

Score Function Model Applied For Assessing the Adequacy of Internal Controls and Risk Management Function within Romanian Investment Firms

Ioan-Ovidiu SPATACEAN

Department of Finance and Accounting, Faculty of Economics, Law and Administration,
Petru Maior University of Tirgu Mures, E-mail: ovidiu.spatacean@ea.upm.ro

Abstract *Romanian Investment Firms are obliged to comply with relevant corporate governance principles as a result of their status of public interest entities. Furthermore, since Romania is a State Member since 2007, it is mandatory for these entities to implement EU regulations. Our main interest is to develop and apply a special Score Function Model in order to assess the compliance level for each investment firm incorporated in the research sample, as regards the effectiveness of internal controls and risk management function, in order to prevent fraudulent operations and client asset misappropriation. We are preoccupied of the compliance level as well as the relevant vulnerabilities related to Romanian Investment Firms. We expect to recommend relevant solutions so that investment firms may overcome these vulnerabilities, in order to assure a prudent supervision and to prevent fraudulent operations. These objectives are imperative for the need of assuring a high level of confidence as regards the consumers of financial investment services.*

Key words Compliance, investment firms, corporate governance principles, internal control, fraudulent practices, risk exposure

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1. Literature Review and Problem Formulation

Risk assessment and risk management are a common theme of corporate governance and internal control structures (Calder 2008) since governance reforms have been pronounced in internal control and risk management systems. According to some previous research, on average, firms surveyed achieved 59% of the total points awarded, for internal control and risk management systems. Increased attention to these systems is in part a response to crises during the 1990s and early 2002 (Mallin, 2006). Under such corporate realities, we based our research motivation on the goal to identify means and to issue pertinent recommendations for improving the effectiveness of relevant internal controls implemented within investment firms, in order to ensure a prudent supervision framework and to prevent fraudulent or abusive operations that investment firms might commit to the detriment of investors in the Romanian capital market. In this manner, we are optimistic to believe that the confidence level of investment service consumers could be significantly improved. Furthermore, we share the opinion of Solomon and Solomon (2004), according to which emphasis on the reporting stage of the internal control system is essential, both for corporate accountability and for the future success of the business.

In order to achieve the research objective, the authors developed a Score Function based on the relevant following coordinates:

1.1. Self-assessment

This component of the Score Function model essentially aims the scores obtained by the investment firms selected in the sample, following the analysis process conducted on the responses provided by questionnaires related to:

(a) Compliance with the relevant principles of corporate governance, applicable to financial intermediation sector, and

(b) The design, operation and assessment of internal control and risk management functions, performed by those in charge with such responsibilities (the management, internal control representative and the risk assessment officer). Given the high degree of subjectivity and the tendency to over-evaluate the effectiveness of internal control and risk management functions, which are expected to be experienced as a result of processing the collected information, including a possible unsatisfactory feed-back rate, the weight of importance assigned to this component is 10%.

1.2. External Evaluation

This component focuses on two research coordinates:

(a) The analysis of significant vulnerabilities in the corporate governance model, particularly affecting the internal control effectiveness, sanctioned by the regulatory and supervision authority (F.S.A.) over the period 2005-2015, and

(b) The analysis of statutory audit reports, including supplementary reports submitted by the statutory auditors to the Audit Committees within Romanian Investment Firms, given the specific regulatory provisions (Regulation (EU) 537/2014 and FSA Norm 21/2014). The research interests will be channelled towards identifying those misrepresentations which have a significant impact on the integrity of financial reporting process and the annual financial statements published by investment firms. This assessment is based on the assumption that:

- the regulatory and supervision authority acts in an independent manner and with a high degree of professional competence, and
- statutory auditors are required to comply with relevant ethical requirements prescribed by the IESBA Code of Ethics applicable to professional accountants, among which independence and professional competence are fundamental values. Under these considerations, the authors consider that this component of the Score Function model should have the highest weight of importance (45%). For the sub-component of external assessment performed by FSA within periodic inspections, the allocated weight of importance is set to 30% and for the sub-component of external evaluation performed by statutory auditors, the weight of importance is set to 15%.

1.3. Internal Evaluation

This component is based on the analysis of reports issued by the relevant persons involved in ensuring the integrity of financial reporting process within Romanian Investment Firms. For entities selected in the sample, the authors are mainly preoccupied with annual reports issued by: the Audit Committee, the Internal Auditor, the internal control representative and the risk officer. Based on the assumption that these relevant persons are not required a degree of independence so high as in the case of statutory auditors, which could induct a degree of subjectivity that could affect the credibility of the assessments, the weight importance is fixed at 30%.

