Executive Summary

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Goal

1. ***Seeking an expansion into Europe***
2. ***Grow corporate net capital***

Investment Portfolio

Perform macro/industry research related to company's business and the financial world, seek out opportunities in different markets, then pick the market areas that coincide with company's goal

From the chosen markets, dive in further by conducting research on those markets, select a variety of assets that have uprising potential and are in line with our business, or can be used to mitigate risk

Perform back testing on the assets chosen. Based on the performance of each asset, pick those that are performing well, allocate an optimized weighting for each to form a diversified investment portfolio

Macro/Industry Research

Market Research

Back testing

Portfolio Allocation :

- ❑ Commodities
- ❑ Equities
- ❑ Bonds & Funds

Assumption

Technical Analysis

- Market has processed all available information and reflected in the price chart

Mean Reversion Ability

- The prices of assets will eventually revert to their mean levels over time

Historical Price Trend

- The trend of assets will be continuously driven by global demand, events, economics

Source: Tradingview.com / Portfoliovisualizer.com / Investopedia.com

Hedging the rapid change of risk in Europe economy is the key to expand business

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Europe Market and Economy

1. Economic Growth

GDP growth rate in Euro areas is falling.
E.g. energy crisis, geopolitical tensions (Russo-Ukrainian War)

> In the past **3** years:
> Highest: **+ 2.4%**
> Lowest: **- 0.1%**

This may affect the demand for livestock products, and potentially reduce the profitability of the company

2. Interest rates

The interest rate in Euro areas is rising

> In past **3** years:
> Highest: **4.5%**
> Lowest: **0%**
> Average: around **2.6%**

Higher interest rate raises the cost of capitalization and lowers the ability of repaying debt

3. Currency fluctuations

The exchange rates of USD/AUD and USD/EUR are fluctuating, they move in same direction

> In past **1** year:
> Highest: **1.59** USD/AUD, **0.952** USD/EUR
> Lowest: **1.446** USD/AUD, **0.894** USD/EUR
> Annual change: USD/AUD: **-6.22%**,
> USD/EUR: **-3.85%**

The fluctuating exchange rates will affect the investment cost, export and import costs when using different currencies

