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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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Note: You may be required to provide proof of your outreach to non-contributing members upon request.

N/A

Instrument A = Mutual fund

Instrument B = ETF

Instrument C = Indexed annuity

Instrument A

An open-ended, low-cost mutual fund that tracks a broad market index is an investment vehicle that allows investors to gain exposure to a diversified portfolio of securities that closely mirrors a broad market index, such as the S&P 500 or the Total Stock Market Index.

1. Performance

The performance of a low-cost mutual fund that tracks a broad market index is generally in line with the performance of the underlying index it tracks. The fund's objective is to replicate the performance of a broad market index, such as the S&P 500, and provide returns that match the index's returns. The fund's performance may differ slightly from the index due to tracking errors and management fees, but the difference is usually negligible.

2. Fees

The fees associated with mutual funds can vary widely depending on the specific fund and the management style. The two main types of fees associated with mutual funds are expense ratios and sales loads:

Expense Ratio: The expense ratio is the annual fee that a mutual fund charges its investors for managing the fund's portfolio. The expense ratio can range from as low as 0.05% for passively managed index funds to 1.5% or higher for actively managed funds.

Sales Load: Some mutual funds may also charge a sales load, which is a commission paid to the fund's salesperson or broker. Sales loads can be either front-end, meaning that they are charged at the time of purchase, or back-end, meaning that they are charged when the investor sells their shares. Sales loads can range from 1% to 8% or more, depending on the fund and the broker.

It's important to note that mutual fund fees can significantly impact an investor's returns over time, as higher fees can eat into investment gains. As a result, it's important for investors to carefully consider the fees associated with any mutual fund they are considering investing in, as well as the fund's performance history and other factors.

3. Transparency

Mutual index funds are typically very transparent. Investors can easily access information about the fund's holdings, fees, and performance. The fund's portfolio typically mirrors the index it tracks, and changes to the portfolio are disclosed on a regular basis. Investors can also easily find information about the fund's investment

4. Liquidity

Most low-cost mutual funds that track broad market indices are highly liquid. Investors can buy and sell shares of the fund on any business day, and the shares are typically redeemed at the current net asset value (NAV) of the fund.

5. Professional Management

While index funds are typically passively managed, they still require professional management. The fund manager must ensure that the fund's holdings closely track the index it follows and manage the portfolio to minimize tracking errors. The fund manager may also be responsible for making adjustments to the portfolio to ensure that it remains in line with the index.

Examples of managers of mutual funds:

- American Funds Growth Fund of America: This mutual fund from American Funds invests primarily in large-cap growth stocks and has a long track record of strong performance.

6. Investor Protections (e.g. Fiduciary responsibilities, SIPC, SEC, FINRA, etc.)

Low-cost mutual funds that track broad market indices are subject to regulatory oversight by the Securities and Exchange Commission (SEC). Additionally, the fund may be a member of the Financial Industry Regulatory Authority (FINRA) and the Securities Investor Protection Corporation (SIPC), which can offer some protection to investors in the event of fraud or bankruptcy.

Instrument B

An open-ended, low-cost mutual fund that tracks a broad market index is an investment vehicle that allows investors to gain exposure to a diversified portfolio of securities that closely mirrors a broad market index, such as the S&P 500 or the Total Stock Market Index.

1. Performance

An ETF's performance can vary widely depending on the specific fund and the market conditions. ETFs typically track a specific market index or sector, such as the S&P 500 or the technology sector, and aim to replicate the performance of the index or sector. The performance of an ETF can differ slightly from the index it tracks due to tracking errors and management fees.

2. Fees

ETFs typically have lower fees compared to actively managed mutual funds. The expense ratio of an ETF can range from 0.03% to 1%, depending on the specific fund. Some ETFs may also have additional trading fees or commission charges. Overall, ETFs are generally considered a low-cost investment option.

3. Transparency

ETFs are generally transparent investment vehicles. The holdings of an ETF are disclosed on a regular basis, and investors can easily find information about the fund's investment strategy, objectives, and fees. Additionally, the intra-day trading and pricing of ETFs provide investors with real-time information about the value of their investment.

4. Liquidity

ETFs are highly liquid investment vehicles, which means that investors can buy and sell shares on any business day. The shares are typically redeemed at the current market price of the ETF, which can be different from the net asset value (NAV) of the fund. The liquidity of an ETF can be affected by market conditions, however, and investors should be aware that there may be times when the ETF is less liquid.

5. Professional Management

ETFs are typically passively managed. But some ETFs may be actively managed, which means that the fund manager actively selects and manages the underlying securities.

