



Final Report for the Wharton Global Investment Competition

Team Name: TEAMWHS

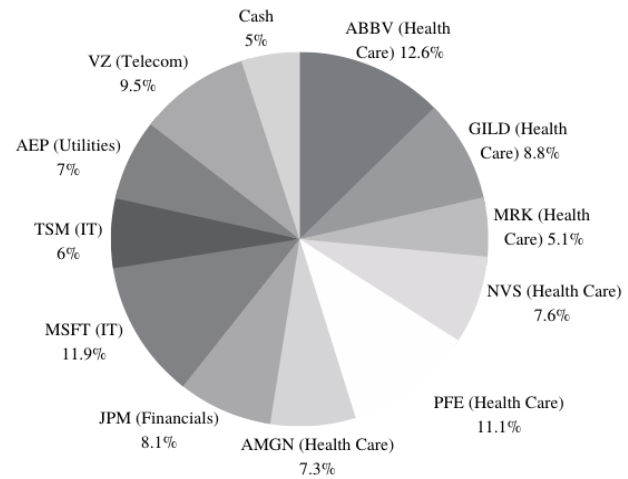
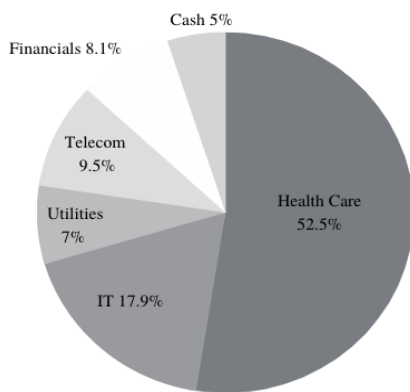
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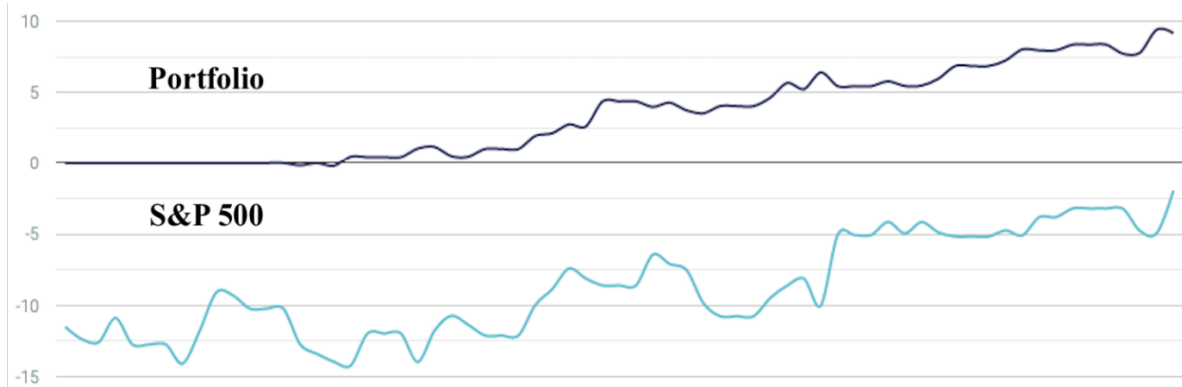
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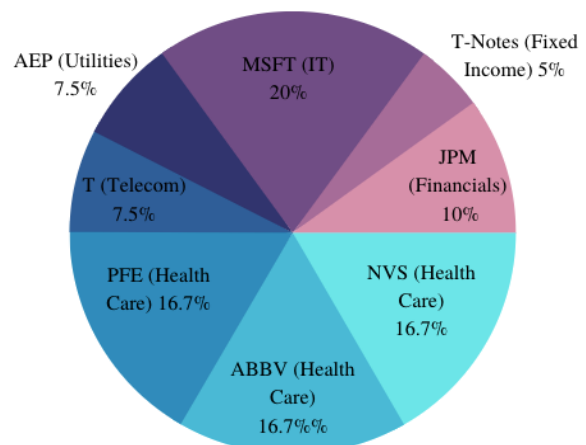
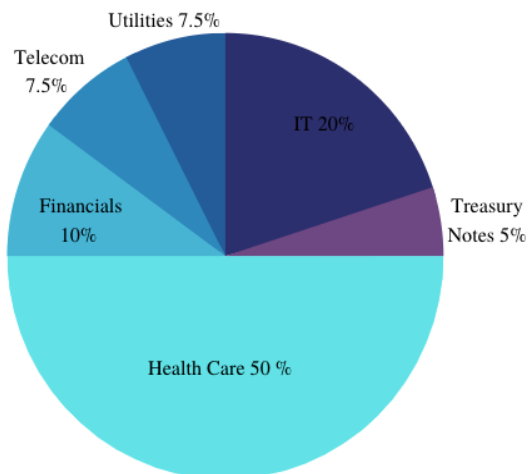
WlnS PORTFOLIO



