GROUP WORK PROJECT # 2
GROUP NUMBER: 5083

MScFE 560: FINANCIAL MARKETS

FULL LEGAL NAME	LOCATION (COUNTRY)	EMAIL ADDRESS	MARK X FOR ANY NON-CONTRIBUTING MEMBER
Chen Xiaoyang	Singapore	xanven@outlook.com	
Rashidat Damilola Sikiru	Nigeria	rasheedatsikiru@gmail.com	
Regulavalasa Krishna Vamsi	India	krishnavamsi8262@gmail.com	

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).	
Team member 1	**Chen Xiaoyang**
Team member 2	**Rashidat Damilola Sikiru**
Team member 3	**Regulavalasa Krishna Vamsi**

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.
N / A

A. 1 Group 1000-word review of Questions 1 - 6 (Step 1)

Our chosen broad market index will be the Standard and Poor's 500 (S&P 500).

a. **An open-ended, low-cost mutual fund that tracks a broad market index**

Open-ended low-cost mutual funds allow for constant buying and selling, with no maturity period, allowing investors to keep investing for as long as they like. Vanguard, a mutual fund with a total asset management of $792.6 billion, has a performance of 10.32% over the last three years, 10.97% over the last five, and 11.14% over the last ten years (Vanguard). The Vanguard 500 Index Fund Admiral Shares mimics the performance of the Standard & Poor's 500 Index, aiming to gauge large-cap stocks' return on investment. (Matthew)

1. **Performance:** The Vanguard 500 Index Fund (VFIAX) has returned to 10.10% over the last year, with a 26.29% return over 12 months. (Vanguard)
2. **Fees:** The fund has an expense ratio of 0.14 percent and a minimum initial investment of $3,000. (US News)
3. **Transparency:** Vanguard ensures transparency by providing thorough documentation on VOO's holdings, performance, and transactions through online platforms and quarterly reports..
4. **Liquidity:** Vanguard funds are highly liquid, managing numerous funds with diverse investment objectives, offering managed funds and index funds, tracking specific indexes like the S&P 500.
5. **Professional Management:** The company's distinctive ownership structure, where fund investors own the majority of the business, guarantees individualized financial counseling, superior investments, retirement resources, and timely market intelligence.
6. **Investor Protections:** All securities, including mutual funds, are protected by Vanguard up to SIPC restrictions. Tax ramifications are nonexistent for a smooth switch to the new account structure.

b. **An Exchange-traded Fund that tracks the same broad market index.**

The SPDR S&P 500 ETF, typically referred to by its ticker SPY, is a widely used fund providing investors with extensive access to the U.S. stock market (Nickolas).

1) **Performance:** SPY seeks to mimic the gains of the S&P 500 Index, a standard measure of the U.S. equity market. It has produced around a 10% yearly return on average since starting (Nickolas).
2) **Fees:** SPY is recognized for its cost efficiency. With an expense ratio of 0.0945%, it means you would pay $9.45 annually per $10,000 invested (State Street Corporation).
3) **Transparency:** SPY offers high transparency, reporting its assets under management to investors on a daily basis (Zacks Equity Research). SPY's transparency around its holdings assists in safeguarding the fund's integrity and enables investors to make knowledgeable choices (Morningstar, Inc).
4) **Liquidity:** SPY maintains exceptional liquidity, trading on the NYSE Arca exchange and available for both purchase and sale throughout market hours. This high level of tradability makes it a favored pick among investors with an average daily trading volume of around $33.5 billion (State Street Corporation).

5) **Professional Management**: SPY is operated by the reputable firm State Street Global Advisors. Its assets are chosen based on aspects like size, tradability, and sector to create a varied blend (State Street Corporation).
6) **Investor Protections** (e.g. Fiduciary responsibilities, SIPC, SEC, FINRA, etc.): SPY falls under the supervision of regulators like the SEC and FINRA. It also holds membership in the SIPC, which gives investors restricted coverage if the broker goes bankrupt (State Street Corporation).

c. An indexed annuity, which uses zero coupon bonds and options; the underlying of the options are the same broad market index.

Indexed annuities, such as the Allianz 222 Annuity offered by Allianz Life Insurance Company, blend investment and insurance by guaranteeing returns and allowing market growth participation. Using zero coupon bonds for guaranteed returns and options based on the S&P 500 index for potential higher gains, this product aims to protect the principal while capturing market upswings. The Allianz 222 Annuity's performance is closely tied to the S&P 500, offering a strategic balance between security and growth potential in a fluctuating financial environment (Allianz).

