Abstract

This stuff is presenting a short introduction of the software application aiming to assess different types of risk for different types of interested users acting in different risk environments. A traditional targeted market for this application is the financial market place of any kind but also consulting companies doing BI projects, SME to multinational corporates, universities and Non and Governmental Organisation. The application has five different modules structured over three different difficulties levels, accordingly user’s needs and skills. There is an entry, an intermediate and an advanced user access level dealing with assessment of SME- Corporate, Sovereign and Project / Portfolio Risk and Optimisation.

Keywords: Corporate Risk Rating, Sovereign Risk Rating, Investment Quantitative Analysis, Risk Assessment Software Solutions, Qualitative Corporate – SME Assessment

Risk Management Assumptions

a. About Types of Risk Management

- Commercial enterprises apply various forms of risk management procedures to handle different risks because they face a variety of risks while carrying out their business operations.
- Effective handling of risk ensures the successful growth of an organization.
- Various types of risk management can be categorized into the following:
  - Operational risk management: Operational risk management deals with technical failures and human errors
  - Financial risk management: Financial risk management handles non-payment of clients and increased rate of interest
  - Market risk management: Deals with different types of market risk, such as interest rate risk, equity risk, commodity risk, and currency risk
  - Credit risk management: Deals with the risk related to the probability of nonpayment from the debtors
  - Quantitative risk management: In quantitative risk management, an effort is carried out to numerically ascertain the possibilities of the different adverse financial circumstances to handle the degree of loss that might occur from those circumstances
  - Commodity risk management: Handles different types of commodity risks, such

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as price risk, political risk, quantity risk and cost risk

• Bank risk management: Deals with the handling of different types of risks faced by the banks, for example, market risk, credit risk, liquidity risk, legal risk, operational risk and reputational risk

• Nonprofit risk management: This is a process where risk management companies offer risk management services on a non-profit seeking basis

• Currency risk management: Deals with changes in currency prices

• Enterprise risk management: Handles the risks faced by enterprises in accomplishing their goals

• Project risk management: Deals with particular risks associated with the undertaking of a project

• Integrated risk management: Integrated risk management refers to integrating risk data into the strategic decision making of a company and taking decisions, which take into account the set risk tolerance degrees of a department. In other words, it is the supervision of market, credit, and liquidity risk at the same time or on a simultaneous basis.

• Technology risk management: It is the process of managing the risks associated with implementation of new technology

Software risk management: Deals with different types of risks associated with implementation of new software

b. Modelling Risk

Risk modeling is about modeling and quantification of risk. For the financial industry, the cases of credit-risk quantifying potential losses due, e.g., to bankruptcy of debtors, or market-risks quantifying potential losses due to negative fluctuations of a portfolio's market value are of particular relevance. Operational risk, quantifying potential losses incurred due to failing processes is a relevant issue for any form of organization.

Using Advanced Assessment Software Packages To Analyse Risk

a. Sme – risk knowledge – qualitative assessment

InSight SME is an online instrument that quickly and synthetically answers your daily business questions:

• Does the company have all the necessary resources?
• How big are the business risks?
• Does my company have any weaknesses?
• Can I increase profitability? How competitive is my business?

The online report generated by InSight SME is useful for both diagnosing and creating your company's business strategy.

inSight – Your business understanding

You have at hand an online learning toolbox that can assist in testing your level of understanding business - you will find out if:

The resources of the company are sufficient
The company can afford a certain exposure to risk
The company can increase its profit
The company is competitive
This report delivered by inSight is useful for financial diagnosis, risk assessment and through the complex process of creating your corporate development strategy.
inSight will help you mainly to better understand the main factors that make a business working and performant.
inSight is targeting to identify the competitive level and the risk factors of any type of business no matter the industry. The dimensions taken into account are the four elements of competitiveness and risk:

Apply the "Four C's of Competitiveness" in Your Non-Financial Analysis

The 4C of competitiveness
C1 – Critical thinking and the profile of the business
C2 – Capacity and the resources that the company has
C3 – Conditions of the internal environment
C4 – Costs and financial performance

Apply the "Four R's of RISK" in Your Non-Financial Analysis

The 4R of risk:
R1 – Market risk
R2 – Financial risk
R3 – Economic risk
R4 – Operational risk

inSight answers 4 essential questions for any business:
Should you apply for a credit or a financial aid?
Where does my company stand compared with the competitors?
How can I develop a realistic business plan?
Which are the milestones for the strategy of my company in the year ahead?