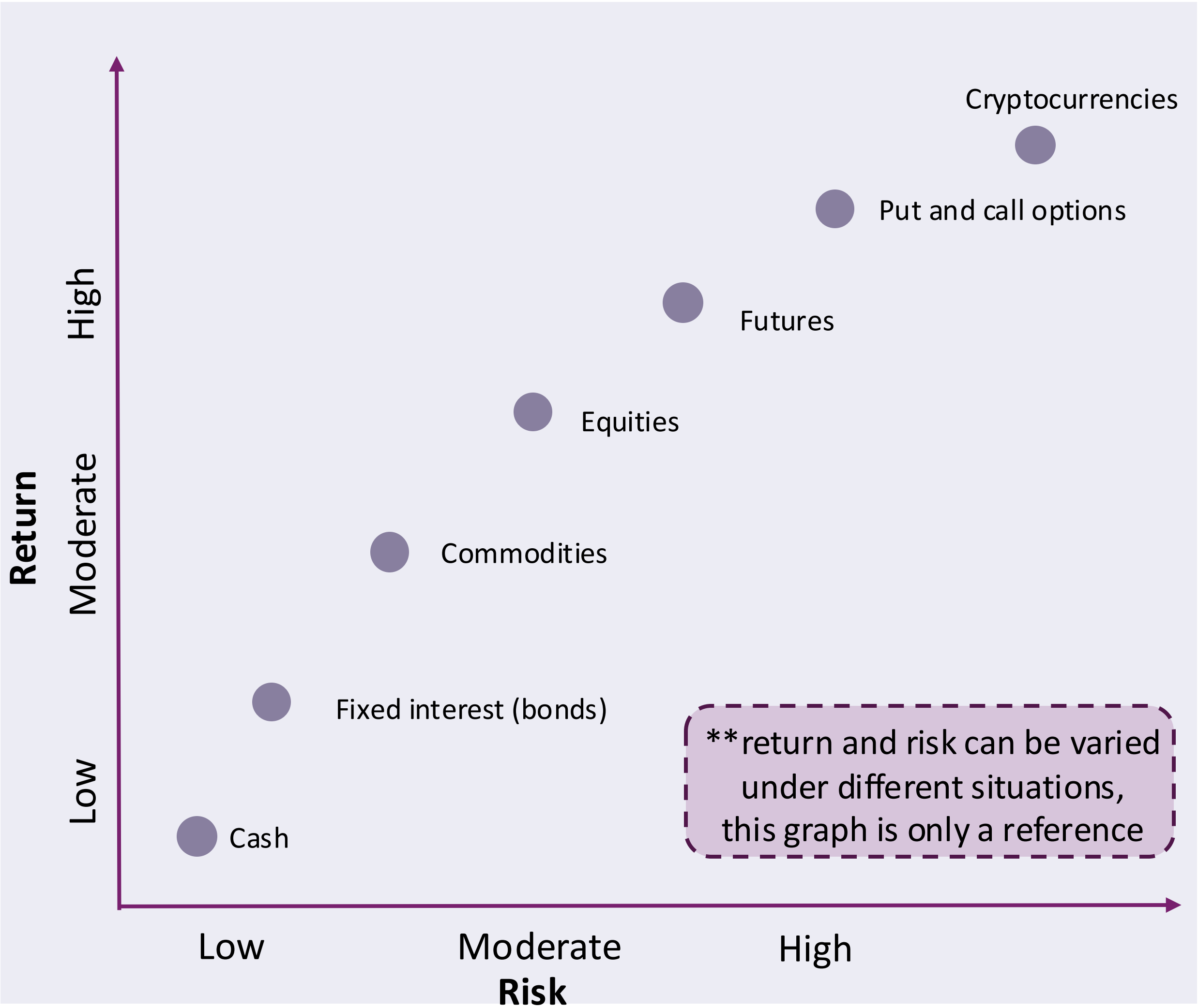
Logistics and operations cost of our company will be raised , which slows down our expansion into Europe market

Since there are economy uncertainties and fluctuations in different rates, our corporation should diversify and hedge the risk from the portfolio

Source:

With moderate risk appetite, less aggressive portfolio will form to hedge the economy

Risk Return graph of different asset class



Source: Economictimes.com

Investment Portfolio Forming

Assumptions :
From the given scenario, company has a moderate risk appetite

Current economy :
Search for assets that aligns with company's business or help mitigate risks

Company Target :
Mitigate risk, especially businesses in Europe as our company hopes to expand into Europe

Formation :
Combining the above, a less aggressive investment portfolio will be formed

Commodities, equities and bond/funds be selected to form the investment portfolio

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Recap our investment assumptions :

Technical Analysis

Mean Reversion Ability

Historical Price Trends

Reason for choosing these assets :

Commodities

- Hedge against different risks including operational risk, market risk and inflation
- Different types of commodity could be used to diversify the portfolio risk and earn risk-adjusted returns
- Commodities are influenced by global economic trends, and thus provide a huge exposure to potential return in certain circumstances

Equities

- High volatility and risky. As stock fluctuate significantly based on conditions, and investment sentiment
- More diverse options for investors to choose
- Due to high volatility, more strategies and technical indicators can be applied when compared to other assets, leading to more profit opportunities

Bonds and Funds

- Small correlation with commodities and equities, which helps diversify the portfolio and act as complementary assets
- Smaller variance when compared to other assets, which implies they are less risky assets for the portfolio and acts as a protection for the portfolio
- Provides a predictable income stream

Noted that : The percentage of three asset class allocation will be introduced in detail in later pages and excel.xlsx attachment

Source:

Three back testing strategies we used : Technical Rating / Momentum / Buy and Hold

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Back testing rationale

Technical Rating Strategy

What is it

A systematic approach to trading that uses signals generated from a comprehensive set of technical indicators

