

PORTFOLIO INVESTMENT

INTERNATIONAL UNIVERSITY
COURSE: PORTFOLIO MANAGEMENT
GROUP 2

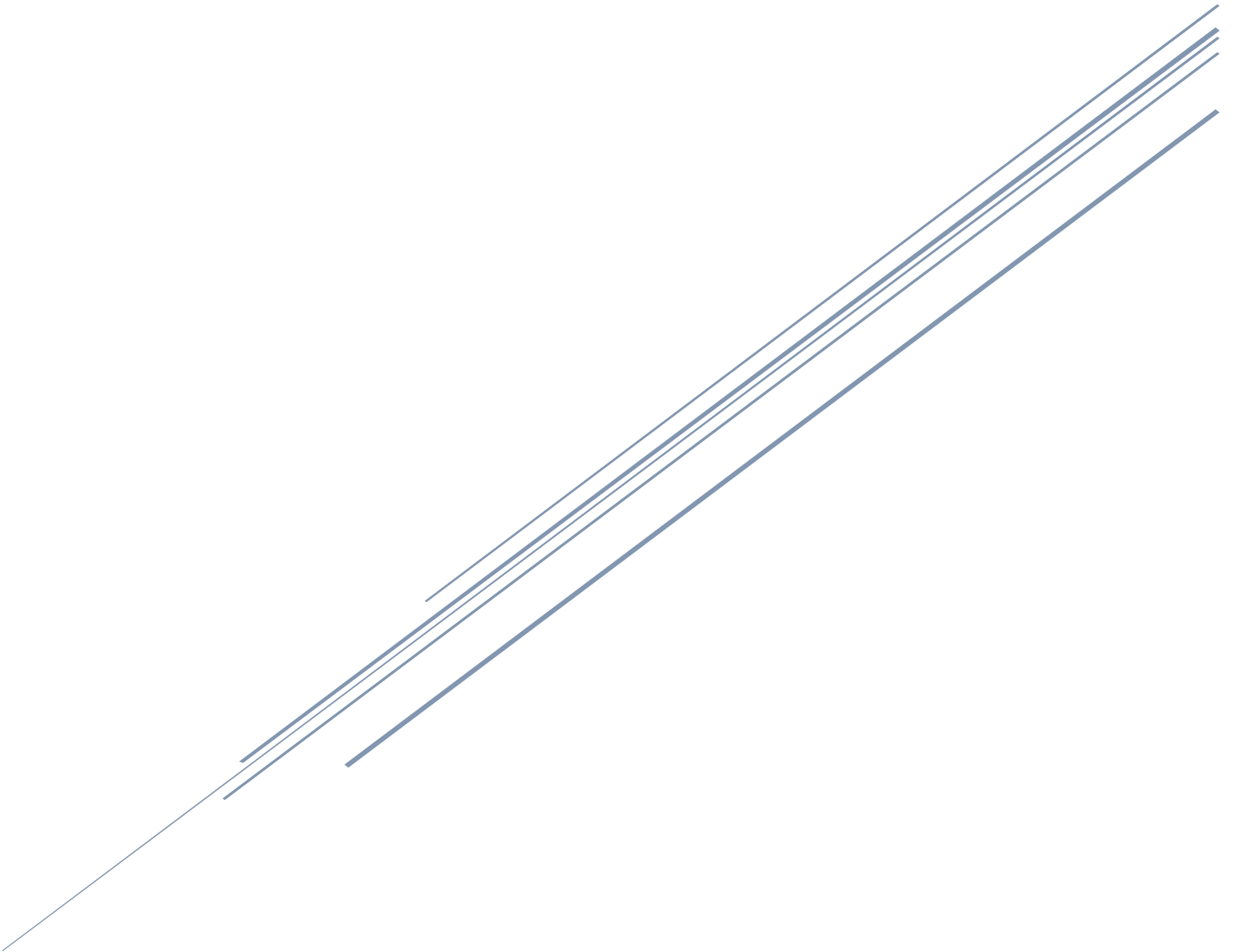


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I. Investment statement policy

Target clients: People who age from 30 to 45

Time horizon: 3 - 5 years

Investment objective:

- Primary objective: Capital appreciation
- Secondary objective: Income generation

Overall risk level: Moderate in relative to Vietnam stock market

Asset allocation: 100% invested in stocks listed on HOSE

As to obtain a high-performance portfolio, including different types of assets such as equity shares, fixed deposits, mutual funds, life insurance, cash and non-financial assets such as gold, real estate etc. The importance of diversification by grouping all types of assets plays an important role in investing portfolio since it has direct effects to the risk and return of the portfolio. Our mission is to optimize the return and minimize the risk of the portfolio by completing the following tasks:

- Make regular performance check on the investments.
- Identify the investor's objectives, constraints and preferences.
- Update market status as to keep track of the effects might have on the investments and incorporate the latest market conditions.
- Put the wealth of clients as first priority.
- Focus on the long-term results rather than short-term.

To gain the mutual understanding between portfolio managers and clients, investment policy is a must to complete this goal. The investment policy statement supports managers in having a clear look of what clients' needs, financial goals, level of risk tolerance and the level of assets to be applied in the proposal. Moreover, liquidity and the time horizon that clients want to invest in the portfolio are the others required information from clients.

Other than that, investment statement policy is a way of communication in a philosophical approach regarding investing decisions. In addition, nor this policy is a contract neither address any legal responsibilities of the advisor or the client that has been approved by an attorney. Final notice for the investment statement policy is the goals in the investment proposal prescribed which have been addressed in the investment policy statement will not be guaranteed to be achieved.

1. Investment objectives

The portfolio's main objective is to set up a method to maximize the clients' returns and minimize the risks. In general, we diversify our portfolio by selecting companies with good prospects from various industries and groups such as MidCaps and LargeCaps. On top of that, we invest in listed Vietnamese companies, especially investment of common stocks, which are the essential items

traded in the Ho Chi Minh Stock Exchange (HOSE). The risk level is moderate relative to the Vietnam stock market, and VN-Index is considered a benchmark. With a timeframe of about 3 - 5 years, the target customers have age ranging from 30 to 45 years old who are willing to take a neutral level of risk, currently have a stable job, and have a basic knowledge about the stock market. We have considered and made our requirements for risk and return as follows:

1.1. Return

Portfolio investment objectives can be summarized to two main points which are return stability and capital appreciation.

With our portfolio choice, The desired expected rate of return ranges from 15% to 30%. However, for some unexpected prospects, rate of return should not fall below the annual interest rate of the State Bank of Vietnam.

1.2. Risk

We choose target customers aged 30 to 45 years old who have been focusing on having stable careers with the long-term goals such as earning a stable income or achieving wealth. With many concerns about financial expenses, which have been the biggest concern of becoming independence, along with the desire to get rich as to have a comfortable living lifestyle, they are potential customers who are willing to take more risks. The common approach regarding to risk is knowing the portfolio's risk level as well as customers' risk tolerance. The common approach regarding to risk is to know the portfolio's risk level as well as customers' risk tolerance. For the process of controlling risk, many actions need to be taken such as identifying, assessment, measuring and managing risk within the portfolio. As a result, the level of risks accepted is moderate relative to the Vietnam stock market.

2. Constraints

2.1. Liquidity need

Contributing to investment goals that impose limits on risks and returns, investment strategies are often affected by several other constraints, and the need for liquidity is one of many considerations. Our portfolio investment is suitable for customers who have had a stable income from their current job or having a stable financial income from other sources for at least 5 years. Additionally, we target those that have long term goals such as pension fund, retirement plan or building a better future for their children by starting to invest as soon as possible. For these certain purposes, the liquidity need is not high. However, certain circumstances may happen without any preparation is what we would like to focus on since the liquidity level is high. Thus, regarding to unexpected events, near-term goals should be taken into consideration and an amount of fund

should be prepared as well. In summary, the policy statement focuses on both long-term and short-term goals as for best outcomes to happen.

2.2. Time horizon

The time horizon is set at the time frame from 3 to 5 years, which is suitable for the investors with the need for a short-term or near-term financial expense plan. With such an investment period, the level of risk tolerance is also moderate and acceptable.

