2023 Annual Letter

Yiqiao Yin

Abstract

This is the 2023 annual letter to shareholders. This year we increased our portfolio by 405%, which largely due to a 273% investment from our investors that pushed our account 2 fold. The remaining gains were from equity growth due to the rising U.S. financial market.

1   Performance

A random walk is a mathematical concept used to describe a path that consists of a succession of random steps. In finance, the random walk hypothesis is a theory that stock market prices evolve according to a random walk and thus cannot be predicted. It suggests that the future path of the price of a stock is no more predictable than the path of a series of coin flips.

The random walk can be mathematically illustrated using the concept of a stochastic process. For stock returns, this is often modeled with a geometric Brownian motion, which is a continuous-time stochastic process. The formula for a geometric Brownian motion can be expressed in differential form as follows:

$$dS_t = \mu S_t dt + \sigma S_t dW_t$$

Here we denote:

- S_t is the stock price at time t.

- dS_t is the change in stock price over an infinitesimally small time interval dt.

- μ is the drift coefficient (representing the expected return).

- σ is the volatility of the stock (standard deviation of returns).

- dW_t is a Wiener process or Brownian motion, representing the random component of stock price movements. Wiener process is $W(t) - W(0) \sim \mathcal{N}(0, t - s)$ where $0 < s < t$.

This formula essentially states that the change in the stock price over a small interval of time can be broken down into two components: 1. A deterministic component ($\mu S_t dt$), which is proportional to the stock price and the length of the time interval. 2. A stochastic or random component ($\sigma S_t dW_t$), which is also proportional to the stock price but involves a random term from the Wiener process.

In a discrete-time setting, the random walk for stock prices or returns can also be modeled more simply, where the price at time $t + 1$ is the price at time t plus a random step. This can be represented as:

$$S_{t+1} = S_t + \epsilon_t$$

Where ϵ_t is a random variable, often assumed to be normally distributed with mean 0 and some variance. This model represents the idea that future stock prices are random and unpredictable, based on past prices.

The following you will see the monthly performance of our portfolio against S&P 500 from January of 2011. I hope to convey to you though I believe the random walk model is not a bad model to start with when one wants to model the stock movement I also believe what I am doing is not strictly random due to how I manage our portfolio.

Date	Returns (0.01 as 1%):		Accumulation (from $1):	
	WYN	S&P 500	WYN	S&P 500
			$1	$1
1/3/2011	(0.35)	0.02	0.65	1.02
2/1/2011	0.24	0.03	0.81	1.06
3/1/2011	(0.02)	(0.00)	0.79	1.05
4/1/2011	0.10	0.03	0.88	1.08
5/2/2011	0.06	(0.01)	0.93	1.07
6/1/2011	(0.04)	(0.02)	0.89	1.05
7/1/2011	(0.04)	(0.02)	0.85	1.03
8/1/2011	0.05	(0.05)	0.89	0.97
9/1/2011	0.05	(0.07)	0.93	0.90
10/3/2011	0.06	0.11	0.99	1.00
11/1/2011	0.49	(0.00)	1.47	0.99
12/1/2011	(0.27)	0.00	1.08	1.00
1/3/2012	0.10	0.05	1.18	1.04
2/1/2012	0.09	0.04	1.28	1.09
3/1/2012	0.10	0.03	1.41	1.12
4/2/2012	(0.03)	(0.01)	1.36	1.11
5/1/2012	(0.01)	(0.06)	1.35	1.05
6/1/2012	0.54	0.04	2.08	1.08
7/2/2012	0.06	0.01	2.19	1.10
8/1/2012	(0.12)	0.03	1.92	1.12
9/4/2012	(0.07)	0.02	1.78	1.14
10/1/2012	0.90	(0.02)	3.39	1.12
11/1/2012	0.04	0.01	3.51	1.13
12/3/2012	(0.01)	0.00	3.49	1.13
1/2/2013	0.02	0.05	3.55	1.19
2/1/2013	0.11	0.01	3.95	1.21
3/1/2013	0.03	0.03	4.07	1.25
4/1/2013	0.02	0.02	4.17	1.27
5/1/2013	0.20	0.02	5.00	1.30
6/3/2013	0.19	(0.02)	5.96	1.28
7/1/2013	(0.04)	0.05	5.72	1.34
8/1/2013	0.06	(0.03)	6.07	1.30
9/3/2013	0.06	0.03	6.43	1.34
10/1/2013	0.06	0.05	6.82	1.40
11/1/2013	0.06	0.03	7.23	1.44
12/2/2013	0.06	0.02	7.66	1.47
1/2/2014	0.06	(0.04)	8.12	1.42
2/3/2014	0.06	0.05	8.61	1.48
3/3/2014	0.01	0.00	8.70	1.49
4/1/2014	(0.67)	0.01	2.83	1.50
5/1/2014	(0.75)	0.02	0.71	1.53
6/2/2014	4.96	0.02	4.23	1.56