OUR PERFORMANCE



RECOMMENDED PORTFOLIO



*NOTE: All media other than company logos, charts provided by WlnS, and images created by TEAMWHS have been cited.

Our Strategy

Unlike inflation, the market has not yet priced-in risk of a recession in the next 0 - 3 years, something we expect as the Federal Reserve increases interest rates. Thus, we are heavily allocated into non-cyclical sectors yielding high dividends (i.e., healthcare, utilities, communications) and fixed-income products. As the global economy stabilizes, we will reverse our allocation into growth equities (technology), but still continue to hedge with treasury notes and high-dividend blue-chip stocks.

What Sets Us Apart

The uniqueness of our strategy is derived from the simple mantra: maximize profit in defined risk boundaries. To achieve this, our strategy capitalizes on developing macro-economic conditions (concerning a recession), and a general societal shift towards the use of technology. More so, we ensure that all our selected equities have good financials, strong future prospects, and maintain an edge over their sector competitors.

Advisor Reflections

It is with great pleasure that I write this, as the club advisor, at the conclusion of the Wharton Global High School Investing Competition. By participating in the competition, I hoped to uncover the power of investing for students and have witnessed immense growth in their knowledge of investing. First off, their desire to form a complex understanding of investing was exemplary. From the outset they thought critically about forming a logical and concise thesis and then dove deep into sectors and single companies to express their view. They worked well together with never ending curiosity about markets.

With only one team enrolled for Westfield Senior High School, this was our first year participating in the competition. We hope to expand to multiple teams next year as interest in the program has grown rapidly. I am incredibly proud of the group and look forward to advising them in the future.

(Trade Note #1) I am purchasing JPM because it is a market leader in the financial services sector (market cap 396.88Bn) and has a flawless balance sheet, indicating that it provides stability in a harsh economic climate. More so, it pays a reliable dividend of 2.93%.

(Reflection) The team ultimately decided to buy JPM because of their superior quantitative fundamentals (balance sheet, ratios, etc.) As we analyzed rivals in their respective industries, we often found it difficult to select one prevailing company. Specifically, because businesses in the same sectors faced similar macro-economic conditions. Thus, after choosing JPM to represent diversification into the financial sector, we realized an extensive quantitative analysis should be incorporated into our strategy.

(Trade Note #2) I am buying PFE because it is currently undervalued in the market and has a sustainable dividend of 3.3%. More so, it has been experiencing robust growth (8.6% YoY) thanks to its large R&D budget (\$13.8Bn).

(Reflection) Allocation into Pfizer reflects one of the numerous ways our strategy is distinct: it generates returns across any time frame. Pfizer offers both short-term hedging (because of the dividend) and a chance for significant long-term growth (high R&D budget). This combination prompted us to search for additional stocks and industries that would provide value regardless of the holding duration.

(Trade Note #3) We are adding more of ABBV because of its announcement of good earnings on new projects and its strong performance in this market.

(Reflection) The choice to increase allocation into ABBV reflected the growing importance of current affairs in our decision-making process. More precisely, we realized that a thorough examination of the company's internal dynamics, future plans, and profitability could provide indications that other investors are omitting.

OUR CLIENT

Above all, we were concerned with making sure that Peter would benefit from our plan given his objectives, personality, and lifestyle. Therefore, we considered the following critical factors:

1. Emphasis on holistic well-being

Peter's attention to his mental health is admirable, and we feel that his portfolio should give him the same peace of mind. As a result, we only selected large-cap equities that are dependable and prioritize consistent growth.

