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RISK ANALYSIS OF VARIOUS PRODUCTS

[1]MEDA SAI GANESH and [2]Dr., K. LALITHA

[1]PG Scholar, [2]Associate Professor,

[1,2]Department of Management, Teegala Krishna Reddy Engineering College (UGC-Autonomous), Hyderabad,

Telangana, India

ABSTRACT

Projects should follow an integral testing and quality policy, for quality is a mindset, not a feature. Quality as such ought to be an integral part of project management. Looking at project governance, several aspects, among others, play an important role: costs, risks, time and benefits (also referred to as results or - business - value).

Although all of these aspects are important, it is worth emphasizing the aspect of risk, especially product risk, since this may help as a steering mechanism. It may help to find the balance between 'building the right thing', 'building the thing right', and 'building it fast'.

Many projects don't have unlimited time, money and resources for evaluating the quality of the product. Such constraints in terms of time, money and resources represent constraints on the result to be achieved and therefore often reduced evaluation possibilities of the product risks. As such, it is important to achieve a well considered balance between the investment in money and time on the one hand, and the results to be achieved and the risks covered on the other. The result of the product risk analysis provides the justification for this balance.

Based on the insight resulting from the product risk analysis, high risk products can be evaluated more intensively than those representing a lower risk. Be aware that risks and how to cover these risks are directly related tot the acceptance criteria. These acceptance criteria are available in various forms. As a section in a test plan, in the confirmation part of a story card, in a definition of done, etc.

There are many approaches on how to determine risks. However in general one could say: these approaches involve analyzing the product to be evaluated with the aim of achieving a joint view - for and with all stakeholders - of (the properties of) the product to be evaluated that represent higher and lower risk levels, such that corresponding measures can be assigned to this view.

What measures can be taken in order to cover these analyzed risks is decided when determining the quality strategy. Remember, quality is designed and built in, not tested in! Meaning, from the beginning of the project, everyone should embrace risk and quality thinking. When for instance a requirement is described (e.g. User story, use case) start thinking about possible risks at stake and how to cover these, for instance by executing a fagan inspection. Or when the system architecture is (being) defined, again think about possible risks and how to cover

these, for instance by means of a proof of concept. A last example of risk coverage is assigning specific test design techniques in order to cover identified (product) risks. Read more about risk coverage as part of the quality strategy in building block 'quality strategy'.

Too often product risks are seen as important for testing. Nothing could be further from the truth. Product risks deal with the risk for the organisation when the product does not have the expected quality. And organizations are still plagued by projects getting out of hand in terms of both budget and time, owing to software defects during the operation of the developed information systems. (better) testing contributes to the prevention of those kind of defects, but the general idea that the key lies with testing is a persistent misconception. Many analyses of defects show that testers certainly don't find everything. But even more: it turns out that the cause of defects lies within the development, design and requirements.

INTRODUCTION

Market risk:

market risk refers to the variability of returns due to fluctuations in the securities market. All securities are exposed to market risk but equity shares get the most effected. This risk includes a wide range of factors exogenous to securities themselves like depressions, wars, politics, etc.

Credit risk:

The debt servicing ability (may it be interest payments or repayment of principal) of a company through its cash flows determines the credit risk faced by you. This credit risk is measured by independent rating agencies like crisil who rate companies and their paper. A 'aaa' rating is considered the safest whereas a 'd' rating is considered poor credit quality. A well-diversified portfolio might help mitigate this risk.

inflation risk:

with rise in inflation there is reduction of purchasing power, hence this is also referred to as purchasing power risk and affects all securities. This risk is directly related to interest rate risk, as interest rates go up with inflation.

Interest rate risk:

In a free market economy interest rates are difficult if not impossible to predict. Changes in interest rates affect the prices of bonds as well as equities. If interest rates rise the prices of bonds fall and vice versa. Equity might be negatively affected as well in a rising interest rate environment. A well-diversified portfolio might help mitigate this risk.

This risk affects the bondholders more directly than equity investors.