Examples of ETF:

- Invesco: Invesco offers a range of actively managed ETFs that focus on different investment strategies, including multi-factor equity strategies, fixed income, and alternative investments.

6. Investor Protections (e.g. Fiduciary responsibilities, SIPC, SEC, FINRA, etc.)

ETFs are subject to regulatory oversight by the Securities and Exchange Commission (SEC). Additionally, the fund may be a member of the Financial Industry Regulatory Authority (FINRA) and the Securities Investor Protection Corporation (SIPC), which can offer some protection to investors in the event of fraud or bankruptcy.

Instrument C

Indexed annuities are such an investment vehicle that can give an upside/profit when markets are growing and at the same time it does have a downside protection so theoretically if markets turn around and start going down, the investments in the annuity will not lose money.

1. Performance:

name:	Recent	Best	Worst
Allianz 360 Annuity	4.24%	4.58%	2.26%

[6] Source: <https://myannuitystore.com/annuity-insurance-companies/allianz-life/>

2. Fees:

For this particular investment, I mean: Allianz 360 Annuity, the fees is 1.3%.

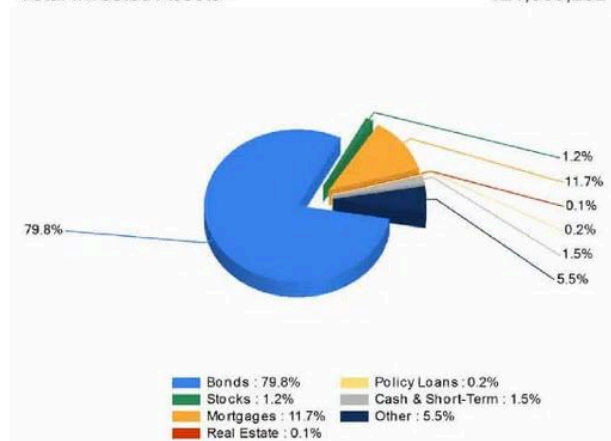
3. Transparency:

Although the separate investments are not exactly visible transparency is good, because the buyer can see how their investments are allocated by type (bonds, stocks, mortgages, real-estate, etc.) and are shown in the following very detailed pictures:

Invested Asset Distribution

Total Invested Assets

121,869,252



5 Year Investment Yields

5 Year Average

4.48%

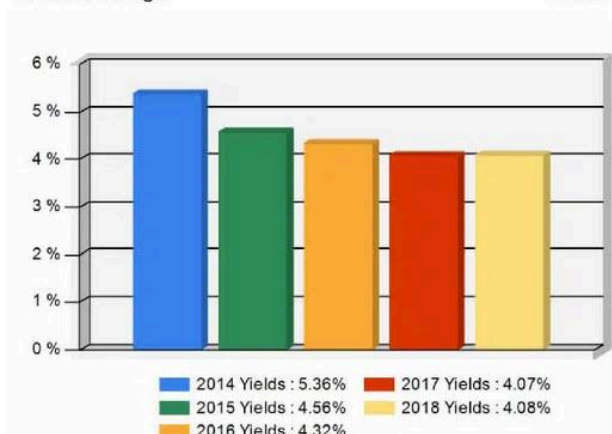


Fig. 1.

Non-Performing Assets

Bonds In or Near Default	0.0%
Problem Mortgages	0.1%
Real Estate Acquired by Foreclosure	0.0%
Total Non-Performing Assets/Surplus & AVR	0.1%
As a Percent of Invested Assets	0.0%

Income & Earnings

Total Income	18,797,647
Net Premiums Written	12,805,034
Earnings Before Dividends and Taxes	263,268
Net Operating Earnings	-510,003

Bond Quality

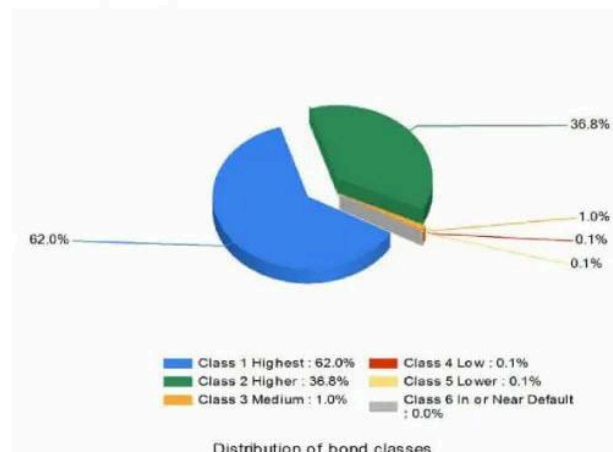


Fig. 2.

