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Remember: Any group members who did **not contribute to the project should be given all zero (0) points for the collaboration grade on the GWP submission page.*

Statement of integrity: By typing the names of all group members in the text boxes below, you confirm that the assignment submitted is original work produced by the group (excluding any non-contributing members identified with an "X" above).	
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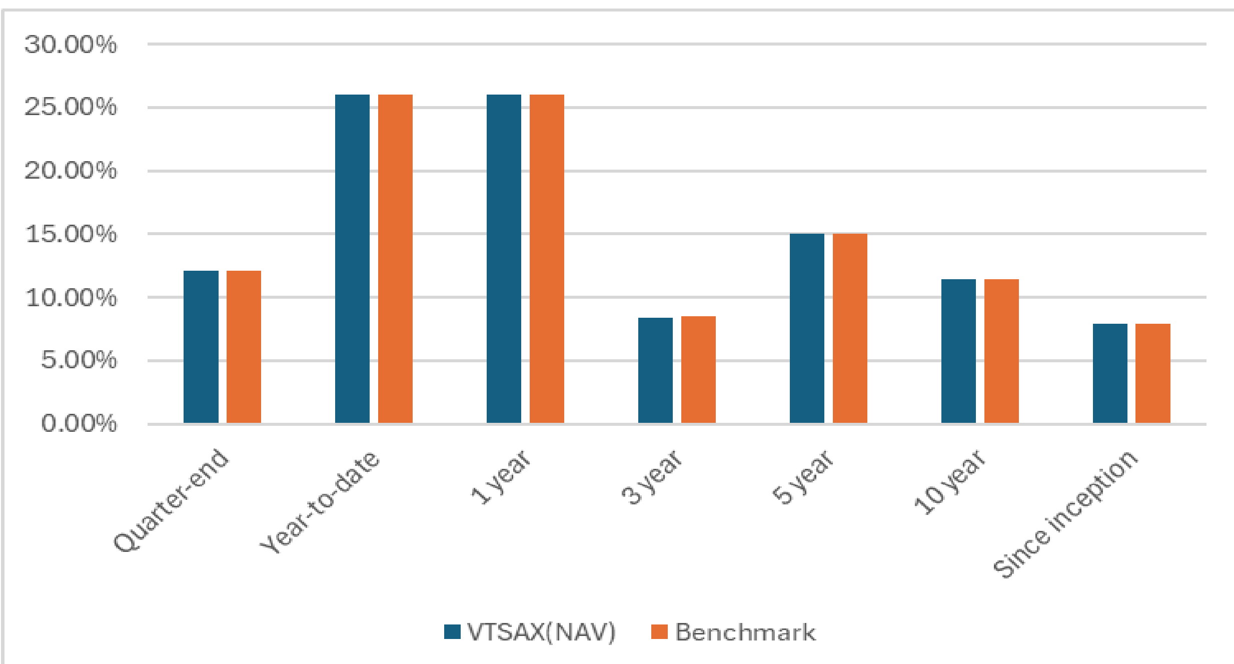
Use the box below to explain any attempts to reach out to a non-contributing member. Type (N/A) if all members contributed. **Note:** You may be required to provide proof of your outreach to non-contributing members upon request.
Didn't respond at group discussion

Mutual Fund

Vanguard Total Stock Market Index Fund Admiral Shares is a passively managed mutual fund offered by Vanguard that tracks the performance of a benchmark index that measures the investment return of the overall market. This index captures the large-, mid-, and micro- cap stock which encompasses the entire U.S stock market.

Performance

For evaluating the performance of a mutual fund, we can consider a parameter such as Net Asset Value. Net Asset Value (NAV) represents the intrinsic value of a fund per share where liabilities are subtracted from total assets.



The chart represents the comparison between Net Asset Value of VTSAX and its benchmark. Benchmarks provide a standardized way to compare the performance of a mutual fund against its peers and the broader market. In recent years and past 10 years, it consistently performed by exceeding the benchmark index. In the past 10 years, it has performed an average return of approximately 15.24% whereas in recent years it is 19.09%.

Fees

Expense Ratio: Every mutual fund charges an amount for operating their administration, management and other marketing and distribution costs. These fees are deducted from investors. The expense ratio is 0.04% for VTSAX which makes this fund a cost effective index fund.