2.3. Legal and regulatory issues

Vietnamese stock markets are still young to observe and control the listed firm's information, as well as lack of productivity and effective regulation. The lack of disclosure and inaccuracy of financial statistics affecting listed companies makes it difficult for investors to make the right choices. Inside-information problems also drive market unequal. Also, Vietnamese stock market investors often over-react to rumors and make fast decisions without scanning the data. Target companies in the portfolio need to be carefully filtered and selected in this sense, in addition to the preservation strategy, so that the investor has a consistent and stable portfolio.

3. Asset allocation

Portfolio output is mainly a feature of the combination of asset groups. The experience of the financial market in Vietnam illustrates that while attractive investments, such as bond portfolios, benefit from relatively stable principal prices, they are exposed to the risks of weak secondary markets. Given their vulnerability to inflation and with little prospect of real long-term capital gains, they are expected to rise in the coming years. Therefore, the portfolio does not contain any portion of the bond from a risk and returns perspective. On the other hand, equity investments such as common stocks have a slightly higher yield variation but have significantly higher projected returns. The allocation that best meets the priorities and constraints of the investor, as specified in this investment policy statement, is therefore 100% of the common stock.

In addition to a careful analysis of Vietnam's Stock Exchanges on regulations, indices, liquidity, volatility, and transparency, Vietnam Investment Fund gives priority to investing in listed shares at the Ho Chi Minh City Stock Exchange (HOSE) rather than the Hanoi Stock Exchange (HNX) and UpCom.

The table below illustrates the asset allocation in detail.

No.	Industry/Subindustry	Ticker	Market Capitalization (billion VND)	Price (07/10/2020)	Weight	Money allocation	Number of shares purchased
1	Construction and real estate/Real estate development	DIG	5,428.00	17,700.00	0.08164	16,328,172,419.76	922,496.00
2	Manufacturing/Paper Manufacturing/Converted paper product manufacturing	DHC	2,565.00	45,800.00	0.18843	37,685,939,149.55	822,837.00
3	Information and Technology/Publishing Industries (except Internet)/ Publishers	FPT	39,509.00	50,400.00	0.20886	41,772,514,107.31	828,820.00
4	Wholesale Trade/Merchant Wholesalers, Durable Goods	DGW	2,361.00	54,900.00	0.06144	12,288,985,212.05	223,843.00
5	Finance and Insurance/Credit Intermediation and Related Activities	STB	24,710.00	13,700.00	0.06357	12,714,917,518.67	928,096.00
6	Manufacturing/Fabricated Metal Product	PNJ	13,755.00	61,100.00	0.08935	17,870,643,614.18	292,482.00
7	Manufacturing/Food Manufacturing	VNM	188,069.00	108,000.00	0.30669	61,338,827,941.64	567,952.00
TOTAL			276,397.00	351,600.00	1.00	199,999,999,963	4,586,526.00

4. Management strategy

Management strategy is our responsibility to provide to clients as to ensure that strategy and operations is an effective combination for the activities of maximizing returns and minimizing risk. An effective strategic portfolio management is the one where choices about which activities should be implemented are considered carefully as well as having positive results regarding to investment portfolio.

The main goal is to increase the value of portfolio as to support clients closing the gap between them and their long-term financial goals. Through our portfolio management strategy, clients would be able to achieve their objectives along with our daily updates from regular checking activities as to keep track with any changes the portfolio might have. Our approach to management strategy consists five elements:

- Results oriented: Final results is the most important thing when it comes to investing since clients will receive their returns at the end of their investing period and the effectiveness of our strategy will be shown clearly throughout the results.
- Objective: Valuation and decision are based on practical data and evidence.
- Focused: All the information regarding to investment portfolio will be provided exactly what we have observed and the strategy will be presented to clients.
- Structured: Transparent and auditable/
- Engaging: Teamwork is the key and we will include any support that can increase the value through better decisions, alignment and commitment.
- Pragmatic: Incremental and complementary to clients information systems.

5. Monitoring and review

Monitoring and reviewing the performance of investment portfolio is a critical step towards achievement of clients' objectives. Through this step, timely accurate information will be provided as soon as possible as for clients to acknowledge the outcomes of the investment strategy.

We are responsible for any current changes of clients and markets, which are in need of continuously checks in a number of periods as to ensure the portfolio's status quo remains appropriate for the client's situation. The three concepts that are included in our progress of monitoring and reviewing investment portfolio's status:

- Yield
- Rate of return
- Capital gains and losses
- News

Our monitoring and control processes will track, review, make changes and report on the investment portfolio continuously. This step plays a vital roll in the achievement of clients' objectives since it is a common practice that portfolio's return is hardly stable but rather fluctuates through every short period of time. In other words, by keeping track of portfolio's movements by continuous monitoring, we expect to keep the investment portfolio to be on schedule. The following tasks are taken to achieve this goal:

- Make a comparison between planned performance and actual performance
- Make ongoing assessment of the portfolio's performance for and needed identification of preventive and corrective actions.
- Keep accurate, timely information based on the outcomes and documents that are related to the portfolio.
- Provide detail information including data about the changes in portfolio's status as well as evidence to support forecast and measuring progress.
- Delivering forecasts that update current costs and investment's schedule.
- Monitoring the implementation of any approved changes or schedule amendments.

6. Rebalancing

Rebalancing corresponds to the activities of taking the weights of each asset back to its original percentages. To accomplish this, some assets of the investment portfolio are sold and and other assets are bought as to restore the weighted percentages. The need for the step to be performed is critical since if there are changes in the return of portfolio that cause a rise in portfolio's risk level, the objectives may not be accomplished as clients' demand. However, the action of restoring the initial weight of the investment portfolio is not necessary in the case of stable market condition.

The unbalanced weighted portfolio or the portfolio with different weights on assets results from the different performance of assets' returns. For this event not to happen, the following steps need to be taken:

- Compare the returns with benchmark, which is the return of VNIndex.
- Adjust the weights to the initial numbers through buying and selling activities.
- Follow clients' risk tolerance level as to build appropriate weights for the portfolio.

II. Fundamental analysis

In this section, we focus on analyzing the effects of other countries have on Vietnamese economy as well as the status-quo of the sectors in our portfolio investment, which are the followings:

- Construction and real estate/Real estate development
- Manufacturing/Paper Manufacturing/Converted paper product manufacturing
- Information and Technology/Publishing Industries (expect Internet)/ Publishers
- Wholesale Trade/Merchant Wholesalers, Durable Goods
- Finance and Insurance/Credit Intermediation and Related Activities
- Manufacturing/Fabricated Metal Product
- Manufacturing/Food Manufacturing