You have access to a learning toolbox aiming to evaluate the dimensions having an impact on the profitability of any business.
inSight is the ideal learning and testing environment to find out the appropriate answers for all these questions!
The report generated by FincoRating software platform through inSight contains information about the current situation of your company and also recommendations regarding future adjustments that can improve your organization’s results.

Qualitative & Quantitative Scoring

a. Micro – eXpert™: Corporate

Micro - eXpert™ offers an in-depth view of a company’s financial position, scores and analysis not found from other sources, predicting future payment habits, financial stability and comparisons to industry standards. You can make credit and investment decisions with even greater confidence.

Micro - eXpert™ is an informative, in-depth evaluation of a company's financial stability and other key qualitative factors. This easy-to-read report provides helpful data in predicting a company's potential financial stress and contains key information about a company, meant to help your organization:
- Identifies companies that have slow payment experiences or a company that may be undergoing financial stress
- Uses Business Ratios to help make sure a company has enough assets to pay you
- Compares a company to others in the same industry regionally or across your country
- Looks into the business background of a company's history
- Looks to assess the overall risk exposure of the company
- Looks to assess the interest rate value at which the company can borrow money and a S&P compliant rating note
- Looks to assess the management of resources and their flexibility to markets changes
- Assess the market value of the company using advanced formula to express a “near real” value

Micro - eXpert™ toolbox includes following functionalities:
- Quantitative and Qualitative Analysis based on accounting data
- Rating Reports using 15 financial ratio analyses dealt on five different categories
- Quick Assessment of the company’s market value
- Five different analysis reports, with combinations of corporate and industry Analysis based on up to six years historical data series
- Possibility of doing rating simulation - “auto-rating” with personalized and updated data sets
- Credit Risk Assessment compliant with S&P and Fitch standards
- Possibility to search after several types of financial indicators, counties, cities, VAT no, Industry Code, Risk Indicators, Financial Capacity, Management Scoring etc.
- Huge financial data base with more than 50,000 active companies
- Graphics representation of the indicators and their dynamics
- User friendly access and navigation software system
- Industry standards and compliance fully implemented in FincoRating™

Introducing additional data, the user can get benefits of supplementary reports as:
- Bank scoring (Conan Holder and Z - Scoring – Altman Model)
- Equity Cash Flow Valuation
- Capital Cash Flow Valuation
- Free Cash Flow Valuation
- Discounted Dividend Valuation
- Dividend Growth Valuation

A noteworthy fact is that Micro - eXpert™ generates a comprehensive current analysis and diagnosis report, based on the current business environment conditions, macroeconomic indicators, other local, regional and global macroeconomic key factors, as well as the potential risk exposure that may have an impact on company’s future development.

The resulted analysis is completed by running parallel, correlating and real time rebalancing the results obtained from Macro – eXplorer™ and HR - assessment.

Advanced prognosis and forecasting reports can be issued on demand, employing state of the art techniques using statistic, fractal, neural and genetic algorithms.

b. Macro – eXplorer™: Countries
Macro - eXplorer™ offers an in-depth view of a country’s financial position, scores and analysis not found from other sources, predicting future payment habits, financial stability and comparisons to other countries or group of countries considered as benchmark. You can make credit and investment decisions with even greater confidence when disposing advanced tools for searching, analysing and diagnosing macroeconomic local, regional or global trends.

Macro - eXplorer™ is an informative, in-depth evaluation of a country's financial stability and other key qualitative factors. This easy-to-read report provides helpful data in predicting a country's potential financial stress and contains key information about a country, meant to help your organization:

- Identifies countries that have slow payment experiences or a country that may be undergoing financial stress.
- Uses Key Macroeconomic Ratios to help, make sure that a country has enough capacity to repay its debt and not to endanger investors business environment
- Compares a country to others in the same category (EU, OECD etc.), regionally or across the world
- Looks into qualitative background of a country's history
- Looks to assess the overall risk exposure of the country
- Looks to assess the long term debt, the interest rate value at which the country can borrow money and a crediting a S&P compliant rating note
- Looks to assess country’s financial management of resources and their flexibility to markets changes