1.4. Financial Perspective

This component of the Score Function model is based on two relevant coordinates:

(a) The empirical results obtained from the application of relevant models used for assessing the bankruptcy risk (Altman and Conan Holder models), and

(b) Adjustments in financial performance and shareholders' equity, determined by adopting International Financial Reporting Standards (IFRS) as basis for the financial reporting process. We considered financial information submitted by Romanian Investment Firms for the period 2011-2014, as disclosed in their annual financial statements, prepared both under Romanian Accounting Standards (RAS) and IFRS. The authors base their research on the premises that a high degree of uncertainty in ensuring business continuity, and negative significant adjustments in financial performance and shareholders' equity, can reflect relevant signs of vulnerability of risk management function, with negative impact on integrity of the financial reporting process, as well as on the effectiveness of internal control function. The weights of importance to these components of evaluation were established at 10%, respectively 5%.

Given the assessment components described in the previously paragraphs (1)-(4), the mathematical model of the Score Function was developed in the following formula:

$$Fn = \sum_{n=1}^{29} \frac{Pn,x}{Pmax,x} * qx \quad (1)$$

Where:

- "n" represents the number of Romanian Investment Firms selected in the sample, respectively 29 entities;
- "x" represents the number of valuation components described above, respectively four components, $x = (1;4)$;
- "q_x" represents the weight of importance assigned to each valuation component;
- "P_{n,x}" represents the score value registered by the "n" Investment Firm in connection with the "x" valuation component;
- "P_{max,x}" represents the maximum value of the score, obtained in correlation with the "x" valuation component .

In general, sound corporate governance includes guidelines for dealing with financial records, expectations for compliance with laws and regulations, procedures for identifying and eliminating conflicts of interests, an explanation of the company's code of confidentiality and its enforcement, and strategies for the promotion of an ethical environment within de company (Anand 2008). The purpose of this investigation approach was to design a Score Function model for the assessment of conformity and effectiveness of internal control and risk management functions operating within Romanian Investment Firms. We acknowledge that corporate governance structure is centered on the establishment and maintenance of adequate and effective internal control systems to protect assets from loss or theft (Rezaee 2004). Our research approach is designed to facilitate future subsequent valuations, performed by the usage of questionnaire techniques, regarding the effectiveness of these functions, considered vital to ensure strong governance within Romanian Investment Firms.

2. Research Methodology and Results

The research concerns were focused on designing, developing and implementing a model based on a scoring assessment (Score function) in order to assess the level of conformity and effectiveness of the internal control and risk management functions, in relation with operating requirements applicable for Romanian Investment Firms, as imposed by the regulatory framework.

2.1. Applying the Score Function model for assessing internal control function based on the significant deficiencies sanctioned by the supervisory authority (F.S.A.)

The research activities were conducted on a sample of 29 Romanian Investment Firms holding a valid operating license on Bucharest Stock Exchange at the end of May 2015, except for credit institutions and non-resident investment firms operating on the Romanian capital market under "European passport" granted for rendering financial services. The combined market share of these entities was 47.28% at the same date, considered relevant for research purposes. We examined decisions issued by the regulatory and supervision authority (F.S.A.) from January 2005 to June 2015, associated with a number of 218 missions of periodic external controls. We inspected the sanctions administered by F.S.A. to a total number of 82 Romanian Investment Firms, of which 29 Investment Firms have kept a valid operating license at the end of May, 2015. The aggregate amount of the sanctions administered by the regulatory and supervision authority (F.S.A.) over the period 2005-2015 was accounted for 1,756,547 lei (395,663 Euro), representing a rate of 37.77% of the total amount of penalties administered for all investment firms over the period. The obtained score for each entity was determined by the following mathematical relationship:

$$Fn = \sum_{n=1}^{29} \left(1 - \frac{Pn}{Pmax}\right) * qx \quad (2)$$

Where:

- "F_n" represents the score value obtained by each Investment Firm;
- "P_n" represents the penalties accumulated by the "n" Investment Firm over the period 2005-2015;
- "P_{max}" represents the total value of penalties accumulated over the period 2005-2015 by all Investment Firms selected in the sample;
- "q_x" represents the weight of importance associated with this valuation component (30%).

After applying this valuation component set for the Score Function model, we determined the following empirical results:

(a) For a number of four entities (Investment Firms), we were not able to identify sanction ordinances /decisions, over the period 2005-2015. Therefore, we determined that the score function value subject to calculation formula (2) was not relevant, provided that periodic inspections performed by the regulatory and supervisory authority were programmed with a frequency of three years. For the remaining 25 entities (Investment Firms), the Score Functions determined in correlation with the value of penalties administered are presented in Table 1.

(b) We established an indirect relationship between the cumulative amount of penalties administered and Score Function value. This relationship is explained by the manner in which the Score Function was mathematically computed. Therefore, we validate the assumption that a low amount of penalties administered by the regulatory and supervisory authority is a direct result of a sound internal control function and thus is associated with a high Score Function value.