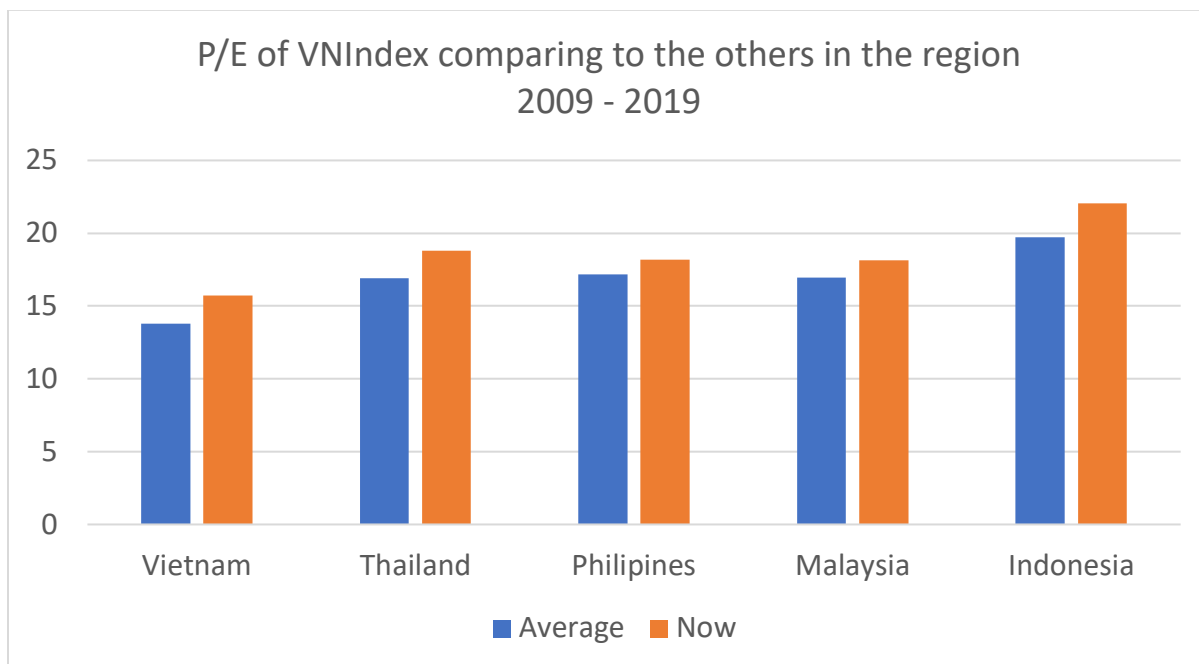
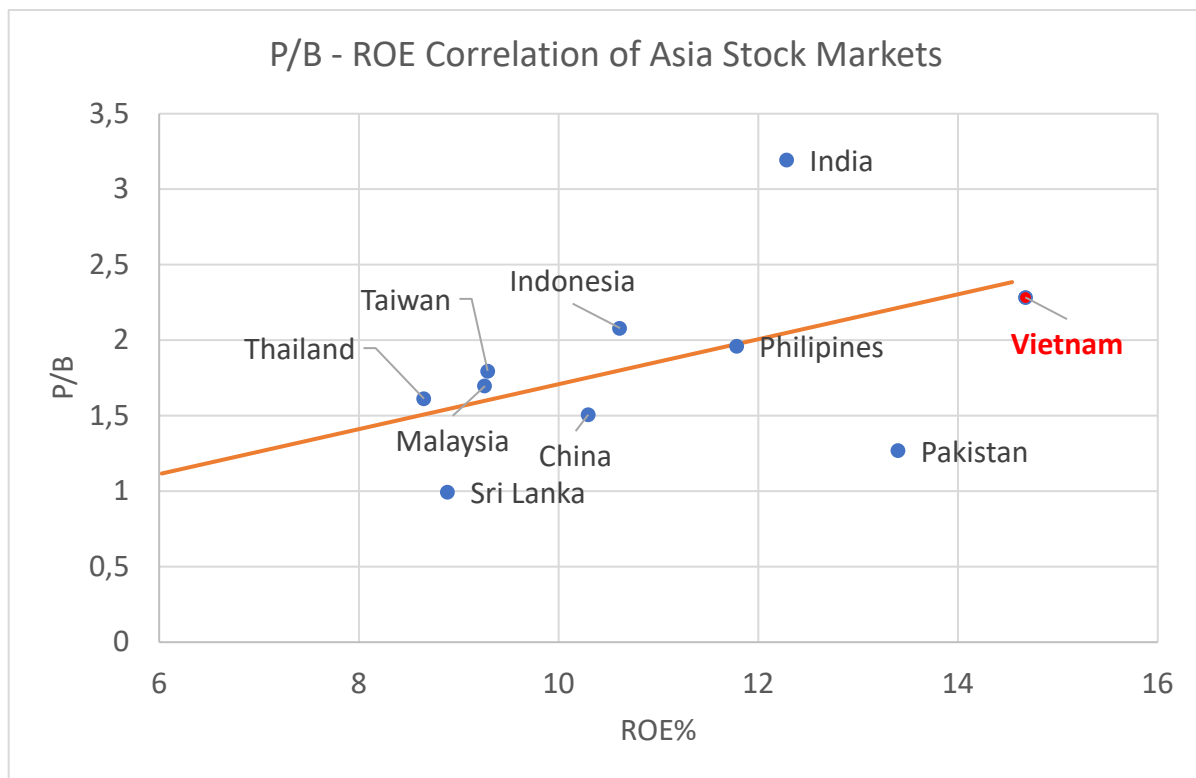
The aim is to have a better understanding of the Vietnam economy generally and what factors might have an impact on Vietnamese stock market specifically. Through this action, we expect to have more control over the volatility of portfolio's return and thus, knowing which strategy is suitable for current situation of the investment based on figures and collected data.

1. Current situation of Vietnam stock market and the expectation from investors

Vietnam stock market is expected to have many prospects and market conditions will be improved as the international context is in a positive position for the following reasons:

- The trade war has cooled down.
- Brexit expects to reach an agreement
- The global economic growth has recovered slightly with the momentum coming from emerging economies.
- Central banks continued to maintain monetary loosening policy

Although the risk still exists, the general environment will be less complex as in the period of 2018 – 2019. Investors have positive perspectives regarding to the stock market with the prediction that VNIndex will reach 1,100 (a growth of 14%) in 2020 and the cash flow will be inclined to large-cap stocks. The biggest risk factor affecting the market in 2018 - 2019, the US-China trade war, is expected to cool down as the Americans focus on the presidential election.



VNIndex is an attractive stock market in the region. The P / E of the VNIndex is still low comparing to the other stock markets in the region, in the context of Vietnam's high economic growth is in the dominant position. The P / B - ROE correlation chart indicates that the VNIndex is located at a

reasonable price range. Additionally, compared to the 10-year average, P / E of the VNIndex is at a high level, which reflects market conditions that have improved drastically over the periods before.

Profits of listed companies continue to grow, which is the most important factor supporting market volatility. With a conservative assessment, P / E of Vietnam's stock market remains unchanged compared to 2020, VNIndex is expected to grow at least 10%, corresponds to an increase in market EPS.

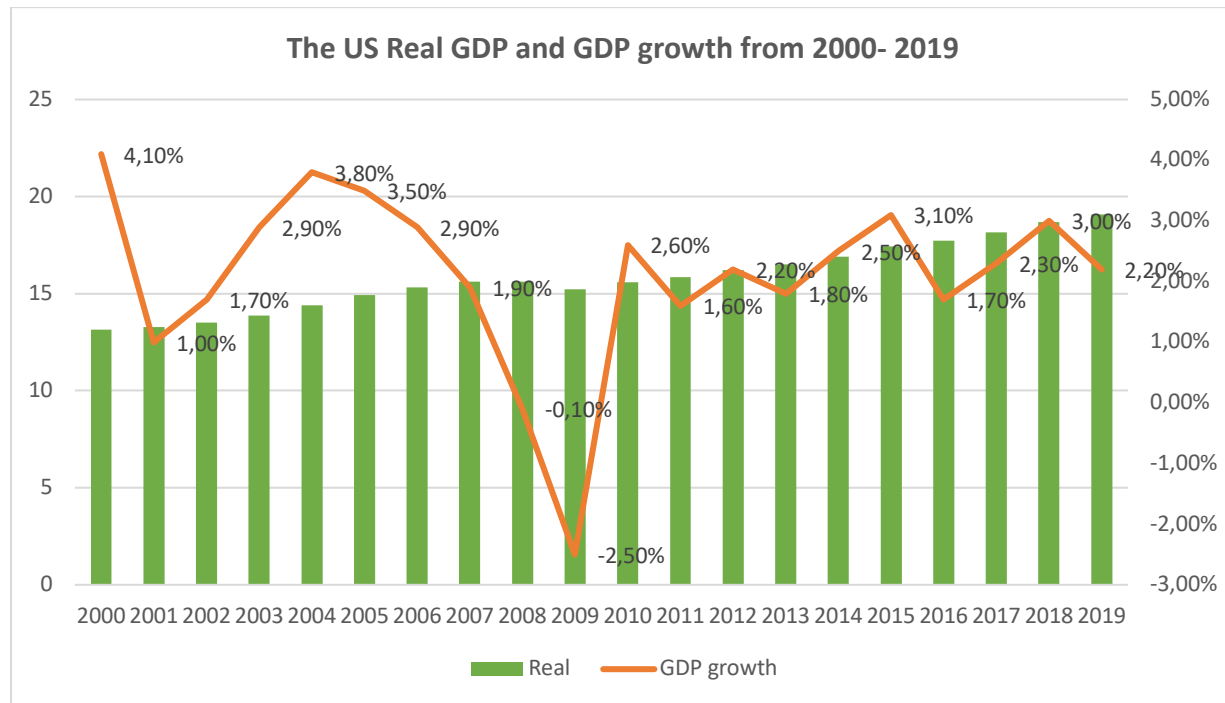
Large-cap stocks continue to be an attractive to-go-investment by high growth rates in production and business activities. In which, the following groups have been attracting attentions from potential investors as they appear in several investment strategy in 2020.