Date	Returns (0.01 as 1%):		Accumulation (from $1):	
	WYN	S&P 500	WYN	S&P 500
7/1/2014	0.14	(0.01)	4.81	1.54
8/1/2014	0.04	0.04	4.98	1.60
9/2/2014	0.28	(0.02)	6.38	1.57
10/1/2014	0.01	0.02	6.47	1.60
11/3/2014	(0.20)	0.03	5.16	1.65
12/1/2014	(0.12)	(0.01)	4.52	1.63
1/2/2015	(0.34)	(0.03)	2.98	1.59
2/2/2015	(0.37)	0.06	1.88	1.68
3/2/2015	0.37	(0.02)	2.57	1.64
4/1/2015	0.27	0.01	3.26	1.66
5/1/2015	0.74	0.01	5.66	1.68
6/1/2015	(0.27)	(0.03)	4.13	1.64
7/1/2015	0.00	0.02	4.15	1.67
8/3/2015	0.12	(0.06)	4.66	1.57
9/1/2015	(0.09)	(0.03)	4.24	1.52
10/1/2015	(0.04)	0.09	4.07	1.65
11/2/2015	(0.06)	0.00	3.84	1.66
12/1/2015	(0.01)	(0.02)	3.82	1.62
1/4/2016	0.08	(0.05)	4.12	1.54
2/1/2016	(0.28)	(0.03)	2.95	1.49
3/1/2016	1.14	0.07	6.32	1.59
4/1/2016	0.23	0.03	7.76	1.65
5/1/2016	0.21	(0.00)	9.41	1.64
6/1/2016	(0.07)	0.01	8.79	1.66
7/1/2016	(0.04)	0.00	8.48	1.67
8/1/2016	0.02	0.04	8.69	1.73
9/1/2016	0.08	0.00	9.39	1.73
10/1/2016	0.06	(0.01)	9.93	1.72
11/1/2016	(0.00)	0.00	9.92	1.72
12/1/2016	(0.22)	0.02	7.72	1.75
1/1/2017	0.15	0.02	8.84	1.78
2/1/2017	(0.06)	0.02	8.33	1.82
3/1/2017	0.40	0.05	11.67	1.91
4/1/2017	(0.34)	(0.02)	7.69	1.87
5/1/2017	(0.02)	0.01	7.56	1.90
6/1/2017	(0.20)	0.01	6.07	1.92
7/1/2017	0.17	0.00	7.12	1.93
8/1/2017	0.05	0.02	7.47	1.97
9/1/2017	(0.18)	0.00	6.16	1.97
10/1/2017	(0.10)	0.01	5.53	2.00
11/1/2017	0.36	0.02	7.54	2.05
12/1/2017	0.10	0.02	8.27	2.09