Purchase Fee: When an investor buys shares, they charge an amount as a purchase fee. Purchase fee does not apply on VTSAX which makes this fund more attractive.

Redemption Fee: When investors withdraw their money, then they are charged an amount which is known as redemption fee. VTSAX has no redemption fee which allows them to keep more of their returns.

Transparency

Transparency plays a pivotal role for the investor to make decisions based on different parameters and historical performance. Vanguard provides extensive information on their website about their respective products including historical performance and price, fees and cost, holdings, yield and distribution as well as they provide some statistics about risk and volatility which makes it easier for an investor to make a decision.

Liquidity

An open ended fund can be traded on trading days at its Net Assets Value which makes it easy to enter and exist as needed. There are some parameters for related to trading time interval for VTSAX

- Trading Days: VTSAX can be traded once a day, on all business days except weekends and holidays.
- Cut Off Time: The cut off time for VTSAX orders is 4.00 PM ET. Before this time , orders will be considered as that day's closing and after this time, orders will be considered as the next business day's closing.
- Settlement: If the investor purchases VTSAX shares before the cut off time, the transaction will be settled on the same day, otherwise on the next business day. After the settlement , the investor will be able to trade.

Professional Management

VTSAX is passively managed where it tracks a specific index rather than individual stock. Whereas in actively managed funds, managers try to outperform the market through stock selection and trading. Passive management plays a crucial role for the investors by offering low cost, transparent and well diversified investment options.

Investor Protection

Fiduciary Responsibility: Vanguard, as a fiduciary advisor, they make the investment decision with due diligence , ensuring the best interests of its shareholders with ethical standards.

Securities Investor Protection Corporation (SIPC) Insurance : SIPC insurance is a crucial element for the investor which provides coverage for cash and securities in brokerage accounts in the incident of brokerage firm failure. VTSAX covered up to $500,000 including $250,000 cash through SIPC in the event of failure.

Securities and Exchange Commission (SEC): SEC established the best practices for the legal framework of Mutual Fund as well as the marketing and advertising regulation.VTSAX is straight about regulation which is ruled by SEC.

Financial Industry Regulatory Authority (FINRA) : FINRA requires brokerage firms to collect the Know Your Customer (KYC) details information and identify the money source and detect the money laundering risk. VTSAX is regulated by FINRA as well.

