-0,5
Low stability	0,3-0,4
Low stability -	0,2-0,3
Poor stability	0,1-0,2
Very poor stability	0-0,1

**The score and the adjusted score of the companies for the analyzed period**

Nr. crt.	Name of the company	2002	2003	2004	2005	2006	TOTAL	Gi	Gi*
1.	AEROSTAR S.A. Bacău	0,8	0,8	0,8	0,8	1	4,2	0,7000	1,0000
2.	ALRO Slatina	0,8	0,8	0,6	0,8	0,6	3,6	0,6000	0,8421
3.	ALTUR Slatina	0,6	0,6	0,6	0,6	0	2,4	0,4000	0,5263
4.	ALUMIL ROM INDUSTRY București		0	0	0,6	0,6	1,2	0,2000	0,2105
5.	AMONIL Slobozia	0,4	0,4	0,4	1	0,4	2,6	0,4333	0,5789
6.	ANTIBIOTICE Iași	0,6	0,6	0,6	0,6	0,6	3	0,5000	0,6842
7.	ARMATURA Cluj- Napoca	0,6	0,6	0,6	0,6	0	2,4	0,4000	0,5263
8.	AZOMURES Târgu Mureș	0,6	0,6	0,6	0,6	0,6	3	0,5000	0,6842
9.	BERMAS Suceava	0,8	0,6	0,6	0,6	0,8	3,4	0,5667	0,7894
10.	BIOFARM București	0,8	0,8	0,8	0,8	0,8	4	0,6667	0,9473
11.	CARBOCHIM	0,2	0,6	0,6	0,6	0,6	2,6	0,4333	0,5789
12.	COMELF Bistrița	0,6	0,6	0,6	0,6	0,6	3	0,5000	0,6842
13.	COMPASIBIU	0,6	0,6	0,8	0,6	0,6	3,2	0,5333	0,7368
14.	ELECTROAPARATAJ	0,8	0,8	0,8	0,8	0,8	4	0,6667	0,9473
15.	ELECTROCONTACT Botoșani	0,8	0,8	0,6	0,6	0,8	3,6	0,6000	0,8421
16.	ELECTROPUTERE Craiova	0,2	0,4	0,4	0,2	0,2	1,4	0,2333	0,2631
17.	ENERGOPETROL	0	0,6	0,8	0,6	0,6	2,6	0,4333	0,5789
18.	FLAMINGO INTERNATIONAL	0,8	0,8	0,8	0,6	0,6	3,6	0,6000	0,8421
19.	IMPACT	0,6	0,6	0,6	0,6	0,8	3,2	0,5333	0,7368
20.	KANDIA EXCELENT	0,8	0,8	0,8	0,8	0,8	4	0,6667	0,9473
21.	MAILLIS	0,2	0	0	0,2	0	0,4	0,0667	0,0000
22.	MECANICA Ceahlău	0,6	0,6	0,6	0	0	1,8	0,3000	0,3684
23.	MECHEL Târgoviște	1	0	0,6	0,6	0,8	3	0,5000	0,6842
24.	MEFIN Sinaia	0,2	0,6	0,6	0,6	0	2	0,3333	0,4210
25.	OIL TERMINAL Constanța	0,6	0,8	0,8	0,8	0,8	3,8	0,6333	0,8947
26.	OLTCHIM Râmnicu Vâlcea	0,6	0,6	0,6	0,8	0,4	3	0,5000	0,6842
27.	PETROL IMPORT EXPORT	0,2	0,4	0,2	0	0	0,8	0,1333	0,1052
28.	PETROM București	0,6	0,6	0,6	0,6	0,6	3	0,5000	0,6842
29.	POLICOLOR București	0,8	0,8	0,8	0,8	0,8	4	0,6667	0,9473
30.	PRODPLAST	0,6	0,6	0,6	0,8	0,6	3,2	0,5333	0,7368
31.	ROMPETROL RAFINARE	0,8	0,8	0,8	0,8	0,8	4	0,6667	0,9473
32.	ROMPETROL WEL SERVICE	0,4	0,6	0,6	0,6	0,6	2,8	0,4667	0,6315
33.	SANTIERUL NAVAL Orșova	0,8	0,8	0,8	0,8	0,8	4	0,6667	0,9473
34.	SILCOTUB Zalău	0,8	0,6	0,6	0,6	0,8	3,4	0,5667	0,7894
35.	SINTEZA	0,6	0	0,6	0,6	0,8	2,6	0,4333	0,5789
36.	SIRETUL Pașcani	0,6	0,6	0,6	0,6	0,8	3,2	0,5333	0,7368

37.	SOCEP Constanța	0,8	0,8	0,8	0,8	0,6	3,8	0,6333	0,8947
38.	THR MAREA NEAGRĂ	0,8	0,8	0,8	0,8	0,8	4	0,6667	0,9473
39.	TITAN (LOULIS S.A.)	1	0,8	0,8	0,8	0,8	4,2	0,7000	1,0000
40.	TMK Artrom Slatina	0,2	0	0,6	0	0	0,8	0,1333	0,1052
41.	TRANSELECTRICA București	0,8	0,8	0,8	0,8	1	4,2	0,7000	1,0000
42.	TURBOMECANICA	0,6	0,6	0,6	0,6	0,6	3	0,5000	0,6842
43.	UAMT Oradea	0,6	0,6	0	0	0	1,2	0,2000	0,2105
44.	UCMR Reșița	0,4	0,4	0,4	0,4	0,2	1,8	0,3000	0,3684
45.	VAE APCAROM Buzău	0,8	0,8	0,8	0,8	0,8	4	0,6667	0,9473
46.	VRANCART Adjud	0,8	0,8	0,8	0,8	0,6	3,8	0,6333	0,8947
47.	ZENTIVA București	0,6	0,6	0,6	0,6	0,8	3,2	0,5333	0,7368
48.	ZIMTUB Zimnicea	0,6	0,6	0,6	0,6	0,6	3	0,5000	0,6842