Date	Returns (0.01 as 1%):		Accumulation (from $1):	
	WYN	S&P 500	WYN	S&P 500
1/1/2018	0.25	0.02	10.34	2.13
2/1/2018	0.34	0.05	13.90	2.24
3/1/2018	(0.12)	(0.04)	12.28	2.14
4/1/2018	(0.13)	(0.04)	10.74	2.05
5/1/2018	0.04	0.02	11.14	2.10
6/1/2018	0.09	0.03	12.15	2.17
7/1/2018	0.01	0.00	12.26	2.17
8/1/2018	0.02	0.03	12.54	2.24
9/1/2018	0.31	0.04	16.39	2.32
10/1/2018	0.04	(0.01)	17.11	2.30
11/1/2018	(0.08)	(0.06)	15.73	2.16
12/1/2018	0.05	0.03	16.55	2.23
1/1/2019	(0.02)	(0.11)	16.19	1.97
2/1/2019	0.16	0.09	18.80	2.15
3/1/2019	0.03	0.04	19.31	2.23
4/1/2019	0.02	0.02	19.74	2.26
5/1/2019	0.10	0.04	21.64	2.34
6/1/2019	(0.06)	(0.07)	20.32	2.19
7/1/2019	0.08	0.08	21.85	2.35
8/1/2018	0.03	(0.00)	22.59	2.34
9/1/2019	(0.02)	(0.01)	22.11	2.31
10/1/2019	(0.00)	0.01	22.02	2.33
11/1/2019	0.00	0.04	22.03	2.43
12/1/2019	0.02	0.01	22.52	2.46
1/1/2020	0.03	0.05	23.11	2.58
2/1/2020	0.02	0.01	23.56	2.62
3/1/2020	(0.00)	(0.06)	23.55	2.46
4/1/2020	0.03	(0.20)	24.24	1.96
5/1/2020	0.07	0.15	25.96	2.25
6/1/2020	0.07	0.08	27.88	2.43
7/1/2020	0.07	0.02	29.79	2.47
8/1/2020	0.06	0.06	31.56	2.61
9/1/2020	0.18	0.07	37.09	2.80
10/1/2020	(0.03)	(0.04)	36.02	2.68
11/1/2020	(0.05)	(0.03)	34.29	2.60
12/1/2020	0.14	0.12	39.16	2.91
1/1/2021	0.12	0.02	43.77	2.97

Date	Returns (0.01 as 1%):		Accumulation (from $1):	
	WYN	S&P 500	WYN	S&P 500
2/1/2021	0.08	0.01	47.27	2.99
3/1/2021	(0.02)	0.04	46.44	3.10
4/1/2021	(0.01)	0.03	46.05	3.19
5/1/2021	0.02	0.05	47.06	3.34
6/1/2021	0.04	0.01	48.82	3.36
7/1/2021	0.13	0.01	55.08	3.41
8/1/2021	(0.05)	0.03	52.55	3.50
9/1/2021	0.16	0.03	61.12	3.60
10/1/2021	(0.05)	(0.05)	58.17	3.43
11/1/2021	0.57	0.05	65.56	3.67
12/1/2021	(0.02)	(0.02)	64.15	3.58
1/1/2022	0.01	0.05	64.71	3.78
2/1/2022	(0.08)	(0.05)	59.33	3.60
3/1/2022	(0.01)	(0.06)	58.52	3.40
4/1/2022	0.06	0.06	61.93	3.60
5/1/2022	(0.22)	(0.09)	48.61	3.28
6/1/2022	(0.09)	(0.01)	44.18	3.26
7/1/2022	0.15	(0.07)	50.65	3.03
8/1/2022	(0.05)	0.08	48.11	3.27
9/1/2022	(0.11)	(0.03)	42.88	3.15
10/1/2022	0.34	(0.08)	57.51	2.92
11/1/2022	0.57	0.05	90.01	3.06
12/1/2022	(0.07)	(0.00)	83.87	3.06
1/1/2023	(0.07)	(0.06)	78.07	3.06
2/1/2023	0.85	0.05	144.69	3.22
3/1/2023	0.02	(0.02)	147.35	3.14
4/1/2023	0.04	0.03	152.83	3.25
5/1/2023	0.24	0.02	190.27	3.30
6/1/2023	0.41	0.02	268.96	3.35
7/1/2023	0.21	0.05	325.31	3.53
8/1/2023	0.17	0.03	381.82	3.63
9/1/2023	0.06	(0.01)	403.25	3.59
10/1/2023	(0.01)	(0.05)	399.23	3.40
11/1/2023	(0.09)	(0.01)	363.31	3.36
12/1/2023	0.12	0.09	406.65	3.65
1/1/2024	0.04	0.03	423.23	3.78