- The industry group that has long-term growth, benefiting from the current macro context such as young population structure, rising middle-class income, trend of technology application in life, as well as business activities of the enterprise. Outstanding sectors including banks, consumer goods, and information technology
- The group of enterprises has a high chance of receiving large cash flows from foreign investors thanks to the introduction of new ETFs, the deployment of NVDR (non-voting certificates) and the prospect of upgrading of Vietnam's stock market. Most of these groups of businesses are Large Cap enterprises (large capitalization), currently in the basket of Vietnam Diamond, Vietnam Financial Select and Vietnam Leading Financial ... or have the opportunity to increase their proportion in international ETFs. In the case of upgraded Vietnam's stock market.
- Stocks that had negative movements in 2019 (GAS, VNM, PVD, PVS, HPG, MSN, CTD...). However, only stocks showing the signs of returning to the uptrend in production activities will be able to maintain a sustainable recovery momentum in terms of stock prices. In this group, we prioritize enterprises in the oil and gas and raw materials industries.
- A group of defensive stocks is also a necessary choice when the market can experience strong fluctuations in the end of 2020. Investors are seeing potentials in electricity stocks (POW, PC1, REE...) in the context of a shortage of power supply, but demand remains high.
- Stocks in infrastructure construction, such as CII, FCN, HUT, IJC ... The Government is showing determination in promoting public investment in essential infrastructure projects such as North - South expressway, Sa Pha airport and thermal power projects ... Capital mobilization has been loosened as the recalculation of GDP has created space for loans, increasing public debt of the government.

2. Macro economy

The world economy has recovered gradually after the economic crisis in 2007. The US GDP increased more slowly than 10 years 2010 - 2019 (from 14,992 to 21,433 trillion USD), however, GDP growth still fluctuated from 2, 6% to 3%. The US has adjusted its interest rates higher during

the last three years 2017-2019, from 1.25% to 3%, although the growth rate is still slow. The presence of the covid-19 pandemic at the end of 2019 has caused interest rates to drop extremely quickly from 2.75% to 0.25% so far. Obviously, the Central Bank is in need for strong capital flows to encourage businesses to invest more as to recover the economy. In addition, the US 10-year bond yield also dropped sharply in this period from 2.58% in early 2018 to 0.79% in October 2020. As a result of the covid-19 epidemic, the US unemployment rate is at a very high level, especially in April 2020 at a peak of 14.7%. This number tends to decrease gradually from May 2020 until now (from 13.3% to 6.9%).



In 2019, the Vietnamese economy continues to show a strong foundation and high resilience, thanks to high domestic demand and export-oriented manufacturing. Real GDP grew by about 7% in 2019, the 2018 growth rate, being one of the countries with the highest growth rates in the region. Due to the extensive economic integration, the Vietnamese economy was heavily influenced by the COVID-19 pandemic, but also exhibited considerable resilience. The initial medical impact of the epidemic is not as serious as in many other countries, thanks to proactive countermeasures at both the central and local levels. Macro and fiscal economy is stable with GDP growth estimated at 1.8% in the first half of 2020, expected to reach 2.8% for the whole year. Vietnam is one of the few countries in the world that did not forecast an economic recession, but the expected growth this year is much lower than the pre-crisis forecast of 6-7%. The impact of the ongoing COVID-19 crisis, however, is difficult to predict, depending on the size and length of the outbreak. The pressure on public finance will increase as budget revenue decreases while budget expenditure increases as the stimulus package is activated to mitigate the impact of the pandemic on households and businesses. Vietnam is witnessing rapid changes in population and

social structure. Vietnam's population has risen to around 96.5 million by 2019 (from about 60 million in 1986) and is expected to increase to 120 million by 2050. Currently, 70% of the population is under the age of 35, with a life expectancy. The average age is nearly 76 years, higher than that of other countries with similar income in the region. But the population is aging rapidly. The middle class is forming - currently 13% of the population and expected to reach 26% by 2026.

3. Industrial analysis

3.1. Construction and real estate

Frauds, low liquidity and tightening credit will be some of the major challenges facing the Vietnamese property sector in 2020. After five years of rapid growth, it has been slowing down, with many developers reluctant to put down money because it is difficult to make profits as quickly as earlier, while buyers are waiting for prices to fall, according to analysts.

- The number of apartment transactions in key localities including Hanoi, HCMC and some coastal provinces was 26.1 percent down in 2019 to around 83,000, according to the Ministry of Construction.
- Falling supply would also be a major challenge in 2020, a trend that began at the end of 2018 and is expected to drag on until 2022, causing constant shortages in the market. According to the latest report by the Ho Chi Minh City Real Estate Association, the number of completed units in the first nine months of 2019 fell by 53 percent year-on-year to 12,453, while only 12 projects were approved, a 72 percent decline.
- For over a year banks have been wary of lending to the real estate sector, especially the high-end segment, citing concerns about bad debts, given the inherent instability and other difficulties faced by the sector.
- In the second quarter of 2019, they increased mortgage rates by 1-2 percentage points, with offered loans of no more than 70 percent of the property value instead of the previous 80-90 percent.

Some leading company in this industry: TDH, NTL, SC5, KBC, VIC, VHM

However, there is still an opportunity for this field in this period was the loosening of the law. Eliminating prequalification for land-using projects also help reduce the time and order of procedures in the process of selecting investors for the projects. The Decree also clearly defines the cases of land allocation or lease in one of three forms, including bidding for projects under the Bidding Law; auction of land use rights according to Land Law; Deciding on investment policy under the Investment Law. Moreover, there is more offer from big projects. Statistics of the Bidding newspaper show that, from the beginning of 2020 up to now, there are about 60 projects using land to be bid for investor selection and has announced the list of projects. In which, most of them

are projects in residential areas, urban areas, and houses. Many projects have a fairly large total implementation cost, such as:

- Project of commercial residential area, urban area, residential area of Cam Van new urban area, Binh Dinh province (996 billion VND)
- South Vung Tau New Urban Area Project (1,500 billion VND)
- Housing Investment Project of New Urban Area Zone 5 Ward 1, Ca Mau (VND 878 billion); Bac Cuong 1 New Urban Area Project and Bac Cuong 2 New Urban Area Project have a total cost of implementation of VND 4,200 billion
- The urban area south of Nhu Y river belongs to Zone E - An Van Duong new urban center (Thua Thien Hue) (4,500 billion VND)
- Urban North Cau River - Subdivision A Bac Kan (1,400 billion VND)

After the announcement, if nothing changes, these projects will perform investor selection steps in near future.

3.2. Manufacturing

In 2020, the start of the fourth quarter of the year saw a continuation of the recovery of the Vietnamese manufacturing sector, with the country's Manufacturing Purchasing Managers' Index (PMI) posting 51.8 in October.

- The purchasing managers index (PMI) surveys on 5 different areas production levels., new orders, supplier deliveries, inventories, employment levels.
- PMI includes questions about business conditions and any changes, whether there are any positive or negative trends.