Performance: The Allianz 222 Annuity targets growth by tracking the S&P 500, offering a guaranteed 0% floor to safeguard the principal, with annual returns potentially ranging from 3% to 6%.
Fees: It incorporates administrative and strategy-related fees, designed to be competitive while influencing the annuity's performance.
Transparency: Allianz provides clear details on interest crediting, zero coupon bonds, and options strategy, ensuring investors are well-informed through prospectuses and marketing materials.
Liquidity: Offers limited penalty-free withdrawals, allowing for up to 10% of a $100,000 contract's value to be withdrawn annually without surrender charges.
Professional Management: Managed by Allianz Life, the Allianz 222 Annuity utilizes a strategic approach with zero coupon bonds and options to balance principal protection and growth.
Investor Protections: Overseen by state insurance commissions, the Allianz 222 Annuity includes safeguards like minimum interest rates and return of premium guarantees, despite not being SEC-regulated or SIPC-covered.

B. Individual answers to Questions 7-9

7. Collateral-Related Risks. Credit Risk. For your product:

a. Explain the credit risks, if any, of your product.

Mutual Funds have high credit risk, a risk involving the potential default of security issuers, It may laed to investors losing their capital. To mitigate the effect, a diversified portfolio is necessary for investors to reduce investment risk. They must avoid having a very focused portfolio.

Indexed annuities have minimal credit risk since they are supported by regulated insurance firms with solid reserves. However, some risk exists if the insurer becomes unstable.

b. What institutions, if any, insure the payment of dividends/credit guarantees?

Insurers, as regulated entities, guarantee annuity dividends and credit payouts.

c. What questions will A and B want to ask C about the credit guarantees for the annuity?

Student A and B may ask about the insurer's finances, credit strength, and reinsurance arrangements that reduce risk.

8. Statistical Related Risks: Correlation.

a. Suppose the equities in the index have medium to high correlation.
Is your product a relatively safe investment? Why or why not?

Yes, because when equities within the index exhibit a medium to high correlation., it suggests that the performance of the investment will closely mirror the overall market trends. This alignment decreases the volatility often associated with the movements of individual stocks.

b. What questions does C want to ask A and B about down markets?

C might ask A and B,

"How do your products perform or protect against losses during market downturns?"

"How do your products mitigate risks in down markets?"

c. What questions do A and B want to ask C about the correlation between the participation rate and the equity market performance?

Student A and B may inquire how participation rate changes correlate with equity movements and mechanisms to adjust the rate accordingly.

9. Magnifying Risk: Leverage & Nonlinearity

a. Explain how the indexed annuity has no downside (e.g. downside protection).

Annuities provide downside protection through minimum return guarantees, even if markets perform poorly. This prevents losses from downturns.

b. Explain how the indexed annuity has an upside.

Annuities also offer upside potential through participation in index gains, up to a specified cap or rate.

c. Explain the leverage of the participation rate.

The participation rate leverage amplifies potential gains but limits full upside.

d. Hint: From the previous question, review the correlation between the participation
and equity market performance

The correlation between the participation rate and equity market performance suggests that as the market improves, annuity holders benefit proportionally up to their participation rate, linking gains directly to market success.

C. 1 Group report for step 3

Write a group report that synthesizes perspectives for each question based on their respective roles.

Our analysis identified potential issues to consider across mutual funds, ETFs, and indexed annuities.

Mutual funds can experience performance and execution problems from large inflows or outflows disrupting trading. Their lack of intraday trading and transparency on holdings also limit investors' abilities to assess risks and make informed decisions.

For ETFs, volatility can create tracking errors and unexpected losses. Fees accumulate over time to erode returns despite lower expense ratios than mutual funds. Complexities from dividend timing and tax considerations may also cause gaps between expected and actual returns.

Indexed annuities deter early withdrawals through penalties that diminish principal. Insurer control over participation rates restricts upside potential. Limited fee transparency makes it difficult for investors to fully grasp costs that reduce overall value.

In summary, each product faces challenges around trading execution, transparency, volatility exposure, fee structures, and withdrawal restrictions. Carefully evaluating these factors allows investors to make decisions aligned with their goals, time horizons, and risk tolerance when selecting among mutual funds, ETFs, and indexed annuities.

D. 10.Frictional Factors: Liquidity and Regulation

a. For the mutual fund, explain the issues of:

i. large capital flows in and out of the fund

Significant cash inflows/outflows may disturb trading activities, elevate expenses, and negatively impact performance, as managers might be compelled to swiftly acquire or dispose of securities to accommodate redemption requests.

ii. the lack of intraday trading for the fund.

