GROUP WORK PROJECT # **2** MScFE 560: FINANCIAL MARKETS
GROUP NUMBER: **5797**

FULL LEGAL NAME	LOCATION (COUNTRY)	EMAIL ADDRESS	MARK X FOR ANY NON-CONTRIBUTING MEMBER
Claude Belemu Hang	Zambia	cmbhang@gmail.com	
Peter Esekhaigbe	Nigeria	Petersonese304@gmail.com	
			X

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 noncontributing members identified with an "X" above).

Team member 1	**Claude Hang**
Team member 2	Peter Esekhaigbe
Team member 3	

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.

We tried reaching our group member both by email and also through the WQU group chat but received no response.

Executive Summary

This document showcases the combined effort of group 5797 for the 560: Financial Markets class, delving into the exploration of various financial products, their risks and unique characteristics.

The document is divided into four tasks: A, B, C and D. Each task requires the group to conduct reviews, analyses and comparisons of products such as mutual funds, ETFs and indexed annuities.

Task A involves a review spanning around 1000 words. It addresses six questions related to the features, benefits, considerations and performance of three financial instruments; an open-ended mutual fund with low costs that tracks a broad market index; an ETF tracking a broad market index; and an indexed annuity utilizing zero coupon options linked to a broad market index.

Task B consists of responses to three questions for each of the mentioned products. The focus is on collateral related risks, statistical risks and magnifying risks. These responses are based on the group's research and understanding of the products.

Task C concludes with a group report summarizing the findings and recommendations from Task B.The report covers risk factors such, as credit risk, correlation, leverage, nonlinearity, liquidity, regulation, model failure and crises.

Task D involves responding to two questions by referencing two papers. The first question investigates the mutual fund scandal examining its causes, outcomes and possible risks for Japan. The second question focuses on ETFs assessing their pros and cons, performance standards and regional popularity.

TASK A

1000-word review of Questions 1 - 6

A. Open-Ended, Low-Cost Mutual Fund Tracking a Broad Market Index

An open-ended mutual fund is a type of investment where investors can buy or sell shares whenever they want. When the fund follows a market index, like the S&P 500 or NASDAQ its aim is to mimic the performance of that index.

Key Benefits:

Diversification: By spreading investments across securities these funds reduce the risk associated with companies performing poorly.
Cost Efficiency: These funds typically have fees compared to managed funds because they passively replicate an index.
Potential for Long Term Growth: Historically the stock market has shown growth over time. These funds seek to capture this growth by following a market index.
Accessibility and Flexibility: Investors can easily. Exit these funds making them suitable for both experienced investors.

Things to Consider:

Performance: The funds performance should closely align with the index it tracks after accounting for fees and expenses.
Fees: Although generally low fees can impact returns over time. It's important to compare expense ratios among funds.
Transparency: Regularly disclosing fund holdings gives investors insight, into their investments.

Liquidity considerations:
Investors have the option to purchase or sell shares daily at the funds asset value (NAV). Skilled professionals manage the fund to ensure it accurately reflects the composition of the index. Investor protections, including oversight and safeguards, like SIPC insurance are in place to safeguard investor interests.

B. Exchange Traded Fund (ETF) Tracking a Broad Market Index

An Exchange Traded Fund (ETF) is a collection of assets traded on a stock exchange, similar to stocks. When an ETF tracks a market index its goal is to replicate the indexs performance by holding a mix of assets.

Key Features and Advantages:

Real Time Trading: Unlike funds ETFs can be traded throughout the day at market prices offering investors flexibility.
Tax Efficiency: ETFs often offer tax advantages over funds due to their in kind creation and redemption process, which helps minimize capital gains distributions.
Cost Effectiveness: ETFs typically have expense ratios than funds and no minimum investment requirements making them accessible, to a wide range of investors. Diversification: Like funds ETFs provide diversification across assets within the tracked index.

Key Points to Note:

1. Performance: ETFs aim to mirror the indexs performance offering investors transparency regarding their

investments.
2. Costs: Although ETFs usually have expense ratios investors might face brokerage fees when purchasing or selling shares.
3. Transparency: ETFs reveal their holdings daily enabling investors to know the assets held in the fund.
4. Liquidity: ETFs are highly liquid allowing trading, during market hours.
5. Professional Management: ETFs follow a management strategy by tracking indexes than actively choosing individual stocks.
6. Investor Safeguards: ETFs are regulated investment products supervised by the SEC providing investors with a level of protection.