Political/government policy risk:

Changes in government policy and political decision can change the investment environment. They can create a favorable environment for investment or vice versa.

Liquidity risk:

this risk is associated with the secondary market in which the particular security is traded. A security which can be bought or sold quickly with out significant price concession is considered liquid. The greater the uncertainty about the time element and the price concession, the greater liquidity risk. Securities which have ready markets like treasury bills have lesser liquidity risk

Types of risks:

modern portfolio theory looks at risks in different perspective. It divides total risk as follows.

total risk = unique risk + market risk

the unique risk of security represents that portion of its total which stems from firm-specific factors like development of a new product, a labour strike, or emergence of new competitor. Hence, the unique risk of a stock can be washed away by combining it with other stocks. In a diversified portfolio, unique risks of different stocks tend to cancel each other. This is also referred as diversifiable risk or unsystematic risk.

the market risk of a stock represents that portion of risk which is attributable to economy-wide factors like growth rate of gdp, the level of government spending, money supply, interest rate structure, and inflation rate. Even the diversified portfolio also can't away from this type of risk. This is also referred as systematic risk, non-diversifiable risk.

Choose investors investment:

It is completely based on investors financial out look that gives contentment and security; these investors like to be involved with the management of their money and their choice of investments.

Source: www.saxospread.com

Monitor the price:

Based on the performance of the fund, investor would like to diversify in different companies, because investor feels to get high returns.

The market will decide:

When investor invested in the funds, the relationship manager send to amc, then in amc fund manager invest in to the capital market. Based on the volatility of the market the investors know whether investor is profit or loss.

NEED OF THE STUDY

risk analysis is a scientific approach applied to the problem of risk. Although the term risk management is a recent phenomenon, the actual practice of risk management is as old as civilization itself. Risk management allows financial institutions to bring their risk levels to manageable proportions while not severely reducing their income. Factors like increasing competition, innovative products, technological revolution, and changing external

operating environment makes it necessary that proper risk management systems b implemented, risk management is thus a functional necessity and adds to the strength and efficiency of an organization on an ongoing basis.

RESEARCH METHODOLOGY

This study is basically depends on

1. Primary data
2. Secondary data

Primary data: the primary data collected from the different companies through enquiry.

Secondary data: the secondary data collected from the different sites, broachers, news papers, company offer documents, different books and through suggestions from the project guide and from the faculty members.

LIMITATIONS OF THE STUDY

- I am unable to get the information regarding different risks.
- I don't have sufficient examples to explain my analysis.
- Analysis of risk is not that much easy.
- There is no proper method to calculate the risks.
- Some risks can be understandable and some risks are not.
- Sometimes risk can be assumed but it is not the actual risk associated with that fund.

future is always uncertain. This is a big limitation to my study

REVIEW OF LITERATURE

Risk analysis

This rather thorny term, "risk analysis," camouflages a seemingly esoteric subject that hits virtually every american right where it hurts most--in the pocketbook! Risk analysis is the study of the chance of a damaging or life-threatening event happening in your life this very day. Fire! Flood! Theft! Earthquakes! Car accidents! Rabid t-rex attacks! What are **your** chances today? Photo: courtesy of ngdc/noaa

The basic ideas of risk analysis are quite simple, but the application can be quite complicated depending on the risk evaluated. But don't let that stop you! Insurance agents know all about risk analysis, since that is how they decide how much you will pay for insurance, and they are just normal people like you. To give you an idea of what's

involved, let's look at a simple example: auto insurance premiums. The total cost an insurance company has to cover each year for a particular type of accident is computed as follows:

Total cost = (cost of each accident) x (# accidents per year)

The number of accidents per year refers to the total number of accidents experienced by the group of people insured by the company. The actual number of accidents within a given group of people will, of course, change somewhat from year to year. So to get a good estimate of the average yearly cost, an insurance company will simply count the number of accidents for the group over an interval of several years and then divide the total number of accidents by the number of years. The resulting number per year is called the probability of occurrence for the particular accident. To break even, the insurance company must collect the total cost from the group. So your annual premium, or the cost per person in the group to cover that particular accident, is:

Premium = (cost of each accident) x (# accidents per year) / (# of people in group)

Your premiums will actually be slightly larger (a few %) so that the company can make a small profit.