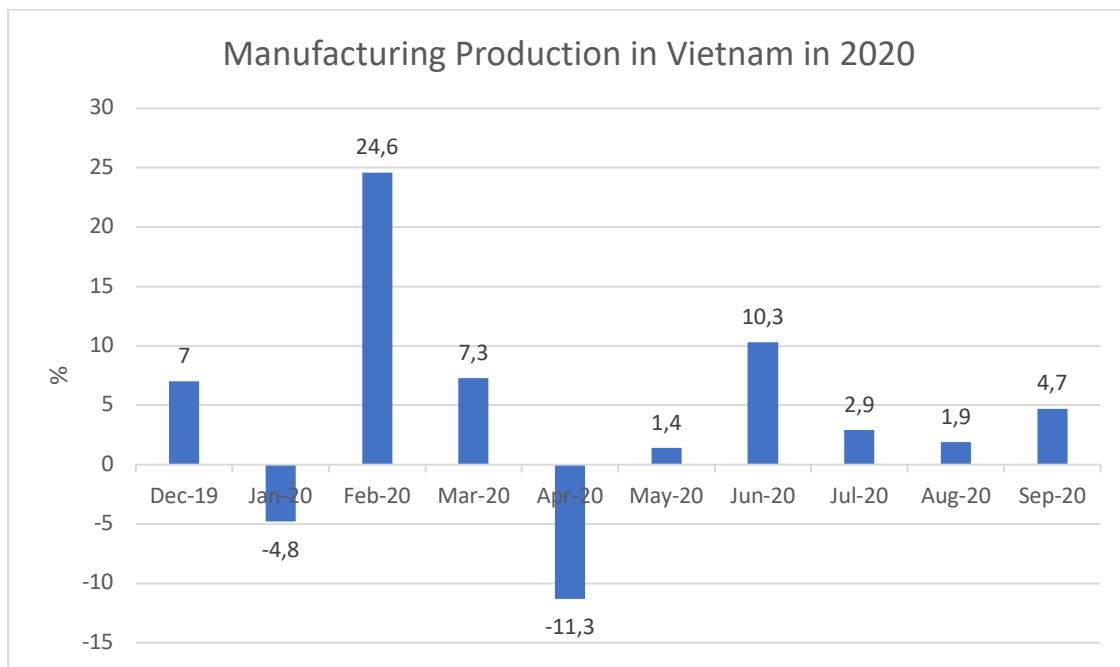
According to the survey released by Nikkei and IHS Markit on Monday, the index was down marginally from 52.2 in September but still signaling an improvement in the health of the sector. With the pandemic remaining under control in the country, firms recorded solid improvements in new orders and output. Moreover, employment returned to growth following an eight-month sequence of job cuts.

There is evidence suggested that success in bringing the COVID-19 outbreak under control in Viet Nam had helped lead to a recovery in customer demand. As a result, new orders increased solidly for the second month running, subsequently feeding through to a evenly paced increase in production to that seen for new business.

Higher output requirements also led to a second successive monthly increase in purchasing activity, although stocks of purchases decreased as inputs were used to support output growth. Stocks of finished goods were also depleted at the start of the final quarter of the year.

The COVID-19 pandemic continued to cause issues in supply chains during October. Suppliers' delivery times lengthened to a greater extent than in September. Alongside the direct impacts of the pandemic, shortages of materials and poor weather conditions reportedly contributed to delivery delays. This was the strongest increase in industrial output since June, amid intensive public health measures to contain the spread of the coronavirus outbreak in the country, with output expanding much faster for both manufacturing

Manufacturing Production in Vietnam increased 4.70 percent in September of 2020 over the same month in the previous year:



3.3. Information and technology

In August 2019, Vietnam's Information Technology (IT) industry is facing two separate waves: the first wave comes from the increasing amount of foreign investment funds into Vietnam's market, leading to a rising number of new startups; the second one is the escalating demands for human resources in Fintech-related fields such as AI, Data Science, Big Data, Cyber Security. In addition this is the mandatory tendency to Digital Transformation – every Tech company is great needs for IT human resources recruitment, which leads to the peaking demand to hire these developers. At a recent event.

In January 2020, In the last 5 years, Vietnam has been going through positive changes in digital transformation, thus moving forward into a digital economy and a digital society. Therefore, the wave of tech startups as well as startup projects from large companies, has continuously been on the rise. With the entire technology industry's substantial growth in general, it can be said that by

2020. Particularly in the Vietnam market, there are numerous small and large startups developing potential projects directly related to AI and Machine Learning, which creates an abundance of outstanding values for the technology industry as a whole.

In April 2020, the new decade opens up with a number of outstanding developments in digital technology, artificial intelligence, human resources, ... and this creates a huge competitive advantage for public sector companies. Technology in particular and other organizations / businesses in general. However, Covid-19, the “storm” that appeared over the last two months, has covered the global economy in a gloomy gray. In this certain time of the century, behind the remaining impacts of COVID-19 ripple through our communities, we are all in the wave of the biggest and opportunities in all aspects of IT industry.

Vietnam has one of the rapidly growing economies in the world and is ranked the third largest market in Southeast Asia region. Its dynamic and young population, as well as the growing consumer spending, makes the country an exciting place with abundant opportunities. This is particularly true in consumer goods retail market and wholesale business in Vietnam.

In the first 9 months of the 2020, Vietnam's GDP is estimated to increase by 2.12%. The 9-month trade balance continued to reach a trade surplus of USD 16.99 billion. Along with that, the consumer price index (CPI) increased 3.85% over the same period last year.

Due to early Covid-19 containment efforts, Vietnam is forecasted to be among the fastest growing economies in 2020 in Southeast Asia. However, the Covid-19 has made numerous irreversible impacts on the economy. Social distancing measures and a greater health-and-wellness focus have created two major changes in consumer trends: stay home, stay safe and broad-based shift towards e-commerce.

When consumer behavior shifts towards minimizing purchases in physical stores and maximizing online buying is high time for retailers re-examine consumer preferences and habits, and then re-consider their channel strategies.

3.4. Finance and insurance

In 2019, the insurance market has seen high and stable growth, contributing to building a transparent financial background as well as stabilizing the macro-economy.

Total insurance premium revenue last year hit 160.2 trillion VND, a 21 per cent year-on-year increase. Total non-life insurance premium was 52.4 trillion VND and life insurance was 107.8 trillion VND. Insurers paid 44 trillion VND. According to the report, the insurance market has seen high and stable growth, contributing to building a transparent financial background as well as stabilizing the macro-economy.

After the COVID-19, people continued to face a new concern with dengue fever and diphtheria. This makes people more interested in insurance than before, boosting life insurance. The Government's good control of the pandemic has contributed to enhancing the reputation of Viet Nam to foreign investors. The increase in investment and relocation of production facilities of multinational corporations as well as cash flow given by the Government to support economic development will create growth opportunities for many businesses and public services. This will also open up opportunities for technical property insurance.

4. Stock picking

Table 1 shows financial ratios in 2019 for the purpose of understanding the general background of those company in five industries– Construction and Real estate, Manufacturing, Information and Technology, Wholesale Trade, Finance and Insurance.

- In the Construction and Real estate, the DIG is compared to those 5 tickets having the most capital in this industry. ROA of DIG is quite medium in the general field with 6% while other are around 4% to 8%. In the opposite side, ROE of DIG is quite low with 11% as opposed to be others with around 12% to 31%. DIG has current ratio with 2.181 meaning the ability to pay short-term obligations within one year is good. In general, working capital of those companies except the VHM that is a good signal and potential for strong growth. The same point of those having high current (over 2.0) ratio is that the working capital is quite closer or higher than the long-term debt
- In the Manufacturing, those three DHC, PNJ, VNM tickets are compared to those three big capital in this field which are MSN, SHI, VHC. ROA and ROE of DHC, PNJ, VNM are high be compared to others with 16%,13%,22% and 28%,21%,35%. It seems that DHC, PNJ, VNM are using equity well. Their current ratios are at good state with the values of 1.577, 1.825, 1.712, which means they have the ability to cope with short term liabilities using only current assets. For those having working capital is positive (DHC, PNJ, VNM, SHI, VHC), only DHC, PNJ, VHC have the small difference between long-term debt and working capital meaning those three are highly to solvency but may be slowly growth in long-term.
- In the Information and Technology, FPT is higher than others in this field with 11% for ROA and 23% for ROE meaning that it has a great advantage in using base asset and equity. The current ratio of FPT is over 1 indicated that its liquidity in short-term is good at 1.18. In terms of long-term debt and working capital, the amount of difference between them is quite big, at 16,594,875 and 2,876,919, respectively. In general, it seems that FPT is a strong and potential ticket to picking.
- In Wholesale Trading, ROA and ROE of DGW is almost higher than others at 9%,21%, respectively. Moreover, 1.55 is also quite high in current ratio of DGW. Working capital in are almost positive indicating that this field is quite stable.

- In Finance and Insurance, it seems that STB is a leading company in term of ROA at 57% while ROE is medium at 10%.