C. Indexed Annuity using Zero Coupon Options (Linked to a Broad Market Index)

An indexed annuity is an agreement with an insurance company that offers returns based on a stock market indexs performance. It combines safeguarding the amount with growth linked to market performance.

Advantages:

1. Principal Protection: Indexed annuities typically ensure the return of the investment appealing to cautious investors.
2. Market Participation: Although returns may be limited investors can still benefit from positive index performance up, to a threshold limit.

Retirement Planning: These annuities are designed to offer income streams, for retirement serving as a tool for planning your career years.
Key Points to Consider:

Performance: The returns depend on the index performance. Theres usually a limit on gains.
Fees: Indexed annuities may come with fees compared to investment choices, which could impact overall returns.
Complexity: It's crucial to grasp how returns are calculated as these products can have structures.
Liquidity: Indexed annuities are generally less flexible, than investments. Withdrawing early may result in significant penalties.

Active Management: Even though the returns are connected to an index the insurance company actively oversees the annuity product.
Investor Protections: State insurance departments regulate annuities. The guarantees are supported by the stability of the issuing insurance company.

.

TASK B

Individual answers to
Questions 7-9

Product 1: Mutual Fund

Mutual Fund: Vanguard Total Stock Market Index Admiral Shares (VTSAX)

1.) Collateral-Related Risks: Credit Risk

a. VTSAX is an index fund that tracks the entire U.S. equity market, including small-, mid-, and large-cap growth and value stocks. As such, it does not have direct credit risks like individual bonds or credit instruments would. However, the fund could be indirectly affected by credit events in the market that impact the stock prices of companies within the index.

b. VTSAX does not have institutions that insure payment of dividends or credit guarantees because it is an equity investment, not a debt instrument. Dividends are paid based on the earnings and dividend payments of the underlying companies in the index.

c. State insurance guaranty associations do not typically provide coverage for mutual funds like VTSAX. These associations generally cover insurance products such as life insurance and annuities.

d. The financial health ratings of insurance companies are not applicable to VTSAX, as it is a mutual fund and not an insurance product. However, VTSAX is managed by Vanguard, one of the largest and most reputable investment management companies.

2.) Statistical-Related Risks: Correlation

a. If the equities in the index have medium to high correlation, it means that the stocks tend to move in the same direction. This can reduce the benefits of diversification within the index during market volatility.

b. VTSAX is considered a relatively safe investment for long-term investors due to its broad diversification across the entire U.S. stock market. However, “safe” is relative and all investments carry some level of risk. The fund’s performance is subject to market risks and will fluctuate with market conditions.

c. The term “participation rate” typically applies to structured products or equity-indexed annuities, not to mutual funds like VTSAX. VTSAX does not have a participation rate that changes based on market performance. Investors in VTSAX fully participate in the gains and losses of the fund’s portfolio.

3.) Magnifying Risk: Leverage & Nonlinearity

a. Downside Protection: Indexed annuities typically offer downside protection, which means that even if the market index they are tied to declines, the annuity has a guaranteed minimum return or floor value. This ensures that the investor does not lose their principal investment due to market

downturns.

b. Upside Potential: The upside of an indexed annuity comes from its ability to earn returns based on the performance of a market index, like the S&P 500. While there is a cap on the maximum return, investors can still benefit from market upswings to a certain extent. The actual credited rate is often determined by a combination of caps, participation rates, and spreads.

c. Leverage of the Participation Rate: The participation rate in an indexed annuity determines how much of the index's gain is credited to the annuity. For example, with an 80% participation rate, if the index gains 10%, the annuity would be credited with an 8% return (80% of the 10% gain). This rate can act as a form of leverage, amplifying the impact of market gains on the annuity's return, albeit with a cap limiting the maximum return.

d. Correlation and Participation Rate: The correlation between the participation rate and equity market performance is not direct. However, higher market performance can lead to higher credited returns to the annuity, up to the cap limit. The participation rate determines the proportion of the index's gain that will be credited, so while it does not change based on market performance, it does influence the amount of gain that is passed on to the annuity holder.