Macro - eXplorer™ toolbox includes following functionalities

- Quantitative and Qualitative Analysis based on extensive macroeconomic data
- Rating Reports using 18 financial ratio analysis dealt on four different categories as:
  - Real Economy
  - External Finance
  - Spill – over
  - Country Risk Rating
- Five different analysis reports, based on up to six years historical data series
- Possibility of doing rating simulation - “auto-rating” with personalized and updated data sets
- Credit Risk Assessment compliant with S&P and Fitch standards
- Possibility to search after several types of financial key scoring indicators as:
  - Business Environmental Risk
  - Local Currency Risk
  - Credit Risk
  - Country Risk
  - Performance and Competitiveness
  - Vulnerability / Sensitivity
  - Heating / Cooling
  - Country’s Financial Management and Governance
- Huge financial data base provided with all necessary accurate raw or ready to use data from IMF/WB, CMA, BIS, OECD and other reliable sources
• Graphics representation of the indicators and their dynamics
• User friendly access and navigation software system
• Industry standards and compliance fully implemented in *FincoRating™*

A noteworthy fact is that *Macro -eXplorer™* generates a comprehensive current analysis and diagnosis report, based on the current business environment conditions, macroeconomic indicators, other local, regional and global macroeconomic key factors, as well as the potential risk exposure that may have an impact on country’s future development.

The resulted analysis is completed by running parallel, correlating and real time rebalancing the results obtained from *Micro – eXplorer™* industry analysis and diagnosis. Advanced prognosis and forecasting reports can be issued on demand, employing state of the art techniques using statistic, fractal, neural and genetic algorithms.

**Asset And Portfolio Risk Management Based On Quantitative Analysis**

The Application is a complete solution for managing, reviewing, creating and comparing portfolios, portfolio performances and risk indicators and offers the possibility to optimize specific portfolios by various methods.
The application is user-oriented, thus providing each individual with the possibility to create, modify, and delete any number of sub-portfolios merging into one big portfolio, initially based on the SIF’s real portfolio.

The above mentioned portfolio structures can be compared at any time with the Market portfolio, resulting in a quick and accurate comparison between the Market’s trend and the user’s sub-portfolios trends.

The analysis parameters are the most important way the user interacts with the application by means of restricting and guiding many watch and optimization parameters. Guidance parameters, such as the start date and end date of the watch interval per portfolio can be edited and indicators and other interval-sensitive reports will be recalculated accordingly.
The user is provided with, on demand, with a complete history of the transactional data filling a certain interval given as an editable parameter in the setup modules of the application. This helps the user keep a detailed and accurate record of every transaction made over a specific symbol from the portfolio(s).
The portfolio summary shows a list of analytical indicators regarding fundamental information about a certain (sub) - portfolio over a specific time interval of user’s choice and some of the application’s working parameters which were initialized when the actual user was first created, to allow for further adjustment decision using the Analysis Parameters Setup Page.

The Black-Litterman Optimization Algorithm offers the possibility to optimize a certain sub portfolio or even the whole portfolio given as a standing basic objective the expected overall return which is user editable.

The optimization can be done using the symbols’ return calculated into RON or in their native currency.

The optimized structure can finally be saved for future use and reference.
The Risk v Performance Optimization method takes into account the prices or the returns of the symbols in the portfolio calculated in daily or monthly time interval sequences. To optimize the portfolio the user has the option of using only the Downside Risk and must provide the number of iterations of portfolio structures combinations before judging the best one out of them.
The Blue Diagram is an optimization surveying method that compares several indicators taken at day, month, trimester and year terms between the user’s portfolios and the Market Portfolio.

Amongst the indicators that are compared, is The Market Volatility, VaR etc.

For every Symbol in the portfolio, the application stores important entries from the balance sheet data on which it calculates balance and company rating indicators.
The Corporate Evaluation Module is using the above mentioned data, macro indicators and inflation data to compute a corporate evaluation sheet providing information about the company’s evolutionary trend, the predicted profit of the future years and in the end the overall investment decision aid.
This is another type of evaluation of a specific company based also on the balance sheet data and indicators that resume in the commonly used Rating Grades (RS, FCS, HRPS). The rating grades provide instantaneous overall synthetic information on the company’s past evolution, actions and/or gains, making use of a simple codification listed below the rating table.

**Conclusions**

The described software application is taking the user through a path of challenges when aiming to assess different kind of risks encountered in his/her day-by-day business activity.

Here the user is facing a new way to evaluate its company business environment getting all necessary tools to make better decision that are leading to an improved financial performance and enhanced competitiveness among company peers.

The software solutions are using state of the art clearly defined and large scale recognized algorithms and computational methods for risk scoring, rating and the usual quantitative
methods as well as in house developed algorithms used to report, compare and benchmark the resulted data.

One of the most important of all functionalities is the way the modules and functions of the application can be combined to generate complex risk assessment solution on different business or investment environments.

Here the application is not only quantifying and assessing different kind of risks generating diagnosis but also is coming with solutions of what can be done to minimize, convert or divert the given risk.

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