	Shares Names	ROA (%)	ROE (%)	Current ratio	Long-term Debt	Working Capital
A	<i>Construction and Real estate</i>					
	1 DIG	6%	11%	2.181	4,187,782	3,861,364
	2 VIC	1%	5%	1.089	283,152,165	16,099,626
	3 VHM	11%	31%	0.115	132,525,985	-107,601,348
	4 NVL	4%	18%	3.785	65,518,169	52,385,187
	5 PDR	8%	22%	3.370	9,592,451	7,281,945
	6 KDH	5%	12%	2.696	5,572,965	7,755,342
B	<i>Manufacturing</i>					
	1 DHC	16%	28%	1.577	994,942	320351
	2 PNJ	13%	21%	1.825	4,025,699	3315503
	3 VNM	22%	36%	1.712	14,968,618	10278713
	4 MSN	2%	9%	0.796	45,408,844	-6230299
	5 VHC	11%	14%	2.688	1,735,134	2895697
	6 SHI	2%	7%	1.170	2,786,495	433,970
C	<i>Information and Technology</i>					
	1 FPT	11%	23%	1.18	16,594,875	2876919
	2 SVT	6.5%	6.5%	42.99	-	16421
	3 SED	8%	15%	1.76	184,763	140512
D	<i>Wholesale Trade</i>					
	1 DGW	9%	21%	1.550	1,480,207	811814
	2 TCH	10%	14%	2.073	3,935,644	3056925
	3 PTB	9%	21%	1.108	2,483,177	237198
	4 PET	2%	9%	1.236	3,326,017	709657
	5 SMC	3%	10%	1.040	3,743,402	147510
E	<i>Finance and Insurance</i>					
	1 STB	57%	10%	-	426,839,417	-
	3 BID	1%	11%	-	1,412,304,312	-
	4 TCB	3%	17%	-	321,626,694	-
	5 BVH	18%	3%	0.742	108,335,630	-27724356
	6 BMI	3%	9%	1.376762818	3,411,951	1285384

Table 2 provides figures of net income of 25 different firms and banks in the period of 2015 – 2019.

- In Construction and Real estate, DIG is the only firm which the smallest revenue in those 5 years and negative growth in revenue in 2019 at -13%, although the remains years are quite medium and positive. That does not mean DIG is a weak company because almost firms revenue growth plunged in 2019 (such as 152.75% down to 33.53% for VHM), which results from the trade war happening in the US.
- In manufacturing sector, DHC, PNJ, VNM experienced an increase in revenue, especially for DHC with 54.29% in 2019, along with the increase revenue in all industry.
- In the Information and Technology, changes in firm's revenue are not significant . FPT had a high negative revenue growth in 2018 because the FPT retail and Synnex FPT were not subsidiaries of FPT anymore. Thus, if we compare in the same condition, FPT's revenue growth in 2018 was 17% as opposed to 2017. Besides, although SVT is the company having the smallest revenue in this group during the 5-year period and almost its growth were high negative, there is a big change in 2019 when SVT rocketed in revenue growth at 259.22%. The reason for SVT's change because it did not have to pay any high debt in 2019 while the remain of that was high. Totally, FPT is the leading company in this field.
- In Wholesale Trading, DGW's revenue is at a medium level but has a strong increase in the 4-year period from -9.48% to 43% while the firms having bigger revenue like PET, SMC were only smaller growth value.

- In Banking and Insurance, this market tended to rise over 5 year, especially the BID having the highest revenue at 100.747 million VND in 2019. STB is the medium-revenue company in this group in the range of under 50 thousand billion VND while the revenue growth of this firm was stable and higher than the others in the range of 12% and 22.11%.

	Share Names	Net Income (million VND)				
		2019	2018	2017	2016	2015
1	DIG	2,139,479	2,459,139	1,704,138	1,314,637	692,023
2	VIC	130,161,398	121,971,751	89,392,048	57,670,387	34,054,969
3	VHM	51,626,931	38,664,328	15,297,312	11,217,376	4,920,363
4	NVL	11,026,233	15,635,304	11,759,394	7,369,463	6,692,628
5	PDR	3,410,468	2,268,747	1,542,032	1,523,980	448,650
6	KDH	2,844,774	2,920,027	3,061,084	3,938,432	1,051,920
7	DHC	1,430,031	926,844	810,793	668,122	640,067
8	PNJ	17,144,251	14,678,800	11,049,024	8,615,363	7,739,128
9	VNM	56,400,230	52,629,230	51,134,900	46,965,003	40,222,600
10	MSN	38,818,747	39,378,747	38,980,236	45,100,176	31,324,871
11	VHC	7,894,986	9,406,877	8,172,376	7,369,982	6,527,521
12	SHI	5,009,897	4,658,360	3,731,363	2,496,707	2,308,225
13	FPT	27,791,982	23,259,126	43,298,396	40,447,138	38,707,143
14	SVT	86,934	18,931	36,121	47,940	102,422
15	SED	611,106	564,031	520,473	511,787	479,319
16	DGW	8,603,203	5,998,267	3,865,385	3,843,909	4,246,390
17	TCH	1,725,004	831,265	1,947,392	1,282,670	1,144,740
18	PTB	5,549,170	4,719,065	3,971,328	3,661,513	3,045,936
19	PET	10,148,629	11,237,353	10,834,566	10,058,566	10,906,728
20	SMC	16,844,454	16,472,995	12,664,843	9,446,841	10,050,481
21	STB	30,476,971	26,295,571	21,534,204	17,868,402	15,892,850
22	BID	100,747,225	90,074,018	78,628,515	62,559,236	49,005,228
23	TCB	25,016,341	21,150,222	17,594,504	15,736,077	13,374,087
24	BVH	43,685,292	30,865,079	30,766,832	24,506,829	19,999,092
25	BMI	4559355	4183806	4171487	3652248	3334239

III. Methodology

We choose 25 stocks from the 5 industries and calculate the historical return, historical standard deviation and coefficient variation. Based on such information, we focus on stocks such that have positive return and have large market capitalization.

Table 1: List of stocks chosen

Stock	Company names	Industry	Mean return (Daily)	Standard deviation	Coefficient of variation
BID	JSC Bank For Investment And Development Of Vietnam	Finance and Insurance	0.000974718	0.023361148	23.96707784
BMI	Bao Minh Insurance Corporation	Finance and Insurance	0.000624463	0.022269822	35.66234608
BVH	Bao Viet Holdings	Finance and Insurance	-0.000471158	0.022637915	-48.04739638
DGW	Digiworld corporation	Wholesale trade	0.002052775	0.025806517	12.57152493

DHC	Dong Hai Joint Stock Company of Bentre	Manufacturing	0.001416847	0.019632127	13.85620546
DIG	Development Investment Construction JSC	Construction and Real estate	0.000995190	0.022124964	22.23189558
EID	Hanoi Education Development & Investment JSC	Information and Technology	0.000632873	0.022139251	34.98214188
FPT	FPT Corporation	Information and Technology	0.000943609	0.015934741	16.88702519
KDH	Khang Dien House Trading and Investment JSC	Construction and Real estate	0.000474357	0.01487028	31.34828538
MSN	Masan Group Corporation	Manufacturing	0.000203649	0.019348968	95.01147698
NVL	No Va Land Investment Group Corporation	Construction and Real estate	0.000456955	0.013275884	29.05293558
PDR	Phat Dat Real Estate Development Joint Stock Company	Construction and Real estate	0.001387182	0.017109959	12.3343306
PET	Petrovietnam General Services JSC Corporation	Wholesale trade	0.001387146	0.018039496	13.00476125
PNJ	Phu Nhuan Jewelry Joint Stock Company	Manufacturing	0.000141981	0.02104013	148.190005
PTB	Phu Tai Joint Stock Company	Wholesale trade	0.000277864	0.020418027	73.4820592
SED	Phuong Nam Education Investment & Development JSC	Information and Technology	0.000309757	0.024874844	80.30431629
SHI	Son Ha International JSC	Manufacturing	0.000936436	0.018289605	19.53108844
SMC	SMC Trading Investment Joint Stock Company	Wholesale trade	0.000582931	0.023908067	41.01356557
STB	Sai Gon Thuong Tin Commercial Joint Stock Bank	Finance and Insurance	0.000698636	0.021257661	30.42737979
TCB	Vietnam Technological and Commercial Joint Stock Bank	Finance and Insurance	-0.000041539	0.020054114	-482.772454

TCH	Hoang Huy Investment Financial Services JSC	Wholesale trade	-0.000102043	0.025722997	-252.0801191
VHC	Vinh Hoan Corporation	Manufacturing	0.001058345	0.024437173	23.08998618
VHM	Vinhomes JSC	Construction and Real estate	0.000052054	0.019508147	374.769746
VIC	Vingroup Joint Stock Company	Construction and Real estate	0.000226356	0.016838473	74.38944124
VNM	Viet Nam Dairy Products Joint Stock Company	Manufacturing	0.000125096	0.015909888	127.1811031

Moreover, we also based on Excel Solver as to choose a number of stocks by running on several Solvers.