.

Product 2: ETF

The Vanguard Total Stock Market ETF (VTI)

The Vanguard Total Stock Market ETF (VTI) is a broad index ETF that aims to track the performance of the CRSP US Total Market Index. It is not an annuity product, so it does not have features like downside protection or participation rates typically associated with indexed annuities.

1.) Collateral-Related Risks: Credit Risk

a.) VTI, as an ETF, holds stocks and therefore does not have credit risk in the traditional sense. Credit risk is more relevant to debt instruments.

b.) The payment of dividends for VTI is not insured by any institution. Dividends are paid based on the earnings from the underlying stocks within the ETF.

c.) State insurance guaranty associations do not apply to VTI as it is not an insurance product.

d.) Financial health ratings from independent agencies are not applicable to VTI as it is not an insurance company.

2.) Statistical-Related Risks: Correlation

a.) If the equities in the index have medium to high correlation, it suggests that they tend to move in the same direction, which could mean less diversification benefit.

b.) VTI is considered a relatively safe investment due to its diversification across thousands of stocks. However, it is subject to market risk and can fluctuate in value. c.) The participation rate concept does not apply to VTI as it is not an indexed annuity.

3.) Magnifying Risk: Leverage & Nonlinearity

a.) VTI does not offer downside protection: if the market declines, the ETF's value can decrease.

b.) The upside for VTI is tied to the growth potential of the total U.S. stock market.

c.) VTI does not use leverage in the traditional sense: it aims to replicate the index performance.

Frictional Risk Factors: Liquidity and Regulation VTI is highly liquid due to its broad market exposure and large trading volume. It is regulated by the SEC and must comply with applicable securities laws.

Fallout Risks: Model Failure and Crises VTI could be affected by model failure if the index it tracks fails to accurately represent the market. It is also subject to systemic risks such as financial crises.

Please note that while VTI is a low-cost, diversified investment option, it is still subject to market risks and other factors that can affect its performance. Investors should consider their risk tolerance and investment objectives when investing in any ETF.

Product 3: Indexed Annuity

Indexed Annuities

Indexed annuities are complex financial products that offer a balance between risk and potential return by linking growth to an external market index while providing downside protection but also limiting the upside potential. While indexed annuities try to reduce risk through minimum guaranteed protection, it also limits upward potential through the participate rate and rate cap.

Here's an examination of the product based on the factors you've outlined:

1. Collateral-Related Risks: Credit Risk

a.) Credit risks in indexed annuities primarily involve the possibility that the insurance company issuing the product may fail to fulfill its contractual obligations. This risk is generally low, as annuities are backed by the financial strength of the insurer. However, investors at the guaranteed the minimum principal invested should the insurer fail or incur losses during the investment period.

b.) The payment of dividends/credit guarantees is typically insured by the issuing insurance company itself. No external institution insures these payments, but the insurer's ability to pay is regulated by state insurance departments. Investors do not have access to dividends and only have to rely on the price changes in the linked in the index markets for gains.

c.) State insurance guaranty associations provide a safety net for policyholders if the insurance company becomes insolvent, with most states offering coverage limits of up to $250,000 for annuity contracts.

d.) The financial health ratings of insurance companies are assessed by independent agencies such as AM Best, Fitch, Moody's, and S&P Global. These ratings provide insights into the insurer's ability to meet its financial commitments.

2. Statistical-Related Risks: Correlation

a.) If the equities in the index have medium to high correlation, it implies that they tend to move in the same direction. This can affect the diversification benefits of the annuity. Portfolio diversification (low correlation equities) is necessary to maximise benefits for the insurer only as the cap rate influences the benefits of portfolio gains.

b.) The product can be considered relatively safe due to the principal protection feature, which ensures that the investor's initial investment is not lost due to market downturns. In the even that there is a crash in the equity market that significantly causes the insurance policy holders to become insolvent, investors do not lose their investments as re-insurance companies salvage the

situation by re-imbursing policyholders up to certain limits.

c.) The participation rate determines the percentage of the index's gain credited to the annuity. It can change based on the contract terms but typically does not drop to zero, ensuring some level of upside potential.