(c) We were not able to determine obvious causal relationship between the market share and the Score Function value. From this perspective, we computed the correlation coefficient (-) 0.00998, reflecting an extremely weak statistical relationship between the variables.

Table 1. Score Function values in relation with F.S.A. penalties administered over the period 2005-2015

No.	Investment Firm	Penalties (lei)	No. of years	Market Share (%)	Score Function Value
1	Alpha Finance Romania	1.000	1	1,14	0,299829
2	Tradeville	1.000	1	1,37	0,299829
3	Rombell Securities	2.500	2	0,10	0,299573
4	BT Securities	4.000	2	24,52	0,299317
5	Romintrade	6.500	1	0,06	0,298890
6	Estinvest	7.000	2	0,56	0,298804
7	Muntenia Global Invest	10.000	3	0,18	0,298292
8	Ieba Trust	11.000	1	1,07	0,298121
9	Oltenia Grup Invest	13.000	2	0,06	0,297780
10	Romcapital	15.500	1	0,19	0,297353
11	Intervam	16.000	2	0,10	0,297267
12	Interfinbrok Corporation	16.500	2	0,13	0,297182
13	IFB Finwest	18.000	1	1,31	0,296926
14	Prime Transaction	21.500	2	0,48	0,296328
15	Interdealer Capital Invest	23.000	3	0,05	0,296072
16	Super Gold Invest	23.000	2	0,22	0,296072
17	Eldainvest	27.000	4	0,14	0,295389
18	Intercapital Invest	31.250	2	0,62	0,294663
19	Blue Rock Financial Services	32.000	4	0,17	0,294535
20	Confident Invest	33.000	2	0,23	0,294364
21	Goldring	42.500	4	0,50	0,292741
22	Dorinvest	67.829	5	0,09	0,288416
23	Swiss Capital	109.000	4	11,82	0,281384
24	Carpatia Invest	173.088	2	0,00	0,270438
25	Broker	1.051.380	6	1,95	0,120435

Source: Author's projection

(d) We were not able to observe a proportionality relationship between the numbers of years in which the Investment Firms were sanctioned and the cumulative amount of penalties administered for these entities. This assertion was validated given the fact that over the period 2012-2015, we noticed a tightening tendency regarding the pecuniary sanctions imposed by F.S.A., although the deficiencies/irregularities were comparable in terms of magnitude and impact upon client relationships.

(a) As regards the hierarchy of Investment Firms by the Score Function values, we determined that:

- seven Investment Firms are classified in the medium risk area, with an aggregate amount of fines between RON 1,000 and RON 10,000 and with a Score Function value between 0.2998–0.2982 points. This classification takes into account a professional scepticism based judgment, provided that risks are permanently dynamic and may register different magnitudes over time;

- 15 Investment Firms are classified in the high risk area, with an aggregate amount of fines between RON 10,000 and RON 70,000 and with a Score Function value between 0.2982–0.2884 points. These values reveal significant weaknesses in the internal control and risk management systems, requiring increased attention on behalf of the persons responsible for governance;

- three Investment Firms are classified in the extremely high risk area, with an aggregate amount of fines between RON 100,000 and RON 1,051,380 and with a Score Function value between 0.2884–0.1204 points. The values in this interval revealed severe deficiencies in internal control and risk management systems, which can raise significant uncertainty in maintaining the operating license of those Investment Firms, provided that they remain unchanged or grow in magnitude.

2.2. Applying the Score Function model for assessing risk management function in the context of threats related to going concern assumptions

The research approaches have emerged in the context of the hypothesis that some uncertainties in ensuring the business continuity assumption in case of Investment Firms can be both: (i) causes for significant vulnerabilities in the relevant internal controls and (ii) result of a less effective risk management function, in particular, regarding market risk and operational risk. The sample subject to our testing was composed of 25 Romanian Investment Firms with an aggregated market share of 46.95% at the end of May 2015. The score values obtained for each entity was determined by computing the following mathematical formula:

$$Fn = \sum_{n=1}^{29} \frac{Pn}{Pmax} * qx \quad (3)$$

Where:

- "F_n" represents the score value obtained by each Investment Firm;
- "P_n" represents the score computed as average between values obtained from applying Altman and Conan Holder models, for "n" Investment Firm over the period 2011-2014;
- "P_{max}" represents the maximum score computed as average between values obtained from applying Altman and Conan Holder models, over the period 2011-2014;
- "q_x" represents the weight of importance associated with this valuation component (10%).

After applying this component of the valuation Score Function model, we obtained empirical results as described in Table 2. A summary of our empirical results is presented below:

(b) There is a direct proportionality between the score values obtained from applying Altman and Conan Holder bankruptcy risk assessment models and the average Score Function values. This relationship is explained by the assertion that high scores resulting from Altman and Conan Holder models equal a low risk of uncertainties regarding business continuity of Investment Firms and thus the internal control/risk management functions operate effectively.