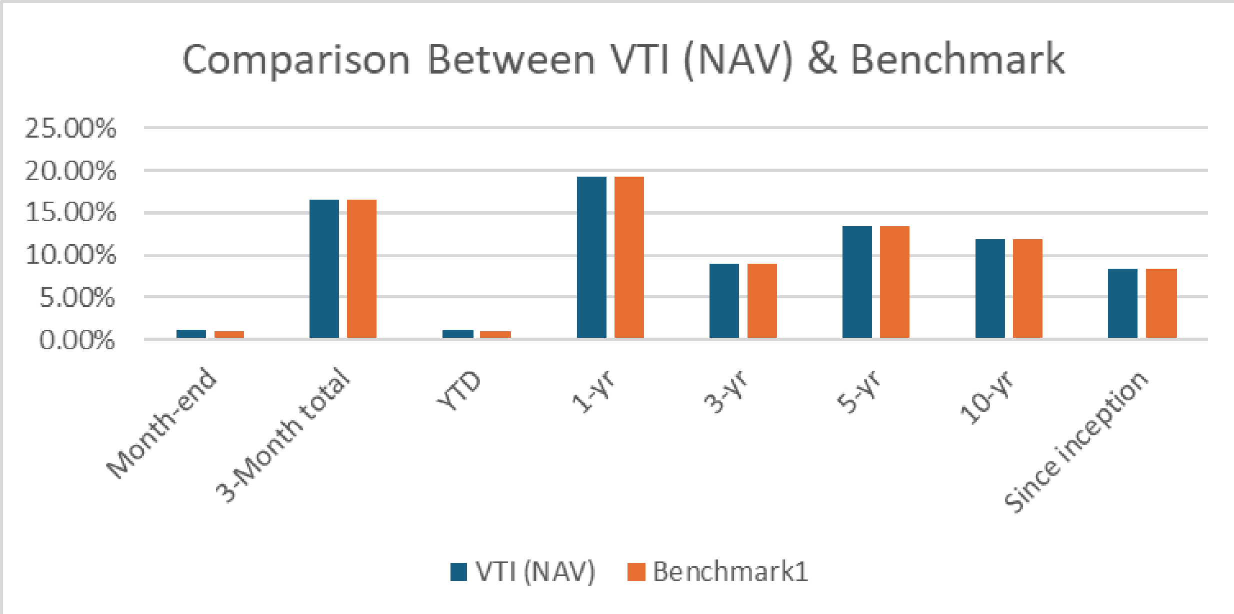
Exchange Traded Fund

Overview -Vanguard Total Stock Market Index ETF (VTI)

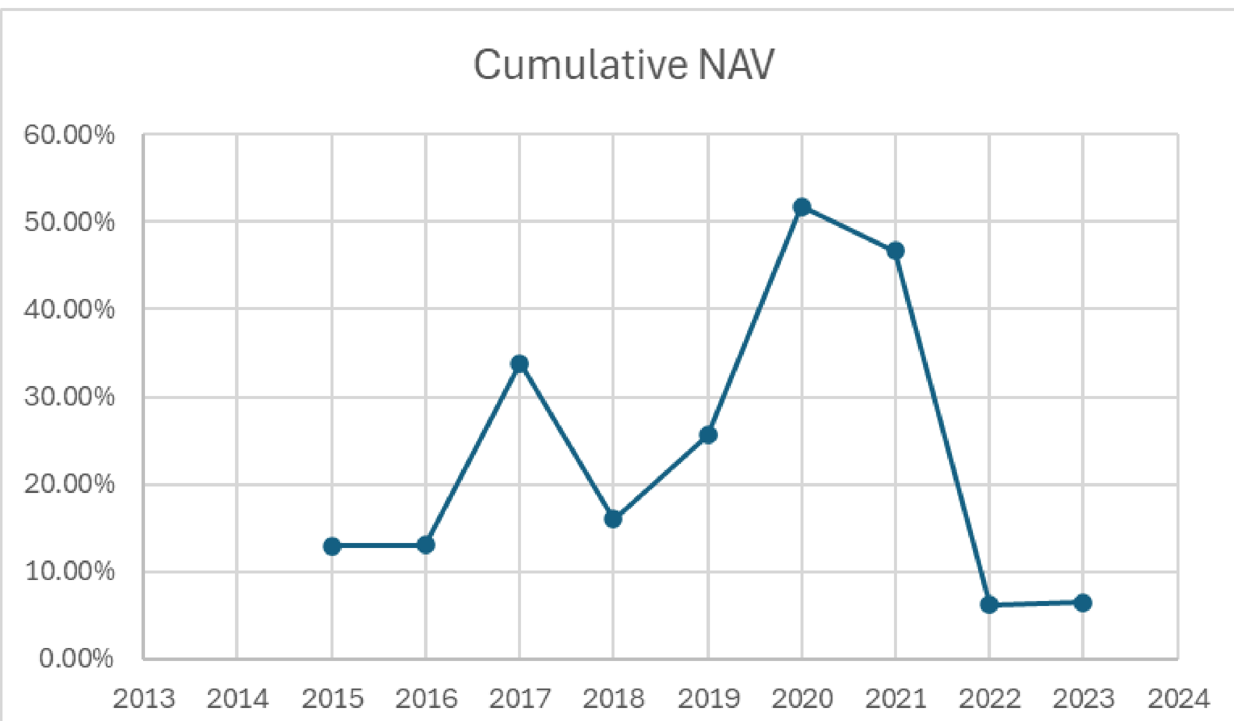
Vanguard Total Stock Market Index ETF tracks the CRSP US Total Market Index providing broad exposure to the entire US stock market across large, mid, and small-cap companies, encompassing both growth and value styles. VTI offers a low-cost, diversified, and passively managed approach to investing in the US stock market. According to the current status of VTI, its minimum investment amount is $1.00 which makes it accessible to a wide range of investors. Its current market price is $251.78 which reflects a recent increase of $4.92 (1.97%).Overall, VTI keeps a broad exposure to the US stock market for its flexible features.