3. Magnifying Risk: Leverage & Nonlinearity

a.) Indexed annuities offer downside protection by guaranteeing the principal investment against market losses. This means that even if the index performs poorly, the investor's initial amount is protected.

b.) The upside of indexed annuities is realized through the participation rate, which allows investors to benefit from the index's gains up to a certain cap.

c.) The leverage of the participation rate refers to the extent to which an investor benefits from the index's performance. A higher participation rate means higher potential returns, but it also introduces non-linearity as returns do not directly match the index's performance.

In summary, indexed annuities are designed to mitigate risks through various protective features while offering the potential for growth linked to a market index. However, they also come with certain limitations and complexities that investors should understand before investing.

TASK C

Group Report

Collateral-Related Risks: Credit Risk

As someone who manages investments I make it a point to be transparent, about the risks involved in the products I offer.When it comes to credit risk the ended mutual fund and ETF don't have credit risk since they are equity based. However the annuitys creditworthiness depends on the issuing insurance company. While state guaranty associations provide some protection there are limits to coverage. It's important for investors to check the insurers financial strength ratings from agencies.

Statistical-Related Risks: Correlation

Moving on to correlation risk, the equities in the fund and ETFs tracked index show medium to correlation levels that could affect diversification during market volatility. Despite this their broad market exposure makes them suitable for long term investment plans. The annuities participation rate influences how much it benefits from market gains without dropping to zero.

Magnifying Risk: Leverage & Nonlinearity

In terms of leverage and nonlinearity risk the indexed annuity shields the investment from market downturns while its upside potential is tied to market performance with a cap, in place. The participation rate acts as leverage by boosting gains without increasing losses. This rate is carefully balanced by considering how participation affects market performance.

Frictional Risk Factors: Liquidity and Regulation

Liquididty and regulatory risk ETFs are designed for trading and high liquidity.All the products comply with the regulations established by authorities to ensure they are, in line with investor protection and regulatory standards.

Fallout Risks: Model Failure and Crises

Concerns related to model failures and financial crises pose risks to the performance of these products. For instance if the index being tracked by an Exchange Traded Fund (ETF) becomes inaccurate it could impact the ETFs performance. While structured to withstand market fluctuations indexed annuities are still vulnerable to model failures and broader economic crises.

In summary I recommend that prospective investors conduct research and seek advice, from experts to make investment decisions that match their risk tolerance and financial goals. I am dedicated to providing information on the risks and features of all products offered.

TASK D

Group Answers to 10 and 11

Question 10

a. The Mutual fund Crisis in 2003.

The article aims to compare mutual fund crisis in America and Japan in 2003. It portrays a case where asymmetry of information between mutual funds, brokers and investors may influence financial fraud. The mutual fund clearly was very obvious in American market as result of the large volume of traders and competitors in the market. Factors like transparency caused by the anonymity in the investors, competition caused by the financial gap between well-known instructions and individual investors as well as conflicts of interests by interna shareholders in mutual funds: enhance the perpetration of financial fraud in stock trading.

Two main concepts harnessed to cause the financial crisis to the American market: Late trading and market timing. While market timing isn't illegal, the accessibility of information to privileged traders skewed the market in the favor of a few leaving other uniformed traders to their fate of the market. Lae trading was the illegal activity started by the agreement between stock brokers and mutual funds to enable investors implement their late trades. The absence of proper regulation by the SEC resulted in the widespread scandal in the US in 2003 an enable investors perpetrate the fraudulent activities.

In contrast, the Japan financial de-regulation (Big-bang) enhanced foreign investments in the country with limited access to a number of funds in the market as opposed to large pool in the US. This allowed for proper monitoring and regulations in the event of abnormalities in the securities market. The Big bang strategy caused a positive impact on the economy, concocted formidable business relationships among investors limiting the chance for scandal-whistleblowing. While is it ironic to think there was no fraud in the Japanese market from 1990 to 2003, the business culture in Japan protected the culprits from any possible scandal.