We have considered only the cost of a single type of accident, but everyone knows that there are many different kinds of accidents--from small fender-benders, costing a few hundred dollars to repair, to large, car-totaling crashes, costing tens of thousands of dollars to settle. So a more realistic way of thinking about your premiums is to think of the total cost of accidents as a sum like: (the cost of small accidents times number of small accidents) + (cost of large accidents times the number of large accidents) and so on. When you take a "deductible," you are saying that you will pay for any accidents you have costing less than a certain amount. Since you pay for one type of accident, the total cost to the insurance company is less, so the premium you pay is less.

You should also realize that different kinds of accidents have different probabilities of occurrence. For instance, experience shows that minor wrecks occur more often than large ones, so the probability of a large wreck is smaller than the probability of a minor wreck. The number of accidents also depends on the type of people in a group. In general, high school students have more accidents per person than their parents, so the students' premiums are larger than their parents'.

Just for comparison, here are the chances of a few types of interesting events occurring in your life this year:

Event	Chance This Year
Car stolen	1 in 100
House catch fire	1 in 200
Die from Heart Disease	1 in 280
Die of Cancer	1 in 500
Die in Car wreck	1 in 6,000
Die by Homicide	1 in 10,000
Die of AIDS	1 in 11,000
Die of Tuberculosis	1 in 200,000
Win a state lottery	1 in 1 million
Killed by lightning	1 in 1.4 million
Killed by flood or tornado	1 in 2 million
Killed in Hurricane	1 in 6 million
Die in commercial plane crash	1 in 1 million to 10 million (depends on airline)

note that these numbers are national averages. They will be somewhat different depending on where you live, how old you are, whether or not you smoke or exercise, whether you like to golf during thunderstorms, and which airline you choose. On the other hand, there are some useful comparisons. For example, you are about 1,000 times more likely to be killed on the way to the airport than to die during the airplane flight. You are about 10,000 times more likely to die from any cause or to have your car stolen than to win a lottery.

Now let's apply risk analysis to natural hazards. How do you estimate the annual probability of an occurrence of a particular type of natural disaster--especially of disasters that don't happen every day? In just the same way as above: count the number of the type of event over an interval of time and divide the sum by the number of years in the interval. For example, based on geologic evidence, the 14 cascade volcanoes have erupted 50 times in the last 4000 years. So the probability of eruption for any given volcano in the cascades in any given year is 50/[(14)(4000)], or about 1 in a thousand (10^{-3}) per year. This translates into about 1 or 2 eruptions among the 14 cascade volcanoes each century.

Combinational factor analysis and combinatorial blowout!

Analyzing such vast information is an extremely difficult and challenging task. In conventional profiling methods, factor analysis is performed on a few (to several) variables at a time using statistical software. As the total number of variables analyzed increases, the number of combinations to be examined in this way grows combinatorial. When a large number of variables is involved, the number of combinations is too large. Thorough systematic analysis is all but impossible! A conventional method to this problem is to examine only combinations that are likely to have influence. However, hunch can leave out important factors without being noticed.

Fortunately, this problem can be overcome with cms **hotspot profiling analysis tools**. Hotspot profiling analysis drills-down data systematically and detects important relationships, co-factors, interactions, dependencies and associations amongst many variables and values accurately using artificial intelligence techniques such as incremental learning and searching, and generate profiles of most interesting segments. It is noted that insurance premiums are normally stipulated with profiles of risky (or very low-risk) policy holders. Hotspot analysis can identify profiles of high (and low) risk policies accurately through thorough analysis of all available insurance data. The followings are examples of risk factor profiles. It is noted that the same can be applied to other quantifiable risk insurances such as **credit insurance**, **general insurance**, and so on.