2. Enhancing the planet's longevity

To match Peter's repurpose Global initiative we took into account ESG ratings to ensure a company's commitment to assisting the environment by minimizing pollution. Not only must a company guarantee the planet's longevity, but also its own. Consequently, all selected companies are socially viable through diversity/inclusion and proper business practices.

3. Charitable nature

One aspect of Peter's story stood out to us: his willingness to give back. We think that all of Peter's investments should "give back" in the form of dividends, reflecting his intention to support entrepreneurs. Thus, nearly all chosen stocks pay out dividends that at least meet their sector average.

4. Peter's determination

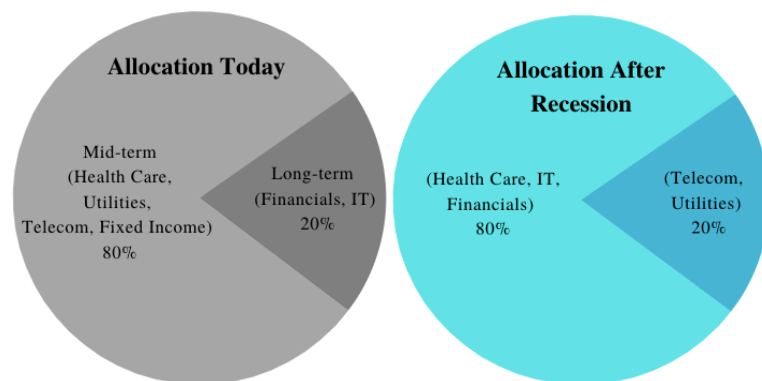
Peter's goal to start his own yoga and wellness center is an ambitious one. Therefore, we have selected several companies across multiple sectors, including health care and information technology, which are ambitious (just like Peter) in their quest to revolutionize cutting-edge technologies that strive to create a better future.

THESIS: MOTIVATIONS, ALLOCATIONS, AND OUR EXPERIENCE

(Mid-term) Given the Fed's aggressive interest rate policy, we are almost certain of recession in the next 0 – 36 months. Following substantial collaboration and research on how to protect against a recessionary threat, we discovered dividends. As stock prices decline, dividend yields rise and would offer a reliable source of income during uncertain economic times. In alignment with this strategy, we selected three sectors: health care, utilities, and communications.

As the world's population rises, unhealthy lifestyles gain popularity, and new modern technology is developed, the field of health care, and specifically biotech, is expanding. Because biotech offered both the positive metrics necessary to survive a recession and opportunities for long-term growth, it became the first addition our portfolio. Electricity utilities also had many positive financial measures and provided the possibility for long-term growth due to increasing global dependence on electric power. Finally, as the world becomes more interconnected, the telecom industry will continue to prosper. Offering one of the highest dividends rates of any sector, the telecom sector was another excellent addition to our portfolio.

(Allocation) As the economy emerges from recession, we anticipate that the technology sector will dominate market growth (as it historically does). The charts on the right show our allocation.



¹Treasury notes are also part our mid-term strategy, but their role will be explained in the PORTFOLIO ANALYSIS: MIDTERM STRATEGIES section.

(Long Term) Our first choice was the IT sector. The reason being that computer and data power have increased tremendously, and we believe these technologies will go on to transform the world (bringing with them high revenue growth). Our final allocation was into the financial sector. It has proven itself durable after facing multiple financial crises in the past two decades and is often overlooked as a long-term growth industry (grew 6% YoY in the past 30 years).²

We will now prove why our equity selections are superior to their sector competitors.

PORTFOLIO ANALYSIS: MIDTERM STRATEGIES



Pfizer (NYSE: PFE): Largest pharmaceutical company in the world focusing on oncology, immunology, and vaccines.

Quantitative Analysis³

1. **3.3%** sustainable dividend yield (higher than sector average)
2. **P/E 9.2x** (vs. 16.9x industry average)
3. **8.6%** annual growth **YoY**
4. Highest R&D budget in sector (\$13.8Bn)

Biggest biopharma by Rx sales



Qualitative Analysis⁴

1. (Dependability) Pfizer was one of the few pharmaceutical companies to release an **effective Covid-19 vaccine** and did so in **record speed**.
2. (Risk) As Covid-19 pandemic dissipates, its revenue from vaccine Comirnaty will certainly decrease. However, Pfizer is planning the release of **10 new products in 2023**.
3. Sitting on **large cash reserves** accumulated during the pandemic, **accelerating R&D**.