Conclusively, in a local parlance "whoever gets caught in an illegal act, is labelled as the thief". Insofar, the abnormalities and irregularities in the securities market within is a state is protected and properly managed (closely) by the regulations in that state, potential offenders are liable to conform the business culture in that state. This statement further corroborates Hamilton and Sanders (1996) quote in the article. However, in the long run, the fraud in the Japanese markets would likely be uncovered leading to more heinous white collar crime (Pontell ad Geis 2007).

b. Discrepancy between physical and synthetic ETFS:

While physical ETFs can invest in the easy-to-access assets and track their index, synthetic EFs are more likely enter a swap agreement with a counterparty to provide return on the hard-to-commodities such as crude oil. Some markets are conspicuously difficult to access for investors and require the input of investment banks to effectively reap the gains in such markets. For this reason, physical ETFs replicate to form synthetic ETFs to invest in these very obscure markets.

Over the years, synthetic ETFs market have proven to perform better than the physical ETFs because of

significant amount of gain inherent in these 'inaccessible' market. In fact, in the build to the financial crisis of 2008, synthetic ETF markets already accounted for about 50% of the European market. (*https://www.etfstream.com/education/essentials/physical-vs-synthetic-etfs*). before it presence was dwarfed in post-2008 financial crisis as a result of the counterparty risk. Because counterparties fail to provide additional returns on investor's investments, most investor lost fate in the synthetic ETFs system.

Interestingly, synthetic ETFs were liable small amount on withholding taxes on dividends or returns and as such did not get the full benefits of the physical ETFs, and consequently forced into become the physical ETFs (*https://www.etfstream.com/education/essentials/physical-vs-synthetic-etfs*).

Regulators (such as the IMF) also warned the investors against the credit risk involved with swap ETFs which dissuaded investors particularly in Europe from participating in these kinds of funds – which in turn caused a decline in the synthetic ETF market. US regulations which were more restrictive did support the proliferation of synthetic ETFs before it's universal decline (https://www.justetf.com/en/news/etf/the-decline-of-synthetic-etfs.html).

Since, synthetic ETFs have in time past shown the potential to outperform the physical counterparts (prior to 2008), I believe the issues with transparency and counterparty risks, if properly regularly, can be solved. Business that requires heavy operational costs can likely not function as physical ETFs and the only way for investors to gain accesses to these markets is through the synthetic ETFs. While some of these synthetic ETFs have become physical ETFs, their volatilities have skyrocketed astronomically as supply and demand have effectively determined the market price of these commodities rather than the profit and losses from the actual businesses themselves.

c. Index Annuities are not suitable for everyone:

Indexed annuities come with penalties if you withdraw early during the initial contract period. Additionally taking out money before reaching the age of 59½ may result in a 10% penalty tax, on earnings imposed by the IRS.

One challenge is the lack of control over the participation rate, which determines how much of the index gains are credited to your annuity account. This rate is set by the insurance company. Can be adjusted annually impacting returns beyond your control.

Understanding fees associated with annuities can be tricky due to opaque fee structures. Hidden costs, like fees, mortality charges and investment management fees are often included in the contract without disclosure making it hard for investors to grasp the full cost of the annuity.

Before committing to an annuity it's crucial to review the contract terms and consider these factors. Consulting an advisor can offer insights. Help ensure that your choice aligns with your financial goals.

Question 11

The American Mutual Fund Scandal

During the 2000s the American mutual fund sector faced a crisis caused by unethical behaviors and fraudulent activities. This scandal had impacts, on investors, fund managers and regulatory bodies.

Causes of the Scandal:

1. Rapid Expansion: The industrys rapid growth created opportunities for practices as assets under management increased.
2. Lack of Transparency: Investors were often in the dark about fees, market timing and late trading that fund managers used for gain.
3. Conflicts of Interest: Some fund managers prioritized their profits and those of their firms over their clients best interests engaging in practices that favored investors.
4. Business Traditions: Established industry norms blurred boundaries allowing market timing and late trading to occur contributing to the scandal.

Vulnerabilities

Scandal Consequences:

1. Investor Losses: Many investors faced setbacks due to market timing and late trading shaking their trust in funds.
2. Ramifications: Regulatory agencies and investors took action against fund companies resulting in penalties and fines, for those implicated in wrongdoing.
The industrys reputation took a hit due, to the scandal making investors question the integrity of fund managers and call for regulations.