Performance

VTI has a strong track record of performance, consistently exceeding its benchmark index over the long term.



The chart represents the comparison between VTI net asset value and its benchmark. In recent years it has performed an average return of approximately 17.59% whereas in the past 10 years, the average value is 13.38%.



On the other hand, from the cumulative net asset value yearly trend, it is clear to say that overall NAV has an increasing trend from 2015 to 2020 . In contrast, after 2020 NAV has been getting down which is a concern for investors.

Fees

Expense Ratio: VTI boasts one of the lowest expense ratios in the industry, at only 0.03%. With a low fee deduction, investors can keep more of their returns.

Transparency

Transparency plays a pivotal role for the investor to make decisions based on different parameters and historical performance. Vanguard provides extensive information on their website about their respective products including historical performance and price, fees and cost, holdings, yield and distribution as well as they provide some statistics about risk and volatility which makes it easier for an investor to make a decision.

In addition, VTI's holdings are fully transparent as it is passively managed and provides insights about underlying assets to investors by tracking the underlying index.

Liquidity

VTI is considered as a highly liquid ETF across the industry, offering investors a flexible entry and exit due to its large size, high trading volume, and a tight bid-ask spread.

Since VTI trades a large volume of shares daily, which ensures readily available trading options for buyer and seller by facilitating smooth transactions. VTI keeps a good record of tightness in bid-ask spread. As a result, the transaction cost of investors is minimized. VTI has one of the highest market capitalization over the market which attracts a diverse range of investors.

Professional Management

VTI is passively managed which means the fund automatically adjusts its holdings to match the composition of the target index without involving any dedicated professional team for investment decision making. As a result the investors get the advantage of low fees, greater transparency, diversification of portfolio, and lower taxes liabilities.

Investors Protections

Fiduciary Responsibility: Vanguard, as a fiduciary advisor, they make the investment decision with due diligence , ensuring the best interests of its shareholders with ethical standards.

Securities Investor Protection Corporation (SIPC) Insurance : SIPC insurance is a crucial element for the investor which provides coverage for cash and securities in brokerage accounts in the incident of brokerage firm failure. Insurance is not directly applicable to ETFs, investors holding VTI shares in a brokerage account which covers up to $500,000 including $250,000 cash through SIPC in case of failure.

Securities and Exchange Commission (SEC): SEC established the best practices for the legal framework of Mutual Fund as well as the marketing and advertising regulation.VTI is straight about regulation which is ruled by SEC.

Financial Industry Regulatory Authority (FINRA) : FINRA requires brokerage firms to collect the Know Your Customer (KYC) details information and identify the money source and detect the money laundering risk. Vanguard, the issuer of VTI, is a member of FINRA, enforces industry roles and provides investors protection.

Indexed Annuity which uses zero coupon bonds and options

Overview

Index annuity is a financial product which offers a series of payments distributed at specific intervals. This product is typically managed by an insurance company.There are two types of indexed annuity offered by the industry - equity-indexed annuities (EIA), registered index-linked annuities (RILA). Both of these annuities give returns based on the selected market index but EIA ensures a guaranteed minimum rate of return.The insurance company uses different strategy to provide the return to indexed annuities including investment in stocks, bonds.

Zero coupon bonds are debt securities that don't make any periodic interest payments. Instead, they are issued at a discount to their face value and after maturity this face value gains a capital appreciation. Insurance companies might use zero coupon bonds as part of their investment strategy to take out their annuity's liabilities. When the bond matures, the return of annuity's generated from the capital appreciation of the zero coupon bond that the insurance company can afford to credit to annuity holders.

Performance

The performance of index annuity depends on the selected index performance. It is very important to understand how the insurance company measures the return, how the index is tracked, as well as how much of the index return is credited to investors. The return of investor depends on various factors such as:

1. Cap: Cap means the upper limit of returns that is predefined by the insurance company over a certain period of time. For example, if the index return is 12% but the annuity cap is 5%, then the investors get the 5% of return.

2. Participation rate: Participation rate means the percentage of index return the annuity holder gets credited from the insurance company.If the index goes up 5% and the annuity participation rate is 85% , then 4.25% return would be credited to investors account. Many index annuities have participation rate as well as cap, which limits return of investors.