- With expected return = 0.001 we have the following result:

Share names	Weights	Expected return ER	ER*W
BID	0.000000000	0.000974718	0.000000000
BMI	0.012711652	0.000624463	0.000007938
BVH	0.000000000	-0.000471158	0.000000000
CWG	0.050932899	0.00119869	0.000061053
DGW	0.054194593	0.002052775	0.000111249
DHC	0.043198573	0.001416847	0.000061206
DIG	0.049670263	0.00099519	0.000049431
FPT	0.055750024	0.000943609	0.000052606
KDH	0.055644118	0.000474357	0.000026395
MSN	0.000000000	0.000203649	0.000000000
NVL	0.149700721	0.000456955	0.000068406
PDR	0.153539995	0.001387182	0.000212988
PET	0.117375652	0.001387146	0.000162817
PNJ	0.000000000	0.000141981	0.000000000
PTB	0.000000000	0.000277864	0.000000000
SED	0.047145710	0.000309757	0.000014604
SHI	0.108252283	0.000936436	0.000101371
SMC	0.071199211	0.000582931	0.000041504
STB	0.000000000	0.000698636	0.000000000
TCB	0.000000000	-4.15395E-05	0.000000000
TCH	0.000000000	-0.000102043	0.000000000
VHC	0.025823833	0.001058345	0.000027331
VHM	0.000000000	5.20537E-05	0.000000000
VIC	0.004860470	0.000226356	0.000001100

VNM	0.000000000	0.000125096	0.000000000
SUM	1.00000	0.01591	0.00100

- With expected return equals to 0.0015:

Share names	Weights	Expected return ER	ER*W
BID	0.000000000	0.000974718	0.000000000
BMI	0.000000000	0.000624463	0.000000000
BVH	0.129732617	-0.000471158	-0.000061125
CWG	0.000000000	0.00119869	0.000000000
DGW	0.000000000	0.002052775	0.000000000
DHC	0.000000000	0.001416847	0.000000000
DIG	0.000000000	0.00099519	0.000000000
FPT	0.000000000	0.000943609	0.000000000
KDH	0.072515412	0.000474357	0.000034398
MSN	0.067361055	0.000203649	0.000013718
NVL	0.170923322	0.000456955	0.000078104
PDR	0.000000000	0.001387182	0.000000000
PET	0.000000000	0.001387146	0.000000000
PNJ	0.015564183	0.000141981	0.000002210
PTB	0.016563325	0.000277864	0.000004602
SED	0.086269279	0.000309757	0.000026723
SHI	0.000000000	0.000936436	0.000000000
SMC	0.064095183	0.000582931	0.000037363
STB	0.000000000	0.000698636	0.000000000
TCB	0.077112112	-4.15395E-05	-0.000003203
TCH	0.068302092	-0.000102043	-0.000006970
VHC	0.000000000	0.001058345	0.000000000
VHM	0.077189572	5.20537E-05	0.000004018
VIC	0.008393722	0.000226356	0.000001900
VNM	0.145978133	0.000125096	0.000018261
SUM	1.00000	0.01591	0.00015

Table 2: Estimated and required rate of return

Stock	Estimated return	Beta (120 weeks)	Est. Required rate of return	Comment
BID	0.005646948	1.58	0.008900289	Overvalued

BMI	0.005078428	0.66	0.003364594	Undervalued
BVH	0.004056425	1.29	0.005221844	Overvalued
CMG	0.005994075	0.86	0.005160188	Undervalued
DGW	0.007214079	1.02	0.007357605	Overvalued
DHC	0.005343273	0.57	0.003061893	Undervalued
DIG	0.005420183	1	0.005420183	Overvalued
FPT	0.004130557	0.97	0.004007772	Undervalued
KDH	0.003448413	0.64	0.002220571	Undervalued
MSN	0.004073442	0.93	0.003790943	Undervalued
NVL	0.003112132	0.34	0.001083033	Undervalued
PDR	0.004809173	0.49	0.002375742	Undervalued
PET	0.004995045	0.61	0.003061696	Undervalued
PNJ	0.004350007	1.21	0.005255583	Overvalued
PTB	0.00436147	0.85	0.00371291	Undervalued
SED	0.005284726	0.07	0.000405029	Undervalued
SHI	0.004594357	0.34	0.001586989	Undervalued
SMC	0.005364544	0.35	0.001902121	Undervalued
STB	0.004950168	1.2	0.005932654	Overvalued
TCB	0.003969283	1.24	0.004912854	Overvalued
TCH	0.005042556	0.77	0.003891449	Undervalued
VHC	0.00594578	0.92	0.005473136	Undervalued
VHM	0.003953683	1.05	0.00414948	Overvalued
VIC	0.00359405	0.93	0.003345108	Undervalued
VNM	0.003307074	0.75	0.00248974	Undervalued
Risk free rate	0.000037739			

This tables provides the estimated return, beta and estimated required return of the 25 stocks, the steps which have been done to obtain the table are shown as follow

- With the estimated return, we use historical data in the period of 6/5/2018 to 12/18/2020 and the result is obtained by using AVERAGE function in excel.

- With beta, we take directly from stockbiz.vn, where provides beta for each stock obtained from 120 weeks of stock returns.
- For the estimated required rate of return, CAPM is used with the following formula:

$$R_i = R_f + \beta \times (R_m - R_f)$$

Finally, after obtaining the estimated return and estimated required rate of return, we can conclude which stock is undervalued or overvalued by investors.

IV. Performance evaluation

Measuring the portfolio performance just by its return will not give the best outlook. If our portfolio return is higher than another, the implication might be that the portfolio has higher risk. Thus, as to have accurate perspectives of the investment, a comparison between the portfolio and the benchmark is a necessity.

1. Jensen measure – a measure of excess return of the portfolio over a period of time

The first method we use to evaluate our portfolio performance is Jensen method. The Jensen method has the following formula

$$R_{p,t} - R_{f,t} = \alpha_p^j + \beta_p \times (R_{m,t} - R_{f,t}) + \epsilon_{p,t}$$

$R_{p,t}$ = the realized daily return of the portfolio

$R_{m,t}$ = the realized daily return of VNIndex

$R_{f,t}$ = the daily risk-free rate of return for the time period = Vietnam 10-year government bond's return

β_p = the beta of the portfolio of investment with respect to VNIndex

By using R, we run the regression on the daily returns of the portfolio, VNIndex, Vietnam 10-year government bond in the period from 1st February 2019 to 7th October 2020.