Although Japan hasn't faced a scandal its expanding investment trust market is vulnerable like the US with its growing investments. Addressing gaps is crucial to prevent abuses and protect investors.

Proposed Regulations for Japan:

1. Regulation: Japan should enforce rules for mutual funds and investment trusts focusing on transparency, disclosure and accountability.
2. Monitoring and Enforcement: Regulatory bodies need to oversee fund activities and impose penalties for violations to deter misconduct.
3. Educating Investors: Educating investors about risks, fees and their rights is essential, in empowering them to guard against fraud.

Learning from the mutual fund scandal can help Japan avoid a crisis by implementing robust regulations and promoting transparency to protect its investors.

Synthetic Exchange Traded Funds (ETFs) use derivatives or swaps to mimic an indexs performance of purchasing all underlying securities.

For example the iShares S&P 500 Swap UCITS (i500 LN) uses a swap agreement to mirror the performance of the S&P 500 index.

Advantages and Disadvantages:

Synthetic ETFs depending on their underlying assets may offer benefits, like trading costs reduced withholding tax and better returns compared to physical ETFs. However they also come with risks such as counterparty exposure, regulatory uncertainties and complexities in tracking indices.

Performance Analysis:

The piece discusses scenarios where synthetic ETFs have outperformed ones citing examples like the iShares S&P 500 Swap UCITS (i500 LN) and the Lyxor Core MSCI World (DR) UCITS ETF (LCWL LN). These performance differences are influenced by how they replicate indexes and their fee structures.

Regional Trends

Most synthetic ETFs are concentrated in EMEA (67%) followed by the Americas (23%) and Asia Pacific (10%). This distribution is partly driven by tax advantages within the UCITS framework in EMEA while US regulations favor ETFs due, to the 1940 Act.

Closing Thoughts

The belief that physical ETFs always trump ones isn't universally valid since some synthetic options have showcased performance.Both kinds of ETFs serve a purpose, in the market meeting the varying needs of investors in regions and tax jurisdictions.

Responsibilities Regarding Suitability for Securities and Annuities

Indexed annuities are risky instruments: These annuities attribute returns based on how a securities index, like the S&P 500 performs. Their blended characteristics, blending elements of fixed and variable annuities introduce complexities and risks. Factors such as caps, participation rates, spreads and other calculations can restrict interest earned. Extended surrender periods, hefty surrender fees and tax penalties for withdrawals raise concerns. Additionally these annuities might not offer protection against inflation or market declines.

Indexed annuities do not fall under SEC regulation as securities: While they are not exempt from being considered securities under the Securities Act of 1933 indexed annuities are treated as such if issued by an insurer governed by a state that has adopted the NAIC Model Suitability Regulation or similar standards. This is due to the Harkin Amendment in the Dodd Frank Act. As a result indexed annuities do not adhere to the disclosure, registration and suitability requirements as securities products: this could potentially leave investors with fewer options, in cases of fraud or misuse.
Indexed annuities are held to standards of appropriateness, by regulators: The guidelines for indexed annuities suitability differ depending on the state where they are marketed. Some states follow the NAIC Model Suitability Regulation, which mandates that brokers must have reasons to believe a recommendation is considering factors such as age, income, risk tolerance and financial goals. Other states have their versions of the Model Regulation. Lack suitability criteria entirely. Additionally FINRA Rule 2111 pertains to recommendations involving selling off or surrendering securities products to finance the purchase of an annuity requiring a justification, for appropriateness based on the investors profile and the risks and benefits of the transaction.

REFERENCES

https://www.bloomberg.com/professional/insights/markets/stigma-surrounding-synthetic-etfs-should-be-put-to-rest-for-good/

https://www.blackrock.com/americas-offshore/en/education/etf/etf-structures#:~:text=A%20synthetic%20ETF%20does%20not,series%20of%20oil%20futures%20contracts.

https://www.etfstream.com/education/essentials/physical-vs-synthetic-etfs

https://www.justetf.com/en/news/etf/the-decline-of-synthetic-etfs.html

https://link.springer.com/article/10.1007/s11417-010-9090-7