### The companies clasification based on the stability rate

The stability rate	Name of the company	Activity	Stabilitate Gi*
Very good (0,9 -1)	THR MAREA NEAGRĂ	Hotels and restaurants	1
	AEROSTAR S.A. Bacău	Air transport	1
	TRANSELECTRICA București	Production and supply of electric power, gas and water	1
	SOCEP Constanța	Supporting and auxiliary transport activities, Activities of travel agencies	0,947368
	BIOFARM București	Manufacture of chemicals and chemical products	0,947368
	PRODPLAST	Manufacture of rubber and plastic products	0,947368
	PETROM București	Extraction industry, Hydrocarbons extraction and other services	0,947368
	ROMPETROL WEL SERVICE	Extraction industry, Hydrocarbons extraction and other services	0,947368
	KANDIA EXCELENT	Foods and drinks industry	0,947368
	ELECTROAPARATAJ	Manufacture of machinery and electrical machinery	0,947368
	VAE APCAROM Buzău	Industry of other means of transport	0,947368
Bună (0,8 - 0,9)	SIRETUL Pașcani	Manufacture of textiles	0,894737
	VRANCART Adjud	Manufacture of pulps, paper and paper products	0,894737
	MEFIN Sinaia	Manufacture of other land transport	0,894737
	ELECTROCONTACT Botoșani	Manufacture of machinery and electric machinery	0,842105
	FLAMINGO INTERNATIONAL	Wholesale trade and commision	0,842105
	ALRO Slatina	Manufacture of metal product	0,842105
Medie + (0,7 - 0,8)	BERMAS Suceava	Foods and drinks industry	0,789474
	SANTIERUL NAVAL Orșova	Manufacture of other land transport	0,789474
	IMPACT	Construction	0,736842
	ZENTIVA București	Manufacture of chemicals and chemical product	0,736842
	POLICOLOR	Manufacture of chemicals and chemical product	0,736842
	SINTEZA	Manufacture of chemicals and chemical product	0,736842
	COMPA Sibiu	Manufacture of land transport	0,736842

Medie (0,6 – 0,7)	TURBOMECANICA	Manufacture of other transport equipment	0,684211
	ANTIBIOTICE Iași	Manufacture of chemicals and chemical product	0,684211
	PETROL IMPORT EXPORT	Wholesale trade and commision	0,684211
	AZOMURES Târgu Mureș	Manufacture of chemicals and chemical product	0,684211
	ZIMTUB Zimnicea	Manufacture of metal product	0,684211
	MECANICA Ceahlău	Manufacture of machinery and equipment	0,684211
	COMELF Bistrița	Manufacture of machinery and equipment	0,684211
	OIL TERMINAL Constanța	Supporting and auxiliary transport activities, Activities of travel agencies	0,684211
	ROMPETROL RAFINARE	Manufacture of coke, rafined petroleum product and nuclear fuel	0,631579
Medie - (0,5 – 0,6)	ENERGOPETROL	Construction	0,578947
	CARBOCHIM	Manufacture of other non-metalic mineral product	0,578947
	AMONIL Slobozia	Manufacture of chemicals and chemical product	0,578947
	SILCOTUB Zalău	Manufacture of metal product	0,578947
	ARMATURA Cluj-Napoca	Manufacture of machinery and equipment	0,526316
	ALTUR Slatina	Manufacture of land transport	0,526316
Redusă + (0,4 – 0,5)	MECHEL Târgoviște	Manufacture of metal product	0,421053
Redusă (0,3 – 0,4)	MAILLIS	Manufacture of rubber products	0,368421
	UCMR Reșița	Manufacture of machinery and equipment	0,368421
Redusă - (0,2 – 0,3)	ELECTROPUTERE Craiova	Maufacture of electrical machinery and apparatus	0,263158
	ALUMIL ROM INDUSTRY București	Wholesale trade and commision	0,210526
	UAMT Oradea	Manufacture of land transport	0,210526
Slabă (0,1 – 0,2)	TMK ARTROM Slatina	Manufacture of metal product	0,105263
	OLTCHIM Râmnicu Vâlcea	Manufacture of chemicals and chemical product	0,105263
Foarte slabă (0 – 0,1)	TITAN (LOULIS S.A.)	Manufacture of foods product and beverages	0

This methodology can be succesfully applied for different activity fields.

## References:

1. **Bătrâncea Ioan**, *Analiză financiară*, Editura Dacia, Cluj-Napoca, 2000.
2. **Buglea Alexandru**, *Analiză financiară. Concepte șistudii de caz*, Editura Mirton, Timișoara, 2005.
3. **Burja Vasile, Todea Nicolae, Burja Camelia**, *Analiza financiară și evaluarea societăților comerciale*, Editura Risoprint, Cluj-Napoca, 2003
4. **Petrescu Silvia**, *Analiză și diagnostic financiar-contabil*, Editura CECCAR, București, 2006