4. Liquidity

This is an illiquid market because these products are not traded on an exchange. They are offered to separate individuals, face to face in the offices of Allianz. The issues with low liquidity are overcome by the fact that when the buyer wants to close his contract, Allianz is the other side of the trade so the deal is always going to happen. The only problem is that there is a penalty for closing the deals before the first 10 years of the contract.

5. Professional Management

The professional leaders of Allianz 360 Annuity fund are Johan Grahn, Adam Brown, Eric J. Thomes and Jason Wellmann. They are taking care of the business development, actuarial product and life insurance products development and distribution.

6. Investor Protections (e.g. Fiduciary responsibilities, SIPC, SEC, FINRA, etc.)

While all indexed annuities are regulated by state insurance commissioners, only those that are securities are regulated by the SEC and FINRA.

Annuities are an agreement between issuer and the buyer and do have specific conditions that each side should agree on. They are not guaranteed by any bank and as all investments there is a possibility of a loss, also they look like a bank deposit but are not and are not insured by any federal government agency, FDIC, NCUA or NCUSIF.

Instrument A

I strongly recommend this fund as an ideal investment for those looking to diversify their portfolio and gain exposure to the broader market. This mutual fund offers investors a number of key benefits, including low fees and expenses, broad market exposure, and liquidity.

a. Collateral-related risks: Our mutual fund invests in a diversified portfolio of stocks and bonds, minimizing the risk of collateral-related issues such as financing and credit. By holding a variety of assets across multiple industries and geographies, we aim to reduce the risk of any single asset experiencing credit-related issues.

b. Statistical related risks: Our mutual fund tracks a broad market index product, which helps to minimize volatility and correlation risk. By diversifying across many different securities, we aim to reduce the impact of any one security on the overall performance of the fund. This can help to reduce the risk of large swings in the value of the fund, while still providing investors with exposure to the broader market.

c. Magnifying risk factors: We do not use leverage or derivatives in our mutual fund, minimizing the risk of magnifying risk factors such as leverage and non-linearity. We believe in a conservative approach to investing, and seek to minimize risk by investing in a diversified portfolio of stocks and bonds.

d. Frictional risk factors: We understand the importance of liquidity and regulation in a mutual fund. Our fund is designed to be highly liquid, allowing investors to buy and sell shares easily. We also adhere to all relevant regulations, ensuring that our fund operates in compliance with all applicable laws.

e. Fallout risks: We understand the importance of risk management and have put in place robust risk management practices to minimize the risk of model failure and crises. Our investment strategy is based on a thorough analysis of market trends and historical data, allowing us to make informed investment decisions.

In summary, our open-ended, low-cost mutual fund offers investors a number of key benefits, including broad market exposure, low fees and expenses, and robust risk management practices. We believe that our fund is an ideal investment for those looking to diversify their portfolio and gain exposure to the broader market, while minimizing risk.

Collateral-Related Risks. Credit Risk.

a. The credit risks associated with the mutual fund will depend on the specific holdings of the fund. If the fund invests in corporate bonds, for example, there is a risk that the issuers of those bonds may default on their payments. To mitigate this risk, the mutual fund may invest in bonds with higher credit ratings or diversify its holdings across a range of issuers and sectors.

- b.** Typically, mutual funds do not provide payment guarantees or credit guarantees for their investors. However, some funds may purchase credit default swaps or other instruments to protect against default risk.
- c.** Investors A and B may want to ask the fund manager about the credit quality and diversification of the fund's holdings, as well as any measures taken to mitigate credit risk.

Statistical-Related Risks: Correlation.

- a.** If the equities in the index have medium to high correlation, the mutual fund may be considered a relatively safe investment, as the risk of individual stock price movements may be partially offset by the overall performance of the index. However, high correlation may also mean that the fund's returns are more closely tied to the performance of the overall market, which could result in higher volatility.
- b.** Investor C may want to ask Investors A and B about their risk tolerance and investment goals during down markets. The fund manager may also be able to provide information on historical market performance during downturns and the potential impact on the fund's returns.
- c.** Investors A and B may want to ask the fund manager about the correlation between the fund's performance and the overall equity market. This information can help them understand the potential impact of market movements on their investment returns.

Magnifying Risk: Leverage & Nonlinearity.

- a.** The mutual fund does not provide downside protection or guarantees, as it is designed to track the performance of the underlying index. However, the fund may offer diversification benefits and potentially lower volatility compared to investing in individual stocks.
- b.** The mutual fund has an upside potential, as it is designed to track the performance of the underlying index, which may increase in value over time.
- c.** The participation rate of the indexed annuity may be leveraged, meaning that the investor's returns are magnified based on the performance of the underlying index. However, this also means that losses can be magnified if the index performs poorly.
- d.** Investors A and B may want to ask the fund manager about the specific methodology used to calculate the participation rate and how it is leveraged to generate returns. They may also want to understand the potential impact of market volatility on the participation rate and their investment returns.