No intraday trading means investors can't buy or sell at real-time market prices, leading to potential execution issues, especially amid volatility.

iii. The limited transparency of holdings of the fund

Limited transparency on holdings makes it hard for investors to fully assess risks, performance, and make informed decisions.

b. For the exchange-traded fund, explain the issues of:

i. Market volatility affecting performance

Market volatility can significantly impact ETFs, causing tracking errors from price deviations between ETF and underlying assets, potentially resulting in unexpected losses.

ii. Fees associated with management and exchanges

Management, trading, and exchange fees erode returns over time, accumulating through expenses despite generally lower expense ratios versus mutual funds.

iii. Dividends impacting the fund

Dividend payouts can create complications for dividend-paying ETFs. If the timing and frequency of distributions don't match investor needs or tax situations, there could be gaps between anticipated and actual returns.

c. For the indexed annuity, explain the issues of:

i. Penalties for early withdrawal

Early withdrawal penalties deter investors from accessing funds before surrender period ends, potentially diminishing principal and benefits through surrender charges.

ii. The lack of control of the participation rate

Lack of control over participation rate limits the ability to adjust market exposure, as insurer-set rates may not fully capture upside potential, restricting returns.

iii. The limited transparency of fees

Limited fee transparency makes it difficult for investors to fully grasp costs like administrative and surrender charges that may reduce overall value.

11.Regulation

a. In 2003, there was a mutual fund crisis. Read about that here:
https://link.springer.com/article/10.1007/s11417-010-9090-7

The mutual fund scandal of 2003 brought to light unethical and illegal practices, exposing deficiencies in industry supervision. Some hedge funds and mutual fund companies were discovered to be involved in activities such as late trading and market timing, exploiting regulatory loopholes for unfair financial gain.

Late trading involves placing orders after a fund's 4pm closing price while still receiving that day's price. This guarantees profits for insiders but harms regular shareholders. Market timing aims to exploit stale fund prices by making short-term bets around price discrepancies.

These abuses were revealed when New York's Attorney General Eliot Spitzer filed charges against New Jersey hedge fund Canary Capital for colluding with Bank of America's Nations Funds to late trade. Canary settled for $40 million without admitting guilt.

The scandal highlighted shortcomings in existing regulations. Rules state most trades received after 4pm must execute at the next day's closing price. However, some orders placed earlier don't process until after 4pm, enabling exploitation of this loophole.

In summary, the 2003 event exposed unethical practices that regulators had overlooked, demonstrating the need for stricter rules and enforcement. Hedge funds and mutual funds were misusing ambiguities around order timing and stale pricing to profit at the expense of regular investors. By cracking down on late trading and market timing, regulators sought to close gaps that allowed these abuses. The scandal was a wake-up call for greater oversight to uphold fairness and order in mutual fund markets.

b.There is some discrepancy between physical and synthetic ETFs.
(A sample article is https://www.bloomberg.com/professional/blog/stigma-surrounding-synthetic -etfs-should-put-to-rest-for-good/)

ETFs have gained popularity for their efficient, diversified access to markets. A key distinction exists between physical and synthetic ETF structures.

Physical ETFs directly hold the assets underlying a benchmark index, providing straightforward exposure. Synthetics utilize financial derivatives like swaps to mimic index performance without owning the securities. This opens up hard-to-access markets.

However, synthetics introduce counterparty risk - if a counterparty defaults on a derivative contract, the ETF suffers losses. Regulations like UCITS in Europe limit this risk by capping counterparty exposure at 20% of assets.

Despite the risks, synthetics can offer advantages over physical ETFs. For example, swaps used by synthetics in the US avoid dividend withholding taxes, enhancing returns. Synthetics also provide cost-efficient access to emerging markets, where acquiring physical assets is expensive.

In summary, physical ETFs deliver transparent, direct asset ownership. But synthetics provide flexibility to participate in niche markets where accessing or holding securities is difficult. Investors should weigh these tradeoffs carefully. While synthetics carry counterparty risks, regulations constrain the downside. And their return and cost benefits highlight why synthetics remain popular in certain regions and asset classes. Evaluating one's risk tolerance and goals is key to making informed decisions when selecting physical versus synthetic ETF products.

c. Indexed annuities are not suitable for everyone. Please read:
https://scholarship.law.stjohns.edu/cgi/viewcontent.cgi?article=1273&context=faculty_publications for issues pertaining to suitability.

Indexed annuities blend elements of fixed and variable annuities to offer growth potential tied to a market index while protecting the initial principal amount invested. However, their complexity and risks make them unsuitable for some investors.

These products carry more risk versus fixed annuities but less than variable versions, providing fluctuating returns that may outperform or underperform fixed annuity guarantees. They also expose investors to potential market losses.

Regulations help manage the risks of indexed annuities. All are overseen by state insurance regulators, while those registered as securities face additional SEC and FINRA oversight. The National Association of Insurance Commissioners (NAIC) developed suitability regulations so annuities align with consumer needs and objectives.

In summary, indexed annuities allow participation in stock market gains but with downside protection lacking in traditional variable annuities. Their blend of fixed and equity exposure can benefit certain investors. However, their complexity means they are not appropriate for everyone. Rules require sellers to ensure indexed annuities match individual risk profiles and goals. Oversight balances the benefits of their hybrid design against the need to mitigate their risks and suitability concerns.

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