DATA ANALYSIS AND INTERPRETATION

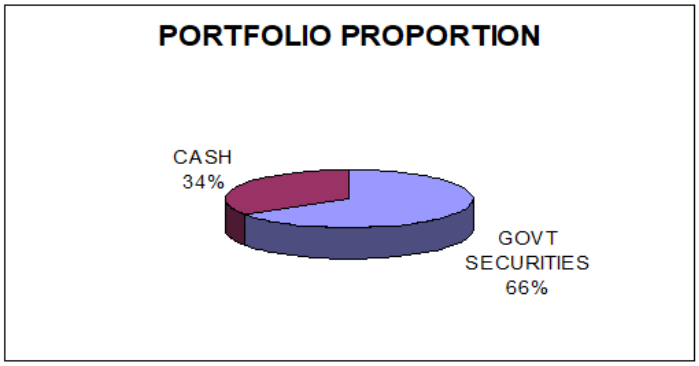
AVIVA LIFE GILT FUND PORTFOLIO:

Company Name	Sector	Amount (Rs.Crores)	%age
Cash			
Cash		17.83	34.23
Others			
8.33 GOI 2036		15.01	28.82
8.23 GOI 2027		14.39	27.64
7.49 GOI 2017		4.85	9.32
Total		**52.08**	**100.01**

The money collected through this fund was invested in govt. securities only. The remaining money which was not invested in any type of assets kept as idle.

Proportions:

Government securities	----	65.78 %
Cash	----	34.23 %



FRANKLIN TEMPLETON GILT FUND PORTFOLIO:

Company Name	Sector	Amount (Rs.Crores)	%age
Call & Others			
Call Money		11.15	16.98
Others			
8.33 GOI 2036		20.01	30.48
7.49 GOI 2017		19.41	29.57
7.99 GOI 2017		15.09	22.98
Total		**65.66**	**100.01**

Proportions:

Call money	----	16.98 %
Government securities	----	83.03 %

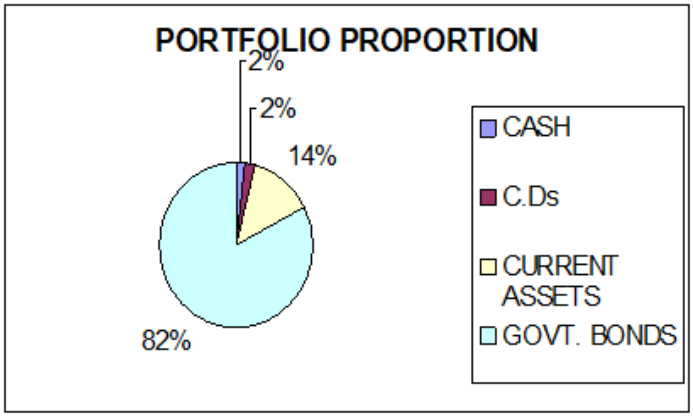
ICICI PRUDENTIAL GILT FUND PORTFOLIO:

Company Name	Sector	Amount (Rs.Crores)	%age
Cash			
Cash		1.41	1.88
Certificate of Deposits			
IDBI Ltd	Finance - Banks - Public Sector	1.50	2.01
Current Assets			
Current Assets		10.20	13.64
Others			
7.95 GOI 2032		33.64	44.99
7.99 GOI 2017		20.12	26.91
7.49 GOI 2017		7.91	10.58
Total		**74.76**	**100.01**

Proportions:

Cash	----	1.88 %
C.Ds	----	2.01 %
Current assets	----	13.64 %
Government securities	----	82.48 %

CHART:



FINDINGS

SUGGESTIONS

CONCLUSION

FINDINGS:

- Through this analysis i got the information about various risks involved in investment avenues. And what risk is controllable and what not to be controllable. Because we can't control some risks. And we don't know how to control these risks. These risks influence the all type of securities.
- How can we analyze the various risks related to mutual funds? That means which risk involves in which type of mutual fund. Just like as default risk is not involved in gilt funds. And portfolio risk is not involved in gilt funds, its involved in equity funds and also in balanced funds.
- How can we reduce the risk factor in our own portfolio? We can't avoid the risk factor in any investment alternative. Because giving something today and taking that in future is always risky. There are other types of risks also involved in investment proposal. We can reduce the risk component through diversification in our portfolio. But the risk will not get out. We can reduce the component.
- Which mutual fund is better in short term and for long term period? Yes, the investment decision sometimes may depend on time factor. Some people want long term investments and some people wants short term investments. Every mutual fund is not the better opportunity to long term investment and vice versa. In my opinion balanced funds are better investment avenue in long term and diversified funds are better in short term.