Instrument B

This ETF offers investors a number of key benefits, including low expenses, broad market exposure, and liquidity.

a. Collateral-related risks: Our ETF invests in a diversified portfolio of stocks and bonds, minimizing the risk of collateral-related issues such as financing and credit. By holding a variety of assets across multiple industries and geographies, we aim to reduce the risk of any single asset experiencing credit-related issues.

b. Statistical related risks: Our ETF tracks a broad market index product, which helps to minimize volatility and correlation risk. By diversifying across many different securities, we aim to reduce the impact of any one security on the overall performance of the ETF. This can help to reduce the risk of large swings in the value of the ETF, while still providing investors with exposure to the broader market.

c. Magnifying risk factors: Our ETF does not use leverage or derivatives, minimizing the risk of magnifying risk factors such as leverage and non-linearity. We believe in a conservative approach to investing, and seek to minimize risk by investing in a diversified portfolio of stocks and bonds.

d. Frictional risk factors: Our ETF is highly liquid, allowing investors to buy and sell shares easily. Additionally, our ETF is subject to all relevant regulations, ensuring that it operates in compliance with all applicable laws.

e. Fallout risks: Our ETF is designed to mitigate the risk of model failure and crises by adhering to robust risk management practices. Our investment strategy is based on a thorough analysis of market trends and historical data, allowing us to make informed investment decisions.

In summary, our ETF offers investors a number of key benefits, including broad market exposure, low expenses, and robust risk management practices. We believe that our ETF is an ideal investment for those looking to diversify their portfolio and gain exposure to the broader market, while minimizing risk. As a financial advisor, I would recommend this ETF to investors who are looking for a low-cost, diversified investment option.

Collateral-Related Risks: Credit Risk

a. The credit risk of an ETF is generally lower than that of an open-ended mutual fund because the ETF holds underlying assets that can be sold on the open market to pay investors. However, there is still some credit risk associated with the ETF's counterparties, such as the custodian or issuer.

b. Some ETFs may have credit guarantees or insurance in place, but this varies by product and issuer.

c. A and B may want to ask C about the creditworthiness of the ETF's counterparties and any insurance or guarantees in place.

Statistical-Related Risks: Correlation

a. If the equities in the index have medium to high correlation, the ETF may be riskier than if the equities have low correlation. This is because if one stock in the index performs poorly, other stocks in the index may also perform poorly.

b. C may want to ask A and B about the historical performance of the index in down markets and how the ETF has performed during those periods.

c. A and B may want to ask C about the correlation between the ETF's returns and the performance of the index it tracks.

Magnifying Risk: Leverage & Nonlinearity

a. Some ETFs use derivatives or leverage to amplify returns, which can increase risk. However, not all ETFs use leverage or derivatives, and some ETFs provide downside protection through strategies like hedging.

b. ETFs can have upside potential if the underlying assets in the index perform well.

c. The leverage of an ETF depends on its structure and use of derivatives. A leveraged ETF may aim to deliver returns that are two or three times the daily performance of the index it tracks, which can magnify both gains and losses.

d. A and B may want to ask C about the use of leverage or derivatives in the ETF, and how this affects its performance and risk profile.

Instrument C

a. Collateral-related risks: financing and credit

Annuities by design are very conservative investment vehicles and that's why they are not suitable for everyone. The returns on indexed annuities, can be thought like a form of interest that is credited to the contract. Indexed annuities usually have a clause that gives a guaranteed minimum interest rate and an

interest rate linked to a market index. For example if the linked index realizes 10% gain, the annuity contract will receive only 7% gain.

There is no collateral, and you can withdraw your money at every given point of time but there is a catch: a penalty fee is agreed upon on signing the contract that if you withdraw before the first 10 years you will receive less than your initial deposit. This is to discourage early withdrawals and to compensate the insurance company's loss.