How it works

A systematic approach to trading that uses signals generated from a comprehensive set of technical indicators

Objective

To identify profitable entry and exit points in the market by evaluating multiple technical signals and combining their ratings

Choosing Reason

- ✓ **Combines Multiple Strategy**: offers holistic market analysis, reduce reliance on any single tool
- ✓ **Simplifies Decision –Making**: Only simply use overall rating helps determine decision, which is time-saving and efficient
- ✓ **Clear Signals**: Generates long & short signals, tips for exit & enter
- ✓ **Risk Management**: build-in mechanism for fixed stop loss or exit

WHAT {IF..}

Using other strategies

Simple Explanations

Momentum :
Work with volatility by finding buying opportunities in short-term uptrends and then selling when the securities start to lose momentum

Buy and Hold :
Simply just hold the assets to the target maturity and sell all. Usually use with fundamental analysis.

Noted that : All the above-mentioned strategies' pseudo code, performance will be provided in the excel.xlsx attachment

Source: Tradingview.com / Investopedia.com

Commodities Selection

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Description	Cotton	Crude Oil	Live Cattle Future
ALLOCATION	12.19%	7.34%	14.36%
PRODUCT TYPE	Contract for Difference (CFD) Asset code : COTTON	Contract for Difference (CFD) Asset code : USOIL	Commodity Future Asset code : BGI1
ASSET PERFORMANCE	Expected Return = + 3.09% Percent Profitable = + 31.27%	Expected Return = + 0.93% Percent Profitable = + 31.20%	Expected Return = + 2.83% Percent Profitable = + 36.40%
TRADING STRATEGY	Based on the indicators given by Technical Rating Strategy (Buy low and sell high repeatedly throughout the year		Hold to maturity and trade the cattle by the predetermined price
SPECIALTY THE SPECIFIC ASSET	1. Diversify risk by involving the market other than livestock 2. Respond to the textile industry in Europe, which has a huge portion market share in the world	1. Hedge against transportation cost and operational risk via its impact on fuel cost and the natural hedge created 2. Leverage on energy dependency	1. Aligns with company's business 2. Capture European beef demand and capitalize its price momentum 3. Hedge against rising feed prices which is the major input cost

Noted that : 'Percentage Profitable' is the percentage of winning trades, i.e. the number of winning trades divided by the total number of closed trades

Source: Tradingview.com / Bloomberg

1. The Bloomberg asset code cannot be identified due to limited access to Bloomberg, so the asset code on TradingView was used instead

Equities Selection

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Description	TESLA INC	CHINA GRREN AGRICULTURE INC	SHELL PLC	COMERICA INC
ALLOCATION	10.72%	5.99%	4.22%	15.73%
PRODUCT TYPE	Stock Bloomberg code: TSLA:US	Stock Bloomberg code: CGA:US	Stock Bloomberg code: SHEL:LN	Stock Bloomberg code: CMA:US
ASSET PERFORMANCE	Expected Return = + 0.72% Percent Profitable= +37.7%	Expected Return = 0.01% Percent Profitable= +33.79	Expected Return = + 0.13% Percent Profitable = +100%	Expected Return = + 0.01% Percent Profitable = +100%
TRADING STRATEGY	Based on the Momentum Strategy, (Buy low and sell high repeatedly throughout the year)		Based on the Buy and Hold Strategy, (hold to 1 year maturity and sell)	
SPECIALTY THE SPECIFIC ASSET	1. Fed cutting rates will stimulate corporate like Tesla to expand business 2. Investors are extremely aware of Tesla news which can easily cause price fluctuations 3. Net profit return even when held to maturity	1. Alignment with core business 2. Due to POBC and political policies, price fluctuations are expected 3. Net profit return even when held to maturity	1. Alignment with core business (energy industry) 2. Net profit return even when held to maturity 3. If energy crisis happens in Europe, stock price will increase	1. Alignment with core business (logistics) 2. Well-recognized among Europe shipping industry 3. If energy crisis happens in Europe, importance of transportation will increase

