ABSTRACT

We invest to make money and in this attempt we need to be more careful and calculative. The investments we make are for our general well-being and it is made both for our present and future needs. It is assumed that investors are interested only in the monetary benefits to be obtained from investing, as opposed to such factors as the psychic income to be derived from impressing one’s friends with one’s financial prowess.

An investment can be defined as the commitment of funds to one or more assets over some future time period. The field of investments, therefore, involves the study of the investment process. Investments are concerned with the management of an investor’s wealth, which are the sum of current income and the present value of all future income. Investment can cover a wide range of activities and often refers investing money in certificates of deposit, bonds, common stocks or mutual funds. Although the field of investments encompasses many aspects, it can be thought of in terms of two primary functions, namely, analysis and management. But this thesis focuses only on the share market investments.
In the analysis, we study investments in the hope of earning better returns in relation to the risk we assume when we invest. A careful study of investment analysis and portfolio management principles can provide a sound framework for both managing and increasing wealth. Furthermore, a sound study of this subject matter will allow us to obtain maximum value from the scripts on investments that appear daily in newspapers and magazines, which in turn will increase our chances of reaching our financial goals. This research attempts to make a scientific study on the following areas of share market investments, using Soft Computing Techniques.

- Financial assets available to investors
- Total rate of return versus yield
- Compounding effects and terminal wealth
- Realized returns versus expected returns
- How diversification works to reduce risk
- The shares investment decision
- The significance of market efficiency to investors and so on.
Need for improving the returns of share market investment through Soft Computing Techniques:

In recent years there has been a growing interest in the need for designing intelligent systems to address complex engineering and business problems. One of the most challenging issues for the intelligent system is to effectively handle real-world uncertainties that cannot be eliminated. These uncertainties include the decision making of share market prediction, share price analysis, share investment, to name a few. These uncertainties result in a lack of full and precise knowledge of the system including its state, dynamics, and interaction with the environment. Applied Artificial Intelligence including Fuzzy Logic and soft computing techniques have shown great potential to solve these demanding, real world problems that exist in uncertain and unpredictable environments. These technologies have formed the foundation for intelligent systems.

Soft computing, unlike conventional computing is tolerant of imprecision, uncertainty, partial truth, and approximation. In effect, the role model for soft computing is the human mind. At this juncture, the principal constituents of soft computing are Fuzzy Logic, Neural Computing, Evolutionary Computation, Machine Learning and Probabilistic Reasoning, with the latter subsuming belief networks, chaos theory and parts of learning theory. It is important to note that soft computing is not a mélange; rather it is a partnership in which each of the
partners contributes a distinct methodology for addressing problems in their domain. In this perspective, the principal methodology in soft computing is complementary rather than competitive. Furthermore, soft computing may be viewed as a foundation component for the emerging field of conceptual intelligence. One of the successful applications of soft computing is the study on the share market investment, because it is always uncertain and speculative in nature and many are of the opinion that it is unsafe to invest in share market.

Neural Networks are used for learning and curve fitting, Fuzzy Logic is used to deal with imprecision and uncertainty, and genetic algorithms are used for search and optimization. These technologies often are linked together because they are the most commonly used components of what Zadeh (1992) called soft computing, which he envisioned as being "... modes of computing in which precision is traded for tractability, robustness and ease of implementation".

Trading models are algorithms proposing trading recommendations for financial assets. In our approach we limit this definition to a set of rules based on past financial data. The financial data, which are typical series of prices, enter the trading model in the form of indicators corresponding to various kinds of averages. Although progress has been made in understanding financial markets, there is no definitive prescription on how to build a successful trading model and how to define the indicators. Automatic search and optimization techniques can be
considered when addressing this problem. However, optimizing trading models for financial assets without overfitting is a very difficult task because the scientific understanding of financial markets is still very limited. Overfitting means building the indicators to fit a set of past data so well that they are no longer of general value: instead of modeling the principles underlying the price movements, they model the specific movements observed during a particular time period. Such a model usually exhibits a different behavior (or may fail to trade successfully at all) when tested out-of-sample. This difficulty is related to the fact that many financial time series do not show stability of their statistical behavior over time especially when they are analyzed intra-daily. To minimize overfitting during optimization, the optimization process must include the following important ingredients:

- a good measure of the trading model performance,
- indicator evaluation for different time series,
- large data samples,
- a robust optimization technique,

Secondly, the existing statistical tools and procedures are not suited in the present scientific computing era and especially in any said traditional techniques. Non-traditional techniques are mostly suited under these circumferences and these techniques will give us the best possible solutions. When we look into the
literature survey, the stock market problems can be dealt with different directions used with different tools like Neural networks, Portfolio selection, General optimization, Portfolio optimization, Heuristic optimization, CAPM (Capital Asset Pricing Model), Neural optimization, Vary (Value at Risk), Genetic algorithms, Prospect Theory, Simulated annealing, Technical analysis, Taboo search, Data patterns, Game theory, Bond pricing, Multi-agent simulations, Option pricing, Monte Carlo simulations, Volatility estimations, Time series analysis, SWAP pricing, Fuzzy logic, Arbitrage trading, Fractals and chaos and Term structure.

But all the above said methods and procedures have been concentrating mainly on stock predictions and optimizations, Share price movements through time series analysis and moving averages, bond, asset predictions and evaluations, share trading rules and evaluations and so on. Very few papers dealt with the share market investment and those too are adapting traditional techniques like moving averages, time series analysis etc., since the share market situation is always ambiguous in nature, no traditional techniques will give the accurate results. **Hence, the need for the present study to educate investors to invest their amount in a share market with safe, risk-less and high return on investment and these things are attained only we could use and analysis in a modern technique, called Soft Computing rather than usually followed the other traditional techniques.**