Indexed annuities are not supposed to be bought on credit or with loans so financing is not available or at least is not recommended to be used when investing in annuities. They are supposed to resemble a credit deposit but with bigger potential gain by following an index, so it could be said that it is suitable to "invest and forget".

b. Statistical related risks: volatility and correlation

Correlation is something normal for indexed annuities because they are linked to an index like SP500 for example. So they will follow and give almost the same returns like the index does, minus the operational costs and issuer's fees and one even better advantage is that in case of negative returns in the index, the indexed annuities should remain flat and do not realize any loss. We could say that indexed annuities are positively correlated with the index that they are following as long as there are positive returns. When things change and do go around as if the indexed annuity stops following the index and the correlation drops to around zero. This relates to the volatility as well. Being linked to an index means the annuity will follow also the index volatility (only to the up side)

c. Magnifying risk factors: leverage and non-linearity

The indexed annuities do not use leverage and they use 1:1 margin. The non-linearity is achieved by investing in derivatives like options. The issuer of the annuity can buy options to hedge the market risk and protect investor's capital.

d. Frictional risk factors: liquidity and regulation

The indexed annuities are not very liquid by themselves because they are not traded on exchanges. There is always a counterparty that is willing to buy back the annuity, and this is the issuer itself. As mentioned above this comes with penalty fees so it is not suitable for getting in and out of the trade. As I said they are not created for traders and trading. They are more suitable for investors that are using the buy and forget strategy.

e. Fallout risks: model failure and crises

The model failure can be hidden in the moral hazard of the brokers that are offering and selling indexed annuities to people that don't need them, just to gain some more fees and collect additional taxes. These kinds of investment should be offered by brokers that are CFA licensed and regulated and are taking care of their customers' needs. Otherwise the model could be corrupted by greed.

7.a.) The credit risk for Allianz products is almost nonexistent because Allianz can be categorized as “too big to fail”, because a lot of pensions funds are located there and with their indexed annuity funds, they actually are the backbone of the insurance and pension industry, so if they default this would mean that there will be no pensions and no insurance for a lot of people. The impact will be so big, severe, and harmful that it would cause riots, chaos, civil unrest and much more which may lead to the end of the country. In this case USA will print as much money as they need to bail out Allianz or anybody in the same boat, so that they could evade total civil unrest and the fall of the government. Furthermore, in the contract of the product it is said: “Your policy can earn interest based on positive growth of an external index, or by receiving fixed interest – and you're protected from loss if the market drops” [1], so this eliminates the credit risk by design.

It is enough to say what are the advantages and disadvantages of indexed annuity, so that you will see that the benefits are more than the negative and thus you can make the right decision to buy an indexed annuity.

Advantages:

- Protection from loss
- Minimum return guarantee
- A higher potential return than CDs
- Better budgeting
- Defer tax payments.
- Lifetime income option

Disadvantages:

- Complex

- Unpredictable
- Illiquid
- No dividends
- Penalties on early withdrawal

b.) This product does not distribute dividends. Allianz as a company is regulated by SEC, FINRA and state insurance commissioners [2] and its products (annuities) are like zero coupon bonds and options which starts paying after maturity (after the end of the contract) and then the owner of the annuity can receive a lump sum or regular payments (depending on the product specifications and options).

Allianz Life Insurance Company is rated A+ by A.M, A1 by Moody's (21 ranking), Best and boasts a Comdex Score of 94; placing them in the 94th percentile of all rated life insurance companies.

c.) I am interested: where do they put so much money and how do they guarantee that there will be no loss in time of recessions when all the markets are falling?

The money is invested in low risk instruments like bonds, mortgages, real estate and options. Actually this is exactly how we guarantee there will be no loss in eventual down turn markets, by hedging with options.

8. a.) If we are talking about annuities, they are compelled by the law to follow only conservative investments and to hedge out the risk as much as possible. So even if the equities in the index are highly correlated, Allianz products are very safe by design.

b.) How would a severe drop in the market affect the liquidity of your products?

Since both instruments A and B are following the index, their performance will also drop accordingly. The more interesting thing is if a big amount of withdrawal happens. This can lead to further selling from the side of instrument A or B and this could prolong the down movement and turn into a selling spree and a downturn spiral.

c.)How is derived or defined the participation rate based on the equity market performance?

This rate is defined by the issuer and represents the cost of doing business needed for the issuer to be profitable (in the costs they also put in additional percent reserved for their own profit). So if they have

calculated that they will reserve 30% of the index profits for themselves, this means that if the index gains 10% the owner of the annuity will receive only 7%.

9. a.) “Indexed annuities are designed to protect your savings against losses, making them a relatively safe investment. They’re not tied to the fluctuations of the market and are typically structured so you don’t lose money when the market declines.” [4]

b.) The investment in fixed index annuities earns interest based on any positive changes to an external index (the one that it is indexed to, like S&P 500 for example) for a given period. When the index goes up, a predefined percent of the upside is given to your investment.

“They generate a percentage of the profit when the index they’re tied to increases. The issuing company of your indexed annuity may ensure a minimum return, even in the event that the underlying index loses money. As an example, it might pay 2 percent even if the underlying index has a negative return.” [4]

c.) “Indexed annuities often have pricing levers, such as participation rates, that insurance companies use to determine the interest they will credit to the contract. Participation rates are multiplied by the percent change in the index. For example, an indexed annuity with an 80% participation rate would credit 8% to the annuity if the index returned 10% for the contract term.” [5]

10.a.

i.) Large capital flows in and out of the mutual fund can create issues related to liquidity and transaction costs. When investors pour a large amount of money into a mutual fund, the fund may need to purchase additional securities to match the fund’s investment strategy. Conversely, when investors redeem large amounts of money from the fund, the fund may need to sell securities to meet the redemption requests. This can create issues related to liquidity, especially if the fund holds securities that are not easy to sell or trade. Additionally, large capital flows can increase transaction costs, which can eat into the fund’s returns.

ii.) The lack of intraday trading for the mutual fund means that investors are only able to buy or sell shares in the fund at the end of the trading day. This can be problematic for investors who need to make a quick trade or who want to take advantage of intraday market movements. If an investor wants to buy or sell shares in the mutual fund during the trading day, they will need to place a limit order and wait for the trade to execute at the end of the day.

iii.) The limited transparency of holdings of the mutual fund means that investors may not know exactly what securities the fund is holding at any given time. This can make it difficult for investors to assess the risk of the fund and make informed investment decisions. Additionally, the limited transparency can make it difficult for investors to know if the fund is adhering to its stated investment strategy. This can create issues related to trust and confidence in the fund.

10. b.

i.) “The stocks that are held within such funds experience substantially higher intraday and daily volatility than stocks without substantial ETF holdings. The authors suggest that the arbitrage between ETFs and their underlying securities adds a whole new layer of trading to stocks that are held within ETFs, and fosters the propagation of trading shocks that occur in the ETF market. As a result, the non-fundamental volatility of the underlying securities increases.” (Itzhak Ben-David, Francesco Franzoni, and Rabih Moussawi, Do ETFs Increase Stock Volatility? , NBER Working Paper No. 20071) [8]

Based on the research, a conclusion could be made that ETF do raise the volatility of the financial markets and even more could be said: that one standard deviation of around 16% increase in the daily volatility is due to ETFs. With one sentence it could be said like this: ETFs are affecting financial markets volatility. [7]

ii.) “As part of its normal operations, an ETF company incurs expenses ranging from manager salaries to custodial services and marketing costs, which are subtracted from the NAV. The net return the investor receives from the ETF is based on the total return the fund actually earned minus the stated expense ratio.” [9]

The fees could be grouped like this:

- Expense Ratio – all the costs that are used for the fund to exist. They usually range between from 0.1% to 0.7% per annum.
- Entry/Exit load – ETFs are traded like stocks so they do not have such fees, although they do have bid-ask spread which could be called: Entry/Exit load, but it is not the same [10]
- Brokerage, STT and other Charges - The average brokerage charge on purchasing ETFs is 0.01% of the turnover value. Since ETFs also trade like stocks and are listed on the exchange, ETFs attract such charges like: STT which stands for Securities Transactions Tax and stands at 0.01% of your turnover value.

iii.) Exchange-traded funds (ETFs) do pay dividends because by design they buy stock and thus are owners of equity and since owning a stock could give you dividend so ETFs as a holder of stocks can receive dividends.

It depends on the ETF itself but most of them pay the dividends that they have collected to their investors quarterly or even monthly payments are possible.

“The dividends are typically paid either in cash or in additional shares of the ETF.” [11]

Two kinds of dividend could be categorized, which has different tax consequences [12]

- Qualified dividends – these dividends are reported to the IRS and taxed as long-term capital gains and depend on the investor's modified adjusted gross income (MAGI) and taxable income rate. Qualified dividends are paid on stock held by the ETF, which must own them for more than 60 days before the ex-dividend date.
- Non-qualified dividends are taxed at the investor's ordinary income tax rate. Non-qualified dividends are not designated by the ETF as qualified because they may have been payable on stocks held by the ETF for 60 days or less. The total amount of non-qualified dividends held by an ETF is equal to the total dividend amount minus the total amount of dividends treated as qualified dividends.

10. c.

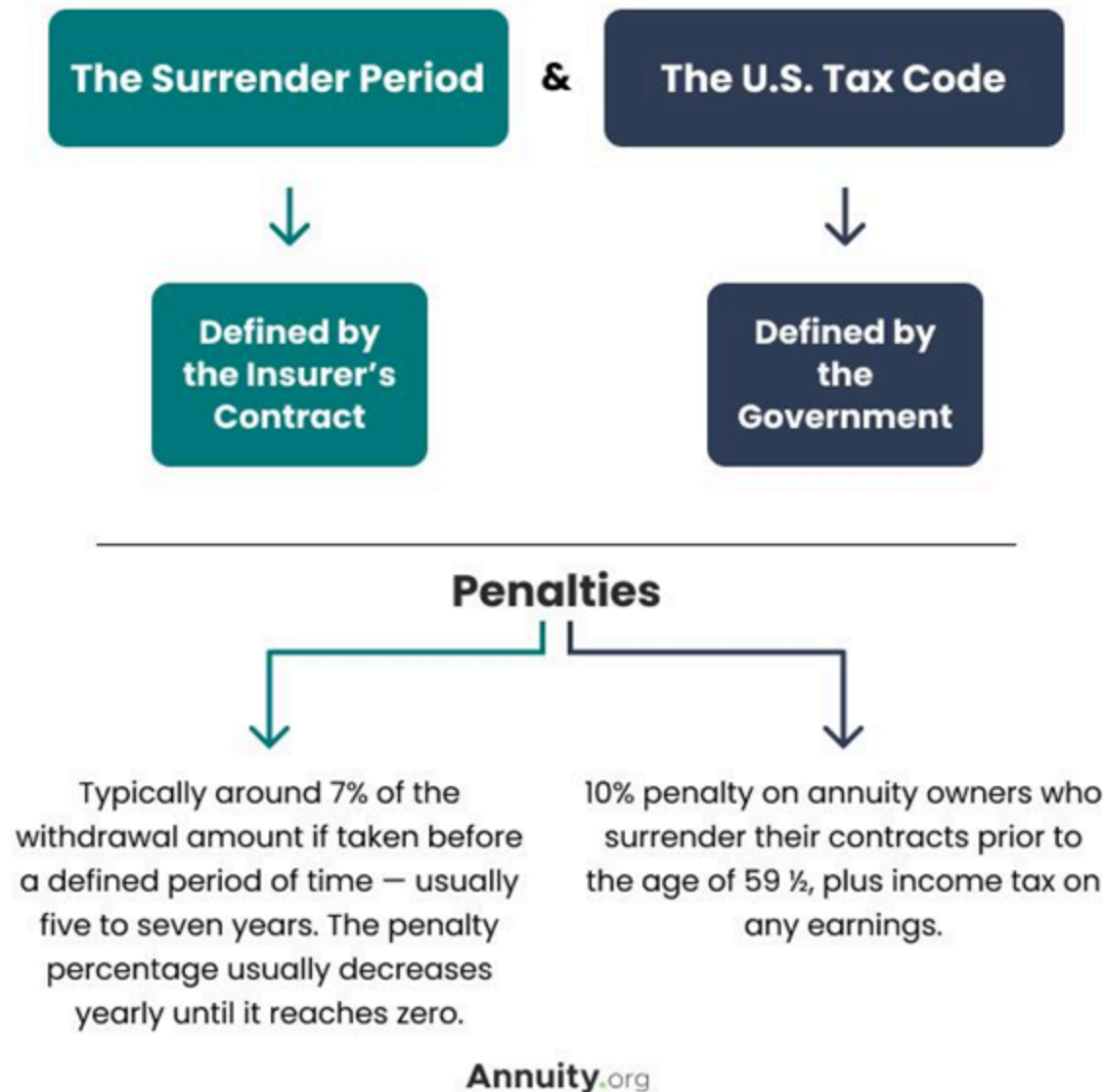
i.) Annuities do have penalty fees for early withdrawals, that could be also called surrender fee or surrender charge. Their purpose is to discourage taking your money out before the maturity date.

The goal of these penalty fees is, as I said, to discourage early withdrawals and to compensate the insurance company's loss if you choose to close your contract with them.

This fee usually start decreasing after 4th year and by the end of the 10th year when the surrender period has expired, then afterwards there is no penalty for withdrawing. [14]

Annuity Early Withdrawal Considerations

Surrender charges and tax penalties exist to discourage the short-term use of annuities and to minimize risk to the issuer.



“The surrender charge and surrender charge period apply to the accumulation value, which does not include the premium bonus or the interest bonus. These surrender charges may vary by state.” [13]

ii.) The participation rate is something that is out of the buyer's control, and it is given by the issuer.