Source: Tradingview.com / Bloomberg

Bonds & Funds Selection

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Description	EURO 1 YEAR GOVERNMENT BONDS	EUROPEAN INVESTMENT BANK EIB 2017-24.05.27 Global	ISHARES USD GREEN BOND ETF
ALLOCATION	15.22%	8.64%	5.59%
PRODUCT TYPE	Government Bond Asset code : EU01[1]	Government Bond Asset code : E5B1[1]	Corporate Fund ETFs Asset code : BGRN:US
ASSET PERFORMANCE	Expected Return = + 0.04% Percent Profitable = + 22.66%	Expected Return = + 0.04% Percent Profitable = + 38.46%	Expected Return = + 0.45% Percent Profitable = + 37.93%
TRADING STRATEGY	Based on the indicators given by Technical Rating Strategy (Buy low and sell high repeatedly throughout the year). Then sell all assets after reaching the 1-year mark		
SPECIALTY THE SPECIFIC ASSET	1. Aligns with company's goal of expanding into European market 2. Highly rated, AAA credit rating under Moody's rating system 3. No chance of default	1. Highly rated, AAA credit rating under Moody's rating system 2. Widely recognized in the green bond market which coincides with company's business	1. ETFs implies a diversified portfolio of green bonds issued by various entities, which means risk can be mitigated 2. Rated well, A credit rating under MSCI ESG fund rating system 3. Aligns with company's business

Source: Tradingview.com / Bloomberg

1. The Bloomberg asset code cannot be identified due to limited access to Bloomberg, so the asset code on TradingView was used instead

Portfolio allocation under historical performance evaluations

Portfolio consists of …

33.89% Commodities

COTTON	USOIL	BGI1
12.19%	7.34%	14.36%

36.66% Equities

TSLA:US	CGA:US	SHEL:LN	CMA:US
10.72%	5.99%	4.22%	15.73%

29.45% Bonds and Funds

EU01	E5B1	BGRN:US
15.22%	8.64%	5.59%

Methodology: Mean-variance optimization (MVO)

Data Collection

- Gather historical returns of the assets in the portfolio.
- These returns will be used to estimate the mean (expected returns)
- The variance (risk or volatility) of each asset, along with the covariances between assets.

Calculate Expected Returns & Covariance Matrix

- **Expected Returns**: Compute the average (mean) of the historical returns for each asset. This serves as the estimate of the future expected return.
- **Covariance Matrix**: Calculate the covariance between each pair of assets based on historical data, capturing how the returns of two assets move relative to each other. This helps in understanding diversification benefits.

Optimization

- Using quadratic programming or other optimization techniques, solve the problem by adjusting the asset weights to either: minimize risk for a target return, or maximize return for a given risk level.
- The output is the set of optimal asset weights that form the efficient frontier, representing the best risk-return trade-offs.

Portfolio Allocation

- Allocate the portfolio according to the optimized weights obtained from the MVO.
- Each asset's weight will reflect its contribution to minimizing risk while achieving the desired return.

Noted that : All the above-mentioned allocation rationale will be provided in the excel.xlsx attachment

Source: Tradingview.com / Portfoliovisualizer.com

Portfolio allocation under several bad-side scenario

Russo – Ukrainian War

The geopolitical tensions from the war could lead to market volatility, making equity prices fluctuate.

Also, the supply chain and the global demand would be affected, thus the prices of commodities might be negatively impacted.

During the time of geopolitical uncertainty, investors tend to seek safe-haven securities, resulting to some potential impacts on bond prices and the corresponding yields to maturity.

Interest Rate

When interest rate rises, the existing bonds will not be attractive anymore, making a declined demand for it, and so as its prices. Since the cost of borrowing is higher, it is expected that the cash flows and profits of companies to fall, hence the stock market would be negatively impacted.

Currency Fluctuation

The ratio of Euro against USD will be affected, making the returns of the portfolio fluctuate due to currency translation effects. This is because of the rise in costs involving currencies exchange.

Source: