Redhawk Fund

Seattle University

Financial Sector Report

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6/18/2020

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Economic Indicators

Financials sector has economy-wide exposure and are sensitive to macro-financial indicators:

- Real Economic Activity

Industries within this sector are largely driven by transaction volume, consumption level, industrial production, and trade condition. Therefore, to understand the cyclical nature of this sector, periodic dataset of GDP growth rate, unemployment rate, PMI and consumer income should be closely watched and analyzed.

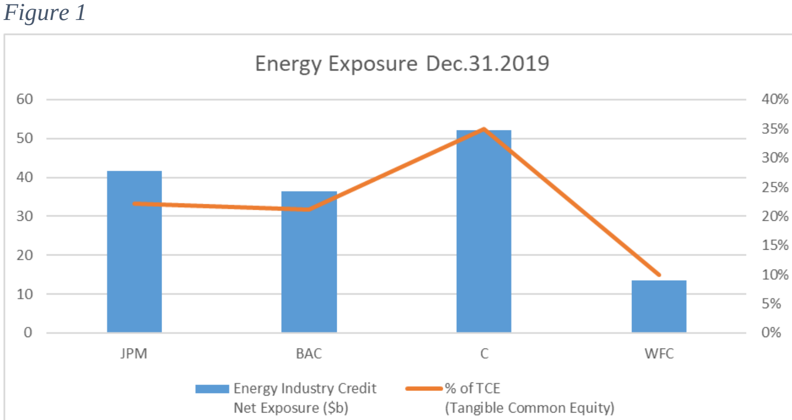
- Monetary and Fiscal Policy

These nationwide policies aim to reallocate capital and resource to increase overall efficiency. Together, they provide a safety net to major financial institutions, which are the backbone of the economy. Monetary policy focus on inflation and employment goals and support the market with liquidity. Most financial sector industries were more or less helped by the Fed's liquidity program during the Great Recession and the current COVID-19 downturn (the Main Street Lending Program). Fiscal policy usually focuses more on short-term impact but could have larger social and economic implication. Bush administration's TARP program loaned money to big companies, including major financial companies such as Citigroup, Bank of America, Discover Financials and Capital One Financial. And in response to the current COVID-19 downturn, CARES act provides fund to all sizes of companies to support employment and maintain necessary economic activity.

- Consumer and Asset Price

Inflation in consumer price and asset price are widely used to gauge market sentiment and investor confidence. Moderate inflation will help investor build up wealth but unjustifiable inflation or Irrational exuberance, as coined by Alan Greenspan, can lead to great losses, such as the 2000 dot com bubble burst and 2007 housing market crash.

Figure 1

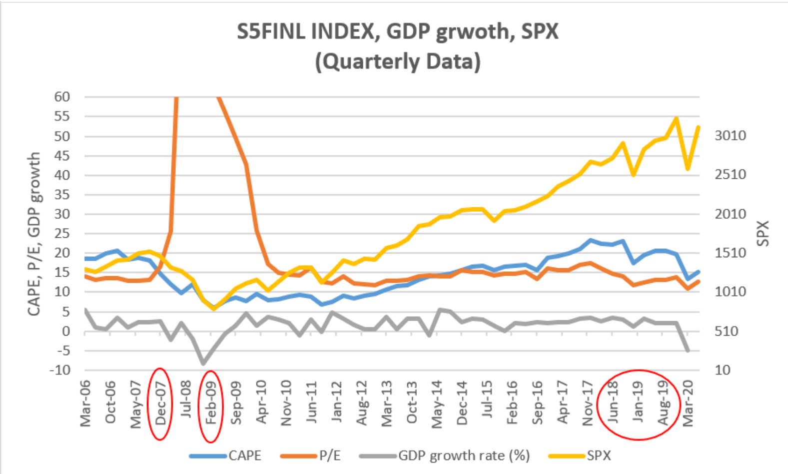


Even worse, the capital market is intertwined, crisis in one segment can spill over to other asset classes, driving up market correlation. One example of the intermarket relationship is big banks' exposure to Oil price. Figure 1 shows that the 4 big diversified banks have quite large oil-industry credit exposure relative to TCE [1]. As decreased oil demand precipitated oil price in April and May, oil companies, especially shale producers, are on the brink of default and bankruptcy. Therefore, banks need to increase loan-loss reserve, which would wipe out their profits and lower earnings. Capital One is also a lender and commodity derivative dealer to gas and energy industry and has maintained banking relationship with more than 90 companies in the oil supply chain. The company has more than tripled provision expense to cover souring loans, triggered by many factors including the drop in oil prices.

[1] TCE- Tangible Common Equity, a measure of capital that is used to evaluate financial institutions' ability to deal with potential loss, Investopedia. <https://www.investopedia.com/terms/t/tangible-common-equity.asp#:~:text=Tangible%20common%20equity%20(TCE)%20is,from%20the%20company's%20book%20value.>

An important tool to gauge asset price level is CAPE[2], or Cyclically adjusted price-to-earnings ratio. In terms of forecasting future return, it performs better than the more commonly used trailing P/E ratio because it compares the current price against inflation adjusted historical earning record and thus smooths out short-term volatility and mid-term business cycle. Figure 2 is a 20-year comparison between the CAPE ratio and P/E ratio of S&P 500 financial sectors. December 2017 is the official start of the recession based on GDP growth rate, but the shocking stock market crash was 9 months later. In 2019 Q1, S&P 500 had gone down by more than 50%, but quarterly P/E ratio was at its high level because earnings were depressed. On the other hand, the Shiller P/E was 13.3, its lowest level in decades, correctly indicating a better time to buy stocks. The CAPE demonstrated strong forecasting capability because it moves in the same direction with GDP growth rate, a lagging indicator that will not be published until 3 months later. When looking at the stable P/E ratio since 2012, it appears that the market is appropriately valued. But the surge in CAPE since 2015 indicates that compared to its historical fundamentals, the financial sector price is overinflated, especially during late 2018 and 2019.

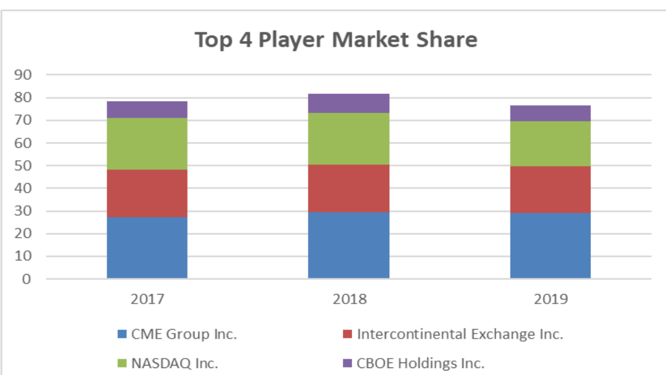
Figure 2



To prepare for crisis caused by the burst of asset bubbles, financial sector companies should have well-designed and efficiently implemented risk management plans. On one hand, they should manage to diversify their loan portfolio and create new revenue sources. On the other hand, they can utilize various hedging strategies to reduce loss severity.

Financial exchange

Figure 3



This sector has been on a consolidation spree in the last decade. Domestic exchanges merged with foreign ones to gain diversification. Small niche companies are also attractive because they offer new features. In 2019, the top 4 exchanges account for around 76.5% of industry revenue (IBIS World). The networking effect (as mentioned later in detail) would leave us only a few investable choices, which are CME Group, InternationalExchange, NASDAQ and CBOE.

To understand the competitive landscape of this niche market, it is important to examine the business model and cost structure of the industry.

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[2] The ratio was invented by American economist Robert Shiller, also known as Shiller P/E or P/E 10 ratio. It is a valuation measure usually applied to the S&P 500 equity market.
<https://wiki2.org/en/Cyclically_adjusted_price-to-earnings_ratio+Milds.5>

Figure 4

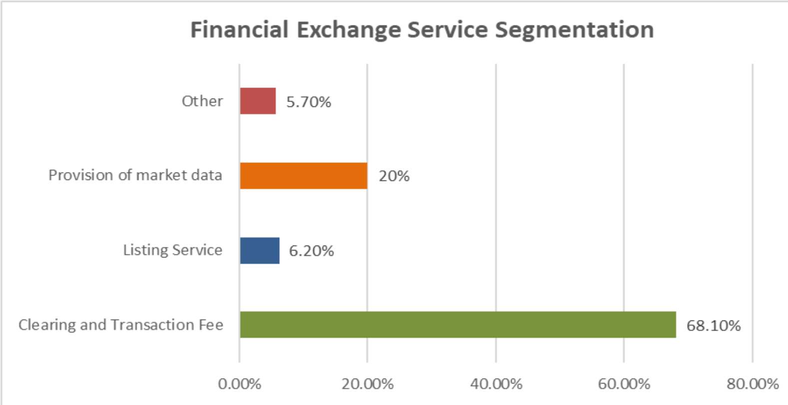
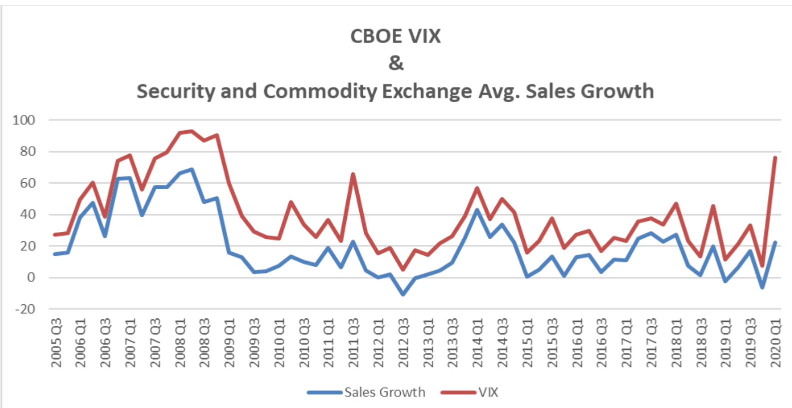


Figure 5



Exchanges generate revenues in several ways. Traditional means includes collecting listing fees. The fastest-growing segment is supplying market data to financial information providers. For example, CME entered into Joint Venture with Dow Jones in 2010 and created CME Index Service. The major revenue source is clearing and transaction fees, which accounts for 68.1% (see figure 4[3]). In 2019. CME group collects around 84 % of their revenue from clearing and transaction fee. These companies' toplines expand with increase in trading volume, which usually appears along with near-term market volatility, commonly measured by the Volatility Index/VIX (see figure 5) or changing put/call ratio.

The other import factor associated with the transaction fee is "Networking Effect"[4] - the exchange's intrinsic value to each trader grows with the total number of traders participating in the market. Essentially, liquidity in the exchange attracts more liquidity and thus more traders. However, the concentration of trading in a single market can impede market competition and increase industry barrier to entry. Thanks to the adoption of Regulation NMS[5] by SEC in 2005, most stock exchanges such as NYSE and Nasdaq ISE are now electronically interlinked and enjoys high liquidity. The commodity and future markets are under less scrutiny. DOJ has not casted doubt on any M&A deals in the past decades, including CME's $11B acquisition of NYMEX in 2008 and the $126M purchase of the Kansas City Board of Trade in 2012 or ICE's $11 billion acquisition of NYSE, including the NYSE Liffe futures exchange, in 2013. On the cost side, capital expenditure was largely spent for technology improvement and innovation as well as for acquisition. High capital intensity requires larger scale, which explains the M&A trend.

Given the cyclical nature and broad economic exposure of this niche market, the fund can celebrate for a healthy dose of volatility but should also prepare for a potential ensuing economic slowdown or recession.

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[3] Bloomberg BI Industry Data.

[4] Alexander P. Okuliar, '*Financial Exchange Consolidation and Antitrust: Is There a Need for More Intervention?*', Antitrust, Vol. 28, No. 2, Spring 2014.

[5] The intent of Regulation NMS, effective Aug.29 2005, is to promote competition, fair market pricing, and service quality in overall equity market. <https://www.sec.gov/rules/final/34-51808.pdf>

Banks and Credit Card Banks

The COVID-19 crisis poses a significant test on the banking industry, especially the banks’ operational, organizational, and business-model resilience.

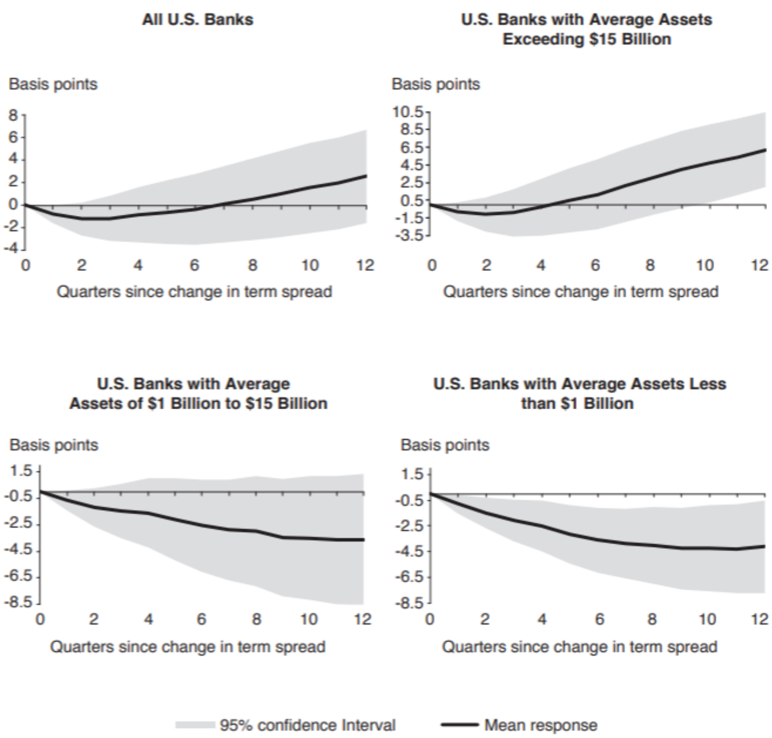
- Profit and Loss

In terms of banks' profit and loss, 3 ratios are usually kept under close watch, net interest margin (NIM), efficiency ratio and net charge off rate.

NIM is a measurement of the difference between the long-term rate charged on banks’ loan portfolio and short-term rate paid on borrowing such as deposits. Near-zero interest rates and a flattened yield curve mean diminished net interest income, deepening the revenue pressure. Median net income for regional banks across US declined 33% in the first quarter. However, the performance varies a lot with banks’ size. As figure 6[6] shows, NIM of all-sized banks shows positive correlation with yield spread in the first few months. However, spread shock to small-medium sized banks (asset less than $15 Billion) remains for the whole year or even longer, as shown in the bottom 2 charts. And big banks that have diversified business are in a better position to manage interest rate risk. The Fed has announced to maintain a target interest rate of 0-0.25% until the economy is on track to achieve maximum employment and price stability goals, a signal of prolonged low NIM.

Figure 6

NOTES: The charts show the impact on net interest margin of a one-time 100-basis-point reduction in 10 Year-3 Month Treasury Yield Spread.



Efficiency ratio measures a company's operating performance. Advertisement spending across various platform to promote brand awareness can be heavy, accounting for 15-30% of total expense. Card-banks may be able to quickly cut an average 10-15% of costs by lowering the ads fee.

Credit loss also posed great risk to banks. The FDIC said in a report released on June 16, profits across 5,116 banks slid about 70% in Q1 as they diverted profits (in billions of dollars) to loan-loss allowance. And how the provision will look like in Q2 and beyond is crucial to their bottom line in the next few periods. Net charge-off rate, unlike the loss allowance, reflects what actually happened and equals to the difference between the allowance and any subsequent recoveries. In most cases, loss provisions are in the ballpark of actual charge off. However, the current economic and political environment and the new accounting standards complicate corporates’ financial results. In estimating the provision for potential credit loss, the new accounting standard, CECL (current expected

[6] Pavel Kapinos and Alex Musatov, *Smaller Banks Less Able to Withstand Flattening Yield Curve*, Federal Reserve Bank of St. Louis FRED database.

credit loss) methodology[7], requires consideration of not only past and current condition, but also reasonable forecast that would affect expected collectability. Banks may have insight about the financial stress of their clients, but they do not have the crystal ball to predict how the economic activity and job market would be affected by the still increasing COVID-19 cases. Therefore, the judgement from the management team that goes into companies' financial reports may differs a lot from the actual condition. It is estimated that card-loan charge off rate could exceed 2008-09 peak if the unemployment rate exceeds 10% apex of that period. The probability of the worst scenario is low now, considering that the May unemployment rate has decreased to 13.3% from the April peak of 14.7%. It is worth noticing that dominating credit card banks have offered relief program to allow delayed payment in March, and the real impact of loan delinquency on net charge-off would take longer periods to materialize.

- Balance Sheet

From the perspective of balance sheet stability, the banking industry in US has gained stronger resilience since the introduction of a series of industry regulation by the 2009 Basel III international regulatory accord and the 2010 Dodd-Frank Act. The purpose of these regulation is to make sure that banks have enough capital to weather severe loan loss and sound process to survive major market shock.

The *stress test* outlaid in Dodd-Frank keeps banks' balance sheets on track by testing them with various shock scenarios. It requires commercials banks with $50 billion or more in assets to undergo sensitivity analysis with changing variables, such as an increase in interest rate or in unemployment rate. This practice intends to prepare banks for tail risks. The *Basel III standards* serves to monitor banks' leverage and reserve capital which are essential to maintaining the strength of balance sheet when faced with credit crisis. CET-1 ratio or tier 1 capital ratio is the core indicator of capital adequacy. To have enough capital is to provide protection against unexpected loss. In 2007, US banks with more than $50 billion in assets had an average CET-1 ratio of roughly 7%, which fell to about 5% by 2010[8]. By contrast, the average CET-1 ratios of US diversified banks are 10.65% in Q4, 2019 and 10.6% in Q1 2020. And for credit card banks, this ratio also increases from its pre-recession level of around 8.5% to as high as 12.55% by Q1,2020.

- Non-Financial Risks

In addition to the aforementioned traditional financial risks, notable non-financial risks related to cybersecurity breaches, consumer protection, employment scandal and regulatory reform are dominating headlines in the last few years. Since the issuance of the stay at home order, increasing demand for online and remote-working infrastructure has brought technology innovation and cybersecurity to the forefront.

New technologies, such as cloud and API allow for greater flexibility and high data management efficiency. Many banks have acquired fintech companies to support and modernize their legacy system. In 2018, Capital One bought Wikibuy and Confyrm to tackle issues around digital offering and customer identity fraud. JPMorgan's most recent buy of InstaMed and WePay is a step toward the battlegrounds of payment

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[7] [Board of Governors of the Federal Reserve System, Frequently Asked Questions on the New Accounting Standard on Financial Instruments--Credit Losses. The new rule would be effective for most SEC filers after Dec.15 2019. <https://www.federalreserve.gov/supervisionreg/topics/faq-new-accounting-standards-on-financial-instruments-credit-losses.htm>

[8] Data from McKinsey&Company report, 'Stability in the storm: US banks in the pandemic and the next normal'. <https://www.mckinsey.com/industries/financial-services/our-insights/stability-in-the-storm-us-banks-in-the-pandemic-and-the-next-normal>

processing. Decentralized block-chain technology may change the role that banks play as a middleman in the future, but at least for the next 3-5 years, banks will remain trusted custodian for customers

With the greater online engagement comes larger challenges in protecting online data. According to a recent industry survey[9], responding financial services institutions on average spend 10.1% of their IT budget on *cybersecurity*, while the numbers of data breach in the first 6 months in 2019 increased by 54% over the same period in 2018. Therefore, it is urgent for banks to put up an updated risk management framework that specifies process and governance policy across domains such as disaster recovery, change management, business continuity and cybersecurity.

In terms of financial policy, Volker Rule 2.0 and LIBOR Transition have rather profound implication. Effective January.1 2020, the *Volker Rule* revision intends to streamline the regulation on proprietary trading and relationship with covered fund through compliance simplification, additional exemption, and definition clarification. This is a good news to banking entity or nonbank financial company supervised by the Board[10] because it softens the restriction on proprietary trading activities associated with market-making, underwriting and liquidity management and makes the compliance program tailed to company of different sizes. Benchmark transition has been on the agenda since 2014, but the official final date was the end of 2021. In US, *LIBOR* would be replaced with SOFR[11], which is based on secured interbank overnight interest rate. Some regional banks argued[12] that during periods of economic stress, yield on interbank loan would decrease disproportionally relative to other market rates as investors see U.S. treasury as safe heaven. And as return on SOFR-linked loans decrease and cost of unhedged borrowed funds increase, there will be a significant mismatch between banks asset and liability, creating liquidity and solvency issues. Transition risk lies in other supporting areas, such as accounting (e.g. intangibles impairment calculation), mark-to-market valuation (financial reporting) and risk management (e.g. change in model inputs).

Insurance

The are 2 types insurance companies, one is Life Insurance and the other is Property and Casualty insurance. Stronger power from data analytics and fintech, increased frequency of 'black swans' and the growth of the ecosystem for public-private partnership provide ample opportunities for insurers.

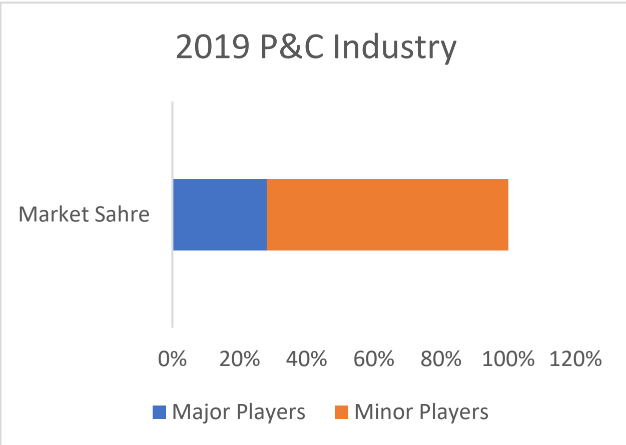
[9] A survey conducted by Deloitte & Touche LLP (in collaboration with FS-ISAC) <https://www2.deloitte.com/us/en/pages/regulatory/articles/banking-regulatory-outlook.html>

[10] Board of Governors of the Federal Reserve System

[11] Secured Overnight Financing Rate (SOFR) went live on 3 April 2019 and is administered by Federal Reserve Bank of New York

[12] Letter from regional banking organizations to vice chairman of Supervision Board of Governors of the Federal Reserve System, September 23, 2019. https://www.politico.com/f/?id=0000016d-d15d-d0d8-af6d-f77d6c5f0001

Figure 7



Though the P&C industry represent one third of premiums in the industry, it still accounts for 2.1% of global GDP in 2018, the same share as in 2008. And the growth is mainly achieved in Latin America, the Middle East, Africa and especially in Asia- Pacific market. In these developing markets, profitability is higher, but developed markets still makes up around 80% of global P&C premium (McKinsey & Company, April 2020). Concentration in this industry is low, and the top 4 players accounts for 28% of the total market (figure 7, IBIS World). Within the domestic market, competition revolves around 4 aspects, underwriting premium, new insurance product, operational efficiency and invested assets.

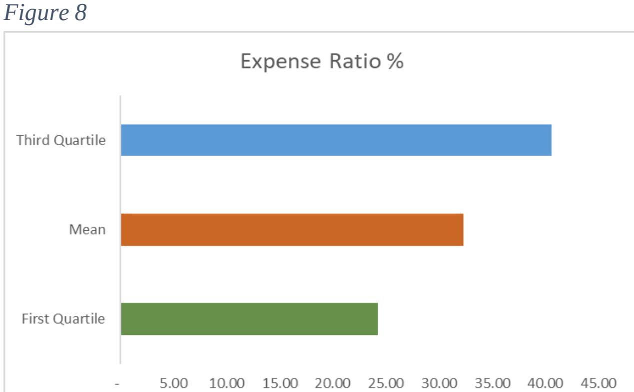
- Underwriting

Underwriting premium is a major determinant of revenue. Diversification through proper capital between personal and commercial lines is important for risk management. During the COVID-19 shock, commercial lines are under higher pressure because of travel and events cancellation while personal line is less affected. Diversification through International expansion is hard to achieve because of regulation and lack of familiarity with foreign environment. An important differentiator to help with market share growth is using data analytics to renovate customer experience based on their unique risk profiles.

- Product Innovation

This strategy requires companies to explore uncharted territory and evolving risks. Technology revolution has created new risk exposure. Increasing data breach and intellectual property infringement need new products. Though cyber liability industry is growing fast, with an annualized growth rate of 11.8% (compared to the industry average of only 3.1%) in the last 5 years, it's still a niche market and risks are largely uninsured. New social structure also brings opportunity. The change in lifestyle from ownership to rent and share calls for flexibility, such as usage-based policy (for sharing business like Airbnb) and new liability appraisal mechanism (for software errors in automated environment, such as Tesla and other AI appliance). Many companies choose to partner with big platforms where insurance is a required as part of the business and transactions. For example, Uber provides rideshare drivers with insurance products from Allstate, Liberty Mutual, Progressive and FARMERS.

Figure 8



- Expense Ratio

There has been a widening gap of expense ratio between industry leaders and laggards. The average expense ratio for companies in the third quartile is around 60% higher that of those in the top (Figure 8). Consolidation is inevitable because it brings economics of scale and thus lowers unit expense. Integration of fintech can also help companies to improve their underwriting process, which may result in not only lower expense ratio but also better customer feedback.

- Invested Asset

Insurance companies often have asset management operations that provide investment management. Redhawk fund's holding BRK is classified as a P&C company and enjoys a market share of 7.3%, next to the biggest player State Farm (10.3%). In 2019, investment and derivatives income accounts for 70% of its net earnings. The number is volatile though, ranging from 70% to -317% in the past decade, but it does have significant impact on the company's bottom line. Dodd-Frank has predominantly changed the way P&C company manages its assets. Title IV, Title V and Title VI [13] together increase the compliance burden and limit trading activities, driving up the cost associated with investment. The good side of it is the improved portfolio credit quality and higher capital adequacy ratio, which propel insurance companies to prepare more reserve for unexpected high loss from large volume of claims.