(c) We were not able to determine obvious causal relationship between the amount of market share and the Score Function values. In this respect, we computed the correlation coefficient of (+) 0.08707, reflecting a weak relationship between variables.

- (d) As regards the hierarchy of Investment Firms by the Score Function values, we determined that:
- three Investment Firms are classified in the low risk area, with an aggregate amount of 0.30% market share and with a Score Function value between 0.0640–0.0367 points;
 - eight Investment Firms are classified in the medium risk area, with an aggregate amount of 2.27% market share and with a Score Function value between 0.0223–0.0009 points;
 - nine Investment Firms are classified in the high risk area, with an aggregate amount of 42.09% market share and with a Score Function value between (-) 0.0017 – (-) 0.1591 points. We conclude that increased attention is required in governance of these entities, for the purpose of enhancing risk management function;
 - five Investment Firms are classified in the extremely high risk area, with an aggregate amount of 2.29% market share and with a Score Function value between (-) 0.1904 – (-) 1.7465 points. These entities may be subject to imminent danger zone and must be placed into prudent supervision by those in charge with governance, including F.S.A.

Table 2. Score Function values in relation with Altman & Conan-Holder testing over the period 2011-2014

No.	Investment Firm	Altman F score	Score Function Value	Conan Holder F score	Score Function Value	Average Score Function
1	Voltinvest	5,823479	0,092031	0,242142	0,036066	0,064048
2	Romintrade	1,467639	0,023194	0,671394	0,100000	0,061597
3	Intervam	6,327721	0,100000	-0,177724	-0,026471	0,036765
4	Goldring	1,497059	0,023659	0,140798	0,020971	0,022315
5	Confident Invest	1,300868	0,020558	0,090129	0,013424	0,016991
6	Vienna Investment Trust	4,663405	0,073698	-0,306759	-0,045690	0,014004
7	Estinvest	1,595271	0,025211	-0,010212	-0,001521	0,011845
8	Prime Transaction	2,940964	0,046477	-0,264781	-0,039437	0,003520
9	Super Gold Invest	3,382563	0,053456	-0,322828	-0,048083	0,002687
10	Dorinvest	-0,159123	-0,002515	0,045309	0,006748	0,002117
11	Eldainvest	1,654266	0,026143	-0,163140	-0,024299	0,000922
12	Swiss Capital	3,079450	0,048666	-0,350358	-0,052184	-0,001759
13	Intercapital Invest	1,043146	0,016485	-0,264949	-0,039462	-0,011489
14	Tradeville	1,048095	0,016564	-0,471429	-0,070216	-0,026826
15	IFB Finwest	1,263817	0,019973	-0,505563	-0,075300	-0,027664
16	BT Securities	0,716304	0,011320	-0,683435	-0,101793	-0,045237
17	Muntenia Global Invest	2,888448	0,045648	-1,036333	-0,154355	-0,054354
18	Alpha Finance	2,294592	0,036263	-0,994014	-0,148052	-0,055895
19	Oltenia Grup Invest	2,117303	0,033461	-1,562338	-0,232700	-0,099620
20	Ieba Trust	2,374395	0,037524	-2,388987	-0,355825	-0,159150
21	Blue Rock Financial Services	2,497383	0,039467	-2,822174	-0,420345	-0,190439
22	Rombell Securities	3,188952	0,050397	-4,670485	-0,695640	-0,322621
23	Broker	2,704345	0,042738	-4,866849	-0,724887	-0,341074
24	Interdealer Capital Invest	2,155150	0,034059	-6,138716	-0,914323	-0,440132
25	Eastern Securities	2,179049	0,034437	-23,683371	-3,527490	-1,746527

Source: Author's projection

Another relevant research pattern in relation with the risk management function assessment was defined in the context of the hypothesis that some IFRS unfavourable adjustments may also have a negative impact on the financial position and performance of the Investment Firms. By default, these negative adjustments may be the result of a less effective risk management function, especially considering the market risk. The empirical results obtained are significantly comparable to those previously presented.

3. Conclusions

The purpose of this investigation approach was to provide a basis for quantitative and qualitative valuation of the internal control and risk management functions' effectiveness within Investment Firms, in relation with a Score Function determined (i) on the basis of F.S.A. administered penalties, and (ii) on the basis of results obtained from Altman & Conan-Holder testing. We classified the Investment Firms subject to testing, into three risk classes, based on the value of the Score Function, and found that the balance tilts unfavorably towards Investment Firms placed in the "high" and "very high" risk categories. Our approach will support further valuations by using questionnaires and documenting specific reports prepared by the relevant persons responsible for sound corporate governance.

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