- Now i am able to explain the relation between risk and return. When the risk component increases in the portfolio the return component also increasing. Like that the risk component decreases the return component also decreasing. That means the risk and return have positive relation between them.

SUGGESTIONS

after the analysis of the data and analyzing the interpretation from the analysis, the following are the suggestions being given to aviva life insurance.

- ✓ In india investing in the stock market and investing in mutual funds is very less comparing with the developed nations. Some people don't have knowledge about stock markets and how they are working. Some people thinks that its lust like as gambling. Company has to educate the people to invest in different types of mutual funds and different types of securities.
- ✓ Company has to educate people about mutual funds and how they are working in our economy. People don't have the knowledge about mutual funds. They don't know that the mutual funds are the safest investment comparing with equity market. Company has to conduct different programs about mutual funds to the people.

CONCLUSION

from the above analysis part i am explaining the portfolios of different mutual funds and different proportions of different mutual funds.

from table 1 to 5 i am giving the examples of gilt funds portfolios and their proportions. In this portfolio we can observe that the majority of the funds are invested in govt. Securities. So the default risk is very less, but the interest risk and liquidity risks are there. These funds have less profitability and less risky. Because the money collected fro this funds was invested in govt. Securities only. Probably the govt. Gives less rate of interest, so the profitability of these funds also less. But default risk is very less. That means govt. May not get defaulted. So with out fear any one can invest in these type of funds. And the other one liquidity risk means the convertibility of money from securities is very less and the profits also very less. So, many people are not ready to invest in such type of funds. Once we invest in that type of funds the investor may face liquidity problem. Some funds may have lock up period. Managing these type of funds is very easy.

from table 6 to 10 i am giving the examples of debt funds portfolios and proportions. In these portfolios we can observe that the majority of the funds are invested in debt securities. Debt securities have a particular rate of interest as return. The rate of return was already determined. At the time of issuing of debt securities issuer announces the rate of interest. The money collected through this fund was invested in this type of debt securities. So the rate of return may less than the equity funds. But this type of fund safer than the equity funds. The persons who are not able to bare high risk, they can go for this type of fund. But this funds faces default risk because the debt securities issued by joint stock companies and public sector units. And these type of funds may face interest

rate risk because interest rates may increase in the market but the rate of interest was pre determined in debt securities. And finally these funds may face inflation risk because the rate of inflation in future may increase or decrease compared with the interest rate earned by the debt securities. So this type of funds faces default risk, interest rate risk, inflation risk.

from table 11 to 15 i am giving the examples of balanced funds portfolios and proportions. In these portfolios we can observe that the money allocated to different type of investments. That means the fund manager gives equal importance to all type of avenues.

these funds are much better than debt funds and diversified funds. Because the money collected through this funds was invested in both debt and equity and also in govt. Securities. But the proportion of govt. Securities is very less compared with others. Through investing debt securities the fund manager reducing the size of market risk component and investing in equity market the fund manager increasing the size of return component. He can optimize his risk and return in this type of portfolio.

But these funds also facing the default risk, because investing in equity and debt was the reason for default risk, investing in equities was the reason for market risk, investing in debt securities was the reason for interest rate risk, construction of portfolio was the reason for portfolio risk. So these funds have default risk, interest rate risk, market risk, portfolio risk.

from table 16 to 20 i am giving the examples of diversified funds portfolios and proportions. In these portfolios we can observe that the major part of money was invested in equities. These funds have high return component as well as high risk. The money collected through this fund was invested in equity securities.

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