As we consider an index annuity which uses zero coupon bond, performance mainly depends on market conditions, more on fluctuation of interest rate. If interest rates rise, the present value of future cash flow decreases, leading to decline in the bond's market price. However, index annuities have strategies that provide a certain level of protection to investors. If the index exercises a fall in the market, then investors' annuity never falls below the capital.

Fees

The annuity provider may charges various fees such as

1. Mortality & Expense Fees: The insurance company charges this fee to cover the mortality risk and administration expenses including beneficiaries upon investors death, marketing, recordkeeping, customer service.
2. Surrender charge: It is a financial penalty imposed by the insurance company, when an investor withdraws their money before a specific time period, typically 6 to 10 years. They imply it because early withdrawals can disrupt their financial plannings.

Transparency

Transparency is crucial in evaluating the attractiveness of any financial products. The investors should have access to clear and comprehensive information regarding historical track of index and associated risk, interest credits, all fees that relate to the annuity.

Liquidity

Liquidity is an important concerning factor for investors for investing in annuity since annuity has limited liquidity. Index annuities which use zero coupon bonds may have surrender periods. Withdrawing money before this period, incur penalties to investors. So investors should carefully evaluate their liquidity needs before investing in annuity.

Professional Management

When any investor invests in any investment product, professional management plays the crucial role to be succeeded in the investment lifecycle. They may guide the overall investment by managing the annuity, tracking the index which is zero coupon bond - mainly its interest rate.

Investors Protections

Index annuity is issued by an insurance company. They are regulated by the state insurance department, only those annuity or securities that are regulated by SEC and FINRA. They provide the coverage in case of insurer insolvency.

Answers of Questions 7-9

7. As a salesperson at the mutual fund, let's address the questions related to collateral related risks, mainly credit risk:

A. Credit risk arises from the repayment failure of borrowers which leads to losses for the lender. Open-ended mutual funds don't have direct credit risk as the net asset value of the fund depends on the underlying securities such as stocks, bonds, real-estate, or commodities. Each of the securities have an individual risk profile. In a specific mutual fund, the risk is mitigated by spreading the individual risk of each securities. However, underlying securities within the fund can expose the investor to credit risk.If the issuer of any security might default or a company in the fund goes bankrupt, its net asset value plummets, broadly impacting its overall price.
B. Mutual funds are not insured against credit risk. Investors invest their capital in mutual funds by considering the underlying securities risk. However, the U.S. Securities and Exchange Commission (SEC) regulates the best practices for the legal framework of mutual funds. In addition, Securities Investor Protection Corporation (SIPC) insurance provides coverage to investors in case of brokerage firms failure.
C. Questions to Insurance Salesperson
    - ➢ How does the index annuity mitigate the credit risk?
    - ➢ How long has the company been in business, and what is its track record of financial stability?
    - ➢ Does the annuity offer any additional feature to protect against insurer default, such as a surrender value guarantee?
    - ➢ Can you explain the historical performance of your company?

8. As a salesperson at the mutual fund, let's explore the questions related to statistical related risk, focus on correlation.

A. Correlation among equities of a mutual fund measures how returns of individual equity move together. Positive correlation between two equities means they move in the same direction (both go up or down together). On the other hand, in negative correlation equities move in opposite directions which means if one goes up, the other goes down. A mutual fund with highly correlated equities may experience higher gains or losses depending on the market direction which make it more volatile. Once it falls, then its will amplifies the losses of investors. Therefore, medium to higher correlation in equities of mutual funds is not necessarily a safe investment.

B. Questions from insurance salesperson to mutual fund salesperson:

➢ How much time do you consider for poor market performance of your fund?

➢ Is it a good decision to liquidate your fund when the fund is experiencing some short term fluctuation?

➢ How diversification keeps impact in the down market?

C. Questions from mutual fund salesperson to insurance salesperson:

➢ What economic factors do you consider for participation rate and equity market performance?

➢ How does social interaction influence the participation rate and equity market performance?