² Davis, Chris. "Why Financial Stocks May Represent the Most Attractive Opportunity in Today's Markets." davisfunds.com/research-insights/financial-stocks-attractive-opportunity/

³ simplywall.st/stocks/us/pharmaceuticals-biotech/nyse-pfe/Pfizer

⁴ "Pfizer SWOT & PESTLE Analysis: SWOT & PESTLE." SWOT & PESTLE.com, swotandpestle.com/pfizer/

⁵ "Chart: World's Biggest Players in Pharma" www.statista.com/chart/10149/top-ten-in-big-pharma/

4. (Brand Value) Has produced some of the **most popular treatments** (Xanax, Advil, EpiPen), indicating its success in creating **high-selling products**.



AbbVie (NYSE: ABBV): Leading American bio-pharma company specializing in therapeutic areas of immunology, oncology, and neuroscience.

Quantitative Analysis ⁶

1. **3.71%** sustainable dividend yield (higher than sector average) [**5% increase** next Q]
2. Steady revenue growth of **4.5% YoY**
3. EPS for the twelve months ending 9/20 was **\$7.49**, an **84.48% increase** YoY.
4. Relatively **low P/E (20.23x)**

Qualitative Analysis ^{7,8}

1. (Catalyst) Humira (its top selling drug) will lose its patent protection in 2023.

However, management expects Skyrizi and Rinvoq sales (**up 55% in Q2 2022**) to surpass Humira sales in the following years.
2. Strong manufacturing capabilities with 22 high-tech manufacturing/R&D locations
3. Has sector **advantage** of treating rare disease (ex. - **Alzheimers**) that other companies are not ready to take on
4. (Weakness) Average tenure of its senior management is **1.5yrs**, indicating weak and inexperienced management structure. However, has talented technicians.



Novartis AG (NYSE: NVS): Dominant European bio-pharma company, specializing in cardiovascular, neuroscience, and oncology treatments.

Quantitative Analysis ⁹

1. **Future ROE** predicted to be **23.6%** (indicates effective operational investments)
2. **3.5% sustainable** dividend yield (**above industry average**)

⁶ "AbbVie (NYSE:ABBV) Stock Price & Quote Analysis." simplywall.st/stocks/us/pharmaceuticals-biotech/nyse-abbv/abbvie

⁷ "AbbVie SWOT Analysis (NYSE:ABBV)." seekingalpha.com/article/4271585-abbvie-swot-analysis

⁸ "Financial Reports." AbbVie. December 12, 2022, investors.abbvie.com/financial-reports

⁹ "Novartis (NYSE: NVS) Stock Price & Quote Analysis." simplywall.st/stocks/us/pharmaceuticals-biotech/nyse-nvs/Novarti

3. **P/E 8.7x** (vs. 17.7x industry average)

4. **19.2% earnings growth** YoY

Qualitative Analysis¹⁰

1. (Responsible) Ranks **3rd** in **access to medicine** amongst its competitors.
2. (Innovation) Investing heavily into focusing on **gene & cell therapy, radioligand therapy, and xRNA** technology.
 - a. Has over **140** new products in R&D



American Electric Power (NYSE: AEP): one of biggest utility companies in the U.S., serving electricity to more than 5 million people in 11 states.

Quantitative Analysis¹¹

1. **3.51% reliable, increasing** dividend yield (higher than industry average of 3.2%)
2. **Grew 6.9% YoY** for the past 5 years

Qualitative Analysis^{12, 13}

1. As an electricity producer, 46.7% of AEP's electricity is obtained using coal.

However, it is committed to **decarbonization** and **environment protection**, indicating its **adaptability** and willingness to grow.

 - a. **Reduced carbon emissions 70%** since 2000 (invested \$9.1Bn from 2000)
 - b. Will **increase its renewable energy usage to ~50%** by 2030
2. Government clean-energy infrastructure spending is a popular issue and will help AEP's transformation into the future if acted upon.
3. Strong brand recognition; can **charge more** than its rivals.