Climate Change Risk

In coming decades, climate change will have increasingly important effects on the U.S. economy. Earlier this year, in Larry Fink's[14] annual letter to CEOs, he pointed out that investors should reassess core assumptions about modern finance and anticipate to significant capital reallocation in the future. Business and financial market are inseparable and direct impact of climate change on non-financial asset owned by organizations could be transferred to indirect impact onto financial asset and the financial sector. Damage of public infrastructure or depletion of natural resource can have huge impact on business that relies on these resources. And this would probably lead to commodity price shock, huge insurance claim, bad earning performance, large bank loan loss or defaults and in the worst scenario low level of economic activity. When cost of food climbs as a result of drought and flooding, interest rate and inflation would be distorted, which would lead to further uncertainty in the whole financial market that relies on these fundamental indicators. When core risk assumption cannot be made because of an increasing frequency of big natural disasters, long-term contract and expectation would be impossible, rendering the basic PV concept useless. The good news is that ESG investing has become ever more popular among investors as well as asset managers. This would help to form a virtuous cycle as corporates would put more effort to ESG compliance. This could increase their short-term capital investment and expense, but in the long run they will benefit from lower cost of capital as their shareholders and creditors become more satisfied with their "green practice". Therefore, climate change brings with it a mandate to change investment and business mindset, which should be led by the financial sector, as the key player in global resource allocation.

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[13] Title IV of the Dodd-Frank Wall Street Reform and Consumer Protection Act makes numerous changes to the registration and reporting and recordkeeping requirements of the Investment Advisers Act of 1940. <https://www.sec.gov/spotlight/dodd-frank/hedgefundadvisers.shtml>

Title V: Subtitle A established the Federal Insurance Office within the Treasury Department to monitor the industry. Subtitle B provides that non-admitted insurance will be subject only to the statutory and regulatory requirements of the insured's home state.
<https://wiki2.org/en/Dodd%E2%80%93Frank_Wall_Street_Reform_and_Consumer_Protection_Act+Milds.5#Title_V%E2%80%94Insurance>

Title VI introduces the so-called Volcker Rule after former chairman of the Federal Reserve Paul Volcker by amending the Bank Holding Company Act of 1956. With aiming to reduce the amount of speculative investments on the balance sheets of large firms, it limits banking entities to owning no more than 3 percent in a hedge fund or private equity fund of the total ownership interest.
<https://wiki2.org/en/Dodd%E2%80%93Frank_Wall_Street_Reform_and_Consumer_Protection_Act+Milds.5#Title_IV%E2%80%94Regulation_of_Advisers_to_Hedge_Funds_and_Others>

[14] Larry Fink, Chairman and CEO of BlackRock, the largest money management firm in the world with UAM of more than $6.5 Trillion.

Summary [15]

As of today, Redhawk Fund's financial sector accounts for 4.8% the fund asset and consists of 2 stocks, CME, and BRK/B. We have 1.4% of room to buy before we reach our Spring target. And there are 2 stocks in our pipeline, COF and OMF. They both have banking, and lending service and target subprime customers. COF's revenue source is more diversified since it has credit card service. We suspend the voting process in April and are now waiting for their Q2 financial reports to get more data for further analysis. Our decision will be based on the fundamentals of these companies, namely the earning power of their business. While COVID-19's impact is short-term, we believe further research is needed to examine whether the busines is resilient and how fast they can rebound. Furthermore, we believe that COVID-19 has a profound impact on the demand-side, including consumption behavior, borrowing behavior and counterparty credit quality. COF is leading fintech and digitalization innovation and is in a better position to respond quickly to those changes.

In the Fall quarter, we may initiate a review of BRK/B. Valuation of the company will be challenging because it has business in more than 10 industries, such as insurance, energy, manufacturing, retailing, etc. Investment management industry is also a good area to explore. As mentioned in the Climate Change sector, asset management and investment company are at the frontline of ESG investing. They are also the engine of technology innovation because they facilitate fund raising, and market transactions to maintain a free/competitive market.

[15] This report is intended for internal use by Seattle University Redhawk Investment Fund.