- From the data of daily return of and the optimal weight obtained from Solver, we can calculate the portfolio's daily return.
- We calculate the market excess return and portfolio excess return by the following formulas:

$$\text{Market excess return} = R_{m,t} - R_{f,t}$$

$$\text{Portfolio excess return} = R_{p,t} - R_{f,t}$$

- Run linear regression

```
library(readr)
portre <- read_csv("C:/Users/Phuong/Desktop/Study/data for validation.csv")
view(portre)
library(tseries)
portre$Date=as.Date(portre$Date,format = '%m/%d/%Y')
marketre<- portre$`VNINDEX return`
rf<-portre$`10y Gov Bond return`
pretreturn<-portre$`Portfolio return`
emreturn<-marketre-rf
epreturn<-pretreturn-rf
portre<-cbind(portre,emreturn,epreturn)
head(portre)
reg<-lm(epreturn~emreturn)
summary(reg)
reg
```

```
> head(portre)
  Date Portfolio return VNINDEX return 10y Gov Bond return      emreturn      epreturn
1 2019-01-02    -0.001577646    -0.000885114      4.800e-05    -0.000933114    -0.001625646
2 2019-01-03    -0.016980289    -0.015172414      4.694e-05    -0.015219354    -0.017027229
3 2019-01-04     0.012241113     0.003051627      4.662e-05     0.003005007     0.012194493
4 2019-01-07     0.021967592     0.009921671      4.652e-05     0.009875151     0.021921072
5 2019-01-08    -0.003814446    -0.002472910      4.709e-05    -0.002520000    -0.003861536
6 2019-01-09     0.009420365     0.010761291      4.687e-05     0.010714421     0.009373495
```

```
> reg<-lm(epreturn~emreturn)
> summary(reg)
```

```
Call:
lm(formula = epreturn ~ emreturn)

Residuals:
    Min       1Q   Median       3Q      Max
-0.0262908 -0.0036706 -0.0001465  0.0034801  0.0244882

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.0008329   0.0003023   2.756   0.0061 **
emreturn      0.9383077   0.0262316  35.770 <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.006347 on 439 degrees of freedom
(497 observations deleted due to missingness)
Multiple R-squared:  0.7445,    Adjusted R-squared:  0.744
F-statistic: 1280 on 1 and 439 DF,  p-value: < 2.2e-16
```

We have the following result:

- $\alpha = 0.0008329$: significant at 1% (p-value=0.0061 < 1%)
- $\beta = 0.9383077$: highly significant at 0.1% (p-value = 2×10^{-16})

So our portfolio's systematic risk is less than that of the market, i.e. $\beta = 0.9383077 < 1$, which means our portfolio is not affected by macro factors as much as the whole market.

2. Diversification measure

However, the Jensen measure does not directly consider the portfolio manager's ability to diversify because it calculates risk premium in terms of systematic risk only.

$$\alpha = R_i - [R_f - \beta(R_M - R_i)]$$

where α Jensen's alpha

Therefore, the correlation between the portfolio returns and the returns for market portfolio (VN-index) is used to judge the level of diversification. A completely diversified portfolio is perfectly correlated with the fully diversified benchmark portfolio. Based on past return more than 500 days, we can easily compute and get the result of 0.9383077 which shows very high correlation with the market as a whole, or put another way, our portfolio is very well-diversified.

Another method to examine the level of diversification is using R^2 . The closer the R^2 is to 1, the more completely diversified the portfolio. Our portfolio R^2 is nearly 0.8, so we can conclude that the portfolio is fairly well-diversified.

3. Fama performance measure

Firstly, we use the Fama's net selectivity measure, which is an absolute measure of performance. The following formula is used with this approach

$$NS_{p,t} = [E_t(R_{p,t}) - R_f] - \left\{ \left(\frac{E_t(R_{m,t} - R_f)}{\hat{\sigma}_{R_m}} \right) \times \hat{\sigma}_{R_p} \right\}$$

$E_t(R_{p,t})$: daily mean return on the fund considered over period

$E_t(R_{m,t})$: daily mean return on the market portfolio considered over the period.

R_f : a proxy for the riskless rate

$\hat{\sigma}_{R_p}$: standard deviation of the fund's return over period

$\hat{\sigma}_{R_m}$: standard deviation of the market portfolio's return over period

In this method, a comparison between the extra return obtained with a specific level of risk and the extra return that the portfolio could have reached with the same amount of systematic risk is taken. When customers or investors specify their target level of risk, the risk premium can be decomposed into two parts: investor's risk and manager's risk.

- Investor's risk: The risk premium that could have been obtained if the portfolio's beta was exactly equal to the target beta.

$$RP_{Investor Risk} = \beta_T (R_M - R_f)$$

- On the other hand, if a different level of risk is taken by the manager instead of the target level, part of the risk premium derives from the extra risk that the manager takes:

$$RP_{Manger Risk} = (\beta_i - \beta_T)(R_M - R_f)$$

- Fama's Decomposition: Selectivity

The portion of the excess return that is not explained by the portfolio beta and the market risk premium:

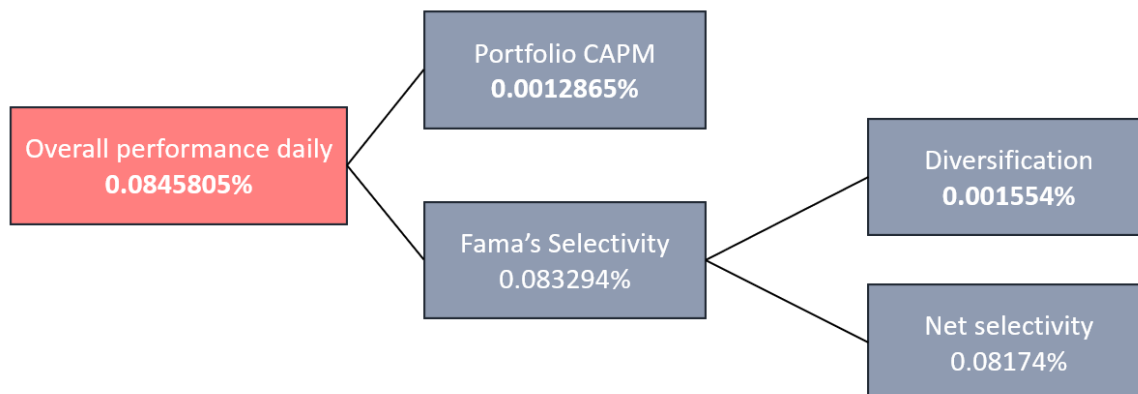
$$RP_{Selectivity} = RP_{total} - RP_{Risk} = RP_{total} - \beta_T(R_M - R_f)$$

- Fama's Decomposition: Diversification

The difference between the return that could have been obtained through Capital market line and the expected return according to Security market line.

$$RP_{Diversification} = (R_M - R_f)\left(\frac{\sigma_i}{\sigma_M} - \beta_i\right)$$

By using the formula above, the results are as follow:



With the beta we have calculated from using the data from the beginning of 2019 to October 2020, we can calculate the portfolio return using CAPM, which equals to 0.0012865%.

For the Fama's Selectivity, a combination between diversification and net selectivity where both are positive returns, 0.001554% and 0.08174% respectively. From the Fama's selectivity of 0.083294% and portfolio return using CAPM of 0.0012865%, we obtain the overall performance of the investment on a daily basis of 0.00845805%.

Through our different approach to validate our portfolio choice as well as its how well it generates return, our management team has achieved many objectives in portfolio investment.

V. Criticism

During our security analysis there may be some adverse events that affect the results.

Firstly, many firms are multi-industry is a severe problem. While picking the stock of such firms, it is a challenge since their consolidated financial statements do not really fit in any near industry category. For example, VinGroup is classified as a construction and real estate company, however, it also has many types of businesses and investments in other areas. VIC has business activities from large and small supermarket chains across the country, to open schools and hospitals and to invest in car and motorcycle manufacturing. Even in March 2020, VIC announced they would enter the pharmaceutical industry. Because of that, VIC's performance cannot be compared to other construction and real estate companies because it can make a mistake when selecting the most potential company.

Secondly, in Vietnam, we have only one benchmark that is suitable for evaluating the performance of a portfolio which is the VN-Index. However, this index is too dependent on blue-chips on the market today such as VNM, HPG, PNJ, SAB, ... When reading newspapers and learning about the Vietnamese stock market, headlines about It is normal for the VN-Index to change as it is on the blue-chips. To be more specific, the 20 blue-chips with the largest market capitalization in the market decided up to 60% of the increase or decrease of the VN Index. Therefore, using the VN-Index to evaluate our portfolio's performance will not be appropriate in some respects.

Thirdly, in Vietnam, government bond has not yet been considered as risk free rate due to inflation risk, therefore using 10 – year government bond rate divide to 365 as daily risk-free rate may not be accurate.

Finally, some firms have just been listed on HOSE so there are some limited about their stock price, which is another problem when evaluating their performance.

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