¹⁰ "Novartis SWOT & PESTLE Analysis: SWOT & PESTLE." SWOT & PESTLE.com, swotandpestle.com/Novartis/

¹¹ "American Electric Power Company (NasdaqGS:AEP) Stock Price & Quote Analysis." simplywall.st/stocks/us/utilities/nasdaq-aep/american-electric-power

¹² "Company ESG Risk Rating – Sustainalytics." sustainalytics.com/esg-rating/american-electric-power-co-inc/1008013716

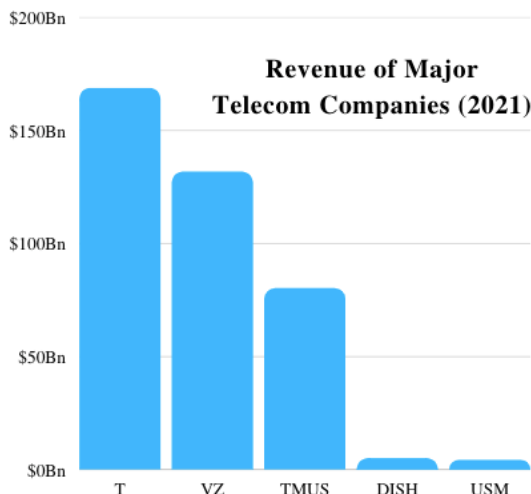
¹³ "ESG." Investors, December 9, 2022, www.aep.com/investors/ESG



AT&T (NYSE: T): Largest telecom provider by revenue, offering data/broadband, network, communications, and internet services.

Quantitative Analysis ¹⁴

1. **5.84% sustainable** dividend yield
(dominates market average)
2. P/E - **7.7x** vs industry average (16.7x)
3. **410.3% earnings growth** (in last year)
4. (Q2) **Added 813,000** phone subscribers
(lucrative in the sector)



Qualitative Analysis ¹⁵

1. Recently fully divested from its unsuccessful media subsidiaries DirecTV and Warner Media, enabling it to **prioritize its wireless and broadband operations.**
2. **Superior infrastructure** allows them to incorporate new technologies **nation-wide faster** than competitors. As a result, they can provide **high-speed** internet access almost anywhere in the U.S.
3. (Risk) Experiencing slow growth in its legacy wireline business, but has plans to **boost** its new **5G** and fiber networks projects (close to **\$24Bn in capital investments**)

1-Year Treasury Notes ¹⁶

In simple terms, the U.S. Treasury Yield Curve serves as a market expectation of the Federal Reserve's interest rate policy. Currently, the T Curve is inverted. The curve shape indicates that the market has low confidence in the economy's performance over the next 6 to 24 months due to the Fed's interest rate hikes. Hence, demand for short-term fixed income products (notes) is low, so yield is high.

¹⁴ "AT&T (NYSE:T) Stock Price & Quote Analysis" Simply Wall St, December 9, 2022, simplywall.st/stocks/us/telecom/nyse-t/att

¹⁵ "Is AT&T Stock a Buy Now?" fool.com/investing/2022/10/25/is-att-stock-a-buy-now/

¹⁶ "Understanding The Treasury Yield Curve Rates." investopedia.com/articles/investing/110714/understanding-treasury-yield-curve-rates.asp



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This creates an opportunity for **no-risk, high-yielding interest income** offers an additional buffer in times of economic turmoil. More so, an inverted UST curve has been a **historical indicator of recession**, corroborating our concerns of one occurring.

PORTFOLIO ANALYSIS: LONG-TERM STRATEGIES

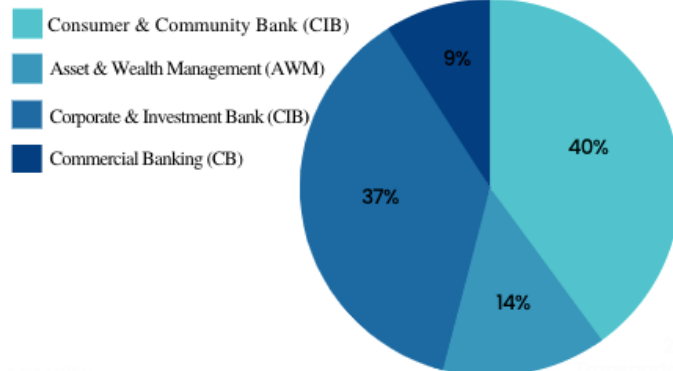


J.P. Morgan Chase (NYSE: JPM): Largest bank by assets in the U.S., containing both commercial and investment banking divisions.