Answers of Questions 7-9

7. As an insurance salesperson, let's address the questions related to collateral related risks, mainly credit risk:

A. Index annuities are backed by the financial solvency of the issuing insurance company. The more the financial strength of the issuing company, the more it is safe to invest. So the primary credit risk of index annuity is associated with financial stability of the issuing company. If the issuing company faces any financial difficulties, then it will keep impact on promised returns of the annuity holder. Another risk associated with the linked index. If the index performance goes down steadily, the buffer losses will be absorbed from the insurance company. When the loss exceeds the buffer, then the investor has to absorb the losses.
B. In the United States, the state guarantee association provides the credit guarantees for a certain amount of annuity's value in case of an insurance company's insolvency.
C. Questions
    - ➢ What is the current credit rating of the insurance company issuing the annuity contract?
    - ➢ What is the performance of the underlying index in recent years? Is it volatile or stable ?

8. As a salesperson at the insurance company, let's explore the questions related to statistical related risk, focus on correlation.

A. In index annuity, the return varies for the performance of the underlying index which is closely tracked by the insurer. Generally medium to higher correlation among equities of the underlying index lead to higher participation rate. Because the insurer perceives lower risk in linking the annuity to a highly correlated index and they may be more willing to pass on a larger portion of gains to the annuity holders.Higher correlation also lead to higher caps because insurer may be more comfortable offering higher caps since the risk of significant market fluctuations is perceived to be lower.

B. Questions

- ➢ Do your products offer any downside protection mechanisms, such as stop loss orders or hedging strategies?
- ➢ What is the historical performance of your products during the market downturn?

C. Questions

- ➢ How does the participation rate impact the potential returns compared to the underlying index?
- ➢ Is the participation rate fixed or variable throughout the contract?

9. As a salesperson at the insurance company, let's explore the questions related to magnifying risk.

A. Downside Protection: Volatility is an integral part of the equity market. Index annuity provides downside protection against the volatile market which makes this financial product more attractive to investors. They offer minimum guaranteed return as a downside protection. They use a feature named as Floors which means a maximum percentage of loss will be absorbed by the investor if the market index goes down. If the floor percentage is 5%, the maximum loss is 5% for the investor. When market down percentage exceeds 5%, the excess amount will be absorbed by the insurance company. However, the insurance company limits the potential upside through participation rate and rate cap.

B. Upside Potential: When indexed annuity provides downside protection, they limit the potential upside through participation rate and rate cap. Participation means the percentage of an index returns that are credited to the investors. For instance, if an annuity has 75% participation rate, then the index linked returns would amount to 75% of gains associated with the index. For example, if the participation rate and index gain is 80% and 10%, then 8% of gains will be credited to investors. On the other hand, rate cap means the maximum percentage of interest that an index annuity can earn. For instance, if an index gains 10%, but an investor has a cap of 6%, only 6% will be credited to investors. In contrast, cap can protect investors from excessive losses in a down market.

C. The participation rate in index annuity acts as a form of leverage. A higher participation rate means the investor has more leverage to benefit from the positive movements of the underlying index. However, higher participation rate will suffer the investor when the market is in a downturn. So a level of participation rate needs to be a trade-off between potential return and downside protection.

Step 3

10 . a. Explanation on frictional factors for mutual fund

I. Large capital flows: Large capital flows in and out makes the fund volatile. When many investors simultaneously decide to buy or sell the shares of the fund, it makes an impact on the liquidity and trade execution. In case of large inflows, the fund manager might face a challenge to deploy a large amount of capital which potentially leads to a bubble and future market volatility. Conversely, large outflows can force the fund to sell the assets quickly, potentially driving down their prices and transaction costs.

II. Lack of intraday trading: Mutual funds typically do not offer intraday trading, meaning investors can only buy or sell shares at the end of the trading day at net asset value price. This lack of intraday trading can be a limitation for investors who want to react quickly or take advantage of short term trading. Investors cannot exercise on real time prices that lead to missed out investor expected prices sometimes. They have to wait for the closing price till the end of the trading day.

III. Limited transparency of holdings: Mutual funds are not required to disclose their holdings information on a daily basis. Instead they disclose their holding information quarterly or semi-annually. This limited transparency leads to difficulties to make decisions for investors. Awareness of the funds holdings and their underlying securities performance keep a crucial impact on investors decisions. In fast changing financial markets, it is very important to get information in real time for making quick decisions.

10.c. Explanation on frictional factors for index annuity

I. Penalties for early withdrawals: Index annuities have a specific surrender period. An investor cannot withdraw their funds before the surrender period. If investors withdraw their funds before the surrender period, the insurance company may impose penalties. This limited access of liquidity can be a significant issue for investors who need immediate access to their fund due to unforeseen circumstances. It is crucial for investors to carefully consider their liquidity needs and financial goals before commiting to an index annuity.

II. Lack of control over participation rate: The participation rate directly impacts the potential upside. As participation rate is defined by the insurance company, that limits the maximum of return during the strong market performance. For instance, if the insurance company maximizes the participation rate, the return will be limited by the cap rate. So during the strong market performance returns are limited by participation rate and cap rate in index annuity market, whether the investor gains more returns from the stock market.

III. Limited transparency of fees: Index annuity often comes with various fees such as mortality and expense fees, administration and others. However, the disclosure of these fees may not be transparent as some other financial products. It is challenging for investors to understand the fees structure and how these fees may impact on overall returns.

11.a. Regulation on mutual fund crisis

By the end of 2003, there was a mutual fund trading scandal in which mutual fund companies were involved with illegal practices that affected the small investors. The very specific violation was they allowed some special long term investors to make the rapid trades. One of the practices was ' Late trading' and another one was ' market timing'. In 'Late trading', the mutual fund companies allowed some institutional investors to buy their funds when the market closed. Besides, the 'Market timing' in which the mutual fund families allowed their wealthy clients to trade their funds faster than the prospectuses allowed. Moreover, they did other abuses like excessive fees and unethical sales practices. While the scandal was revealed the American companies mentioned that the other countries could be the victim for the same illegal practices throughout the mutual fund companies. They broke the regulation just because of the compensation that means the manager was paid a percentage based on the total asset invested in the fund. Therefore, the main reason behind this unethical practice was the attractive fund which gained more money will reward the managers for their high returns. In addition, the mutual fund manager allowed the long term investors like hedge funds and other institutional investors, to late trade and market time. In this case, both parties benefited but the smaller investors faced increasing the losses from their investments.

Though they tried to prevent the illegal trades, the market timers played their strategy. Besides, the market timers were detected only when they had made a number of trades. The illegal practices were encouraged just because of the competition among the mutual fund companies, which created a competitive environment.

To respond to the crisis, the Securities and Exchange Commission proposed new mutual fund rules and regulations. They announced a specific schedule for the end of the next two months, 2003. They proposed a rule which ended the abuses of late trading and the time was 4o' clock by the eastern time. If any agent received the trades after 4o' clock that would be considered the price of the next day. Moreover, a rule implied in the trading is that those who want to make quick trades have to pay a mandatory redemption fee.

SEC also imposes a rule to the mutual fund and the advisers to implement the compliance policies and appoint a compliance officer to reporting. These strict regulations would have to be effective for the crisis (Labaton stephen, 2003).

11.c. Regulation on index annuities are not suitable for everyone:

Index annuity is a complicated financial instrument. These complex instruments are mixed with fixed and index annuities. This is a money management instrument which is traded by the insurance companies.

State insurance commissioners regulate the index annuities. As well, SEC and FINRA regulate those annuities which are registered as securities. Usually, the prospectus will deliver the index annuity if this is security. Experts suggest that index annuities can provide lower return than the investors' expectation. The most well known index annuity is S&P 500 index. The feature of index annuities expose the higher risk with higher return. On the other hand, fixed index annuities provide lower risk with lower return. As a result, the return of index annuity could be higher or lower than the return of fixed index annuity which is guaranteed.

Here fixed index annuities ensure the safe returns from the risk of market downwards, that means it guarantees at least the principal of the account holder at any market-fall situation. Usually financial advisors and insurance agents sell these annuities but the customers can buy these annuities from the inconvenience companies directly. However, the investors of index annuity should review the value of the annuity and review the entire contract. The advisor of annuities agrees that this complex financial instrument that means index annuity is not for the beginners. Before investing here for the very first time the new investors should look for experts or financial advisors to give the proper guidance for investing.