Indexed annuities' returns obviously depend on the index that they are following but by design the return is not exactly the same as the return of the index itself. This is due to the management fees and costs that the indexed annuity is reserving for itself, which must be subtracted from the overall index return. [16]

Usually fixed indexed annuities fees are renewed every year and they do change from year-to-year. At a predefined date the buyer of the annuity receives a letter that is informing him/her about the rate/fees change. Especially in the uncertain near-term future a decrease of their rates is very probable. [15]

iii.) Almost every indexed annuity has an inhouse methodology of determining how to change fees, costs and interest calculations and it could happen every year. This leads to a not transparent approach of changing costs. This makes it very difficult comparing annuities to one another and makes difficult approximations and evaluations of the future returns. [16]

Being able to change fees every year and having their own methodologies of calculating the fees makes indexed annuities a less transparent investment vehicle.

11. A.) The mutual fund scandals involved a number of unethical and illegal practices by mutual fund companies, including market timing, late trading, and other forms of insider trading. These practices allowed certain investors to profit at the expense of other investors, and damaged the reputation of the mutual fund industry as a whole. The scandal resulted in significant financial losses for investors and led to increased regulatory scrutiny of the industry.

In response to the mutual fund scandals, regulators in the United States introduced a number of new regulations designed to increase transparency and protect investors. These regulations included increased disclosure requirements, more stringent oversight of mutual fund companies, and stronger enforcement mechanisms.

To prevent similar scandals from occurring in Japan, regulators could consider implementing similar regulations to those introduced in the United States. This could include requiring mutual fund companies to provide more detailed disclosures about their investment strategies and holdings, and imposing stricter oversight of the industry. Additionally, regulators could consider increasing the penalties for illegal or unethical behavior in the mutual fund industry, in order to deter bad actors and promote a culture of compliance and accountability.

Overall, the mutual fund scandals in the United States highlighted the importance of strong regulations and oversight in the mutual fund industry, in order to protect investors and maintain the integrity of the

market. By implementing similar regulations in Japan, regulators can help to prevent similar scandals from occurring and ensure that the mutual fund industry operates in a fair and transparent manner.

11. B) Indeed, there is some discrepancy between physical and synthetic ETFs, and it is based on the way these two types of ETFs are replicating the index that they are following.

The synthetic one uses a derivative or swap as the choice for replications method, while the physical ETF actually buys and owns the securities that are in the index in order to follow it. For some cases a physical ETF is the better choice, for others the synthetic ETF.

The main discrepancies are mainly from the way the trades are executed. The physical ETF should buy or sell the securities and this brings some liquidity risk with it. Also, some additional trading taxes and costs may follow along. While the synthetic ETF just swaps the instruments that it is following and thus things happen in a much easier and faster way. The disadvantage is the swaps are OTC instruments and they bring with them a counterparty credit risk, so although that usually synthetic ETFs have a lower tracking error, they do bring along a higher credit risk.



Source: Vanguard calculations using data from Bloomberg. Data cover the period 30 September 2017 through 30 September 2020.

11. C.) In order to decide whether indexed annuities may or may not be suitable for anyone, there should be provided a lot of information on what they are like and how they are structured. Also detailed information should be shared and explained on how they create revenue, what are their limitations like penalties, fees and costs.

Furthermore, not every broker should be allowed to offer such kinds of investment instruments like indexed annuities. Only licensed brokers and ones that have CFA should be allowed to present and offer such types of investments. Having a CFA representative in the broker structure will ensure that the broker will follow the customer's interests and needs and not only be selling insurances for collecting fees for their own profit.

The crisis that is most likely to occur by offering/selling indexed annuities can be categorized as "moral-hazard", because all in all it is about human's greed and desire for earning more and more money. What do I mean by saying this? The annuities are specially designed for one purpose only: to be used for a second pension and they have to be conservative in the way they do invest so as to not have a big exposure to risky investment instruments.

There is one more thing when I mentioned "greed". Since indexed annuities are investment vehicles that are being offered and sold to people and by doing so they do generate income from taxes, fees etc. Not fair brokers may want to sell as much of them as possible in order to gain these fees that I am talking about and thus maximize their profits. This is why a regulation of some kind should be created that all licensed brokers should follow.

This is why in early 2000 NAIC created a white paper that was intended to be used as a standard for suitability for life insurance and annuities. This regulation model resembles the FINRA standards.

It represents that the broker should collect a lot of information for the potential customer like: age; annual income; financial resources used for the buying of annuity; financial objectives, experience, time horizon and needs for purchasing; previous insurances and holdings; liquidity net worth and needs; risk tolerance and tax status. After collecting all this information, the broker should analyze it and come up with a proposition that is based entirely towards the benefits of the customer's well being and progress.

There is another problem that not all the states have adopted the Model Regulation. It was assumed that by the summer of 2013 all the states should have applied this model. This has not happened, because only about 70% of the states have done so and it is unknown whether SEC will seek responsibility from the ones that haven't done so yet.

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