Quantitative Analysis ¹⁸

1. **Loans to Assets Ratio** of **30%** (provides needed liquidity in uncertain conditions)
2. **10.9% earnings growth YoY** in the past 5 years (fared successfully in a pandemic)
3. **69%** of its credit is **low risk**
4. Growing reliable dividend
(**2.89%**)
5. **Income from interest (NII)**
up 26% from last yr.

JPMorgan Revenue Breakdown (Q4 2021)



Qualitative Analysis ¹⁹

1. Unlike many sector competitors (like GS), JPM provides exposure to **commercial and investment banking** which offers **balanced revenue**.
 - a. In high interest rate periods, commercial banking will **fare better** as banks are able to **charge more** for **interest-bearing products** (loans, mortgages, etc.)

¹⁷ "US Treasuries Yield Curve." December 10, 2022, www.ustreasuryyieldcurve.com/

¹⁸ "JPMorgan Chase (NYSE:JPM) Stock Price & Quote Analysis" simplywall.st/stocks/us/banks/nyse-jpm/jpmorgan-chase

¹⁹ "JPMorgan Chase Stock: Too Cheap To Ignore (NYSE:JPM)" SeekingAlpha, seekingalpha.com/article/4529354-jpmorgan-chase-the-industry-leader-is-too-cheap-to-ignore

b. In times of strong economic growth, IB will be able to charge higher fees and contribute to a higher percentage of revenue.

2. (Stable) Unlike competitors, it is setting aside **substantial amounts cash** in case IB, and lending business get hurt. Also, **it recovered quicker** following the 2008 Financial crash.

3. (Adaptable) One of the **first major banks** to provide investors with



Microsoft (NYSE: Microsoft) Largest computer company in the world providing cloud computing, video games services, and other online services.

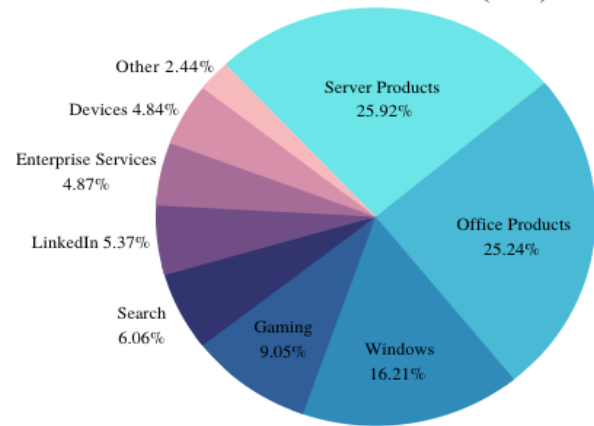
Quantitative Analysis ²⁰

1. **PE (27.3x vs 44.6x [industry average])**
2. **Reduced debt to equity (95.7% to 28%)**
in the last 5 years
3. **High ROE (40.2% vs 12.1% [industry average])**

Qualitative Analysis ²¹

1. Experienced Management team (7.7 yrs. average tenure)
2. Has **2nd largest market share (21%)** of growing (17.9% YoY cloud computing space
 - a. Well-positioned to **steal market share from Amazon** as it struggles with negative free cash flow vs. MSFT's \$63.33 Bn.
3. Presence in the gaming industry is set to increase through **growth of Xbox** and **acquisition of Activision.**
4. **Increasing market share** in the **growing digital advertising** industry through its recent acquisition of **Xandr** and partnership with **Netflix.**

Revenue Diversification (2021)



²⁰ "Microsoft (NasdaqGS:MSFT) Stock Price & Quote Analysis" simplywall.st/stocks/us/software/nasdaq-msft/Microsoft

²¹ "Stock Market Sell-Off: Is Microsoft Stock a Buy?" fool.com/investing/2022/11/18/stock-market-sell-off-is-microsoft-stock-a-buy/