2 Management Discussion and Analysis

This is the annual letter for W.Y.N. Associates, LLC. We are operated in the State of New York. For the content of this letter, we refer our company as "the company" or "WYN".

2.1 Outlook

The fiscal year of 2022 has been a very volatile year. We have taken the decision to be rather patient then to execute quick orders comparing with the year before. While the fiscal year the performance has been negative, we believe this fits the argument of long term thesis of the type of portfolio we see successful in the future.

While S&P 500 ETF SPY started this year with around 476, the fiscal year of 2022 finished with a jaw-dropping 380 level, a 20% drop. While some funds see this as trading opportunity or market environment to exit, we have been slowly acquiring equity-based assets in tech sector. We have increased our portfolio by increasing our position with Tesla, our shares with Google, and we have also increased crypto-based currency such as Bitcoin.
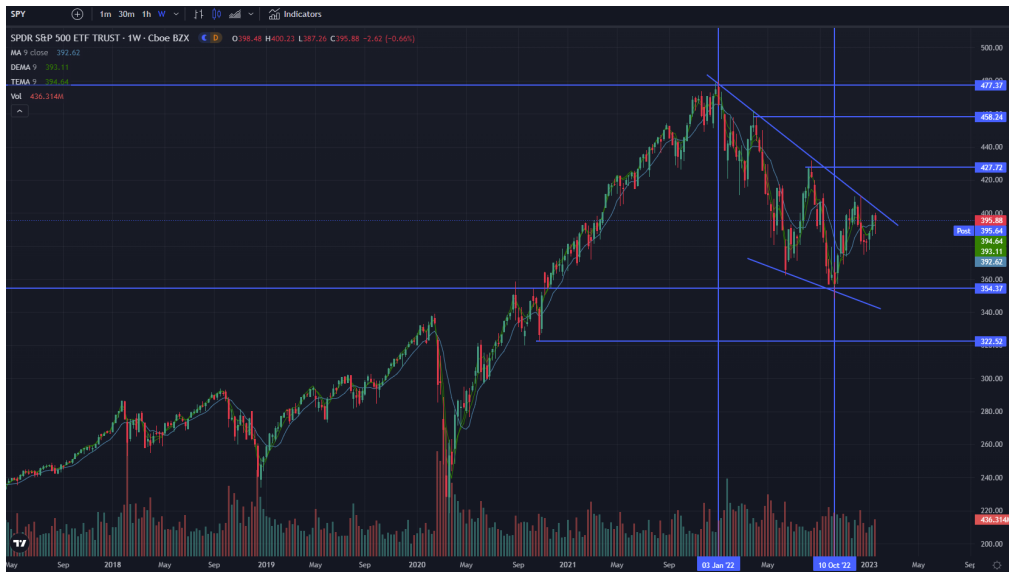
Figure 1: The S&P 500 ETF SPY in weekly candlesticks. The technical indicators such as the support and resistance lines are provided by W.Y.N..

2.2 Asset Allocation

We have major assets in four different divisions. The assets are distributed in Financing, Cryptocurrency, Equities, and Real Estates. The largest weight resides with Real Estate, at 33% of our portfolio. The next on the list equity-based holdings such as stocks, which takes about 28% of

our portfolio. We also have about 30% cash reserves and the rest are in Financing.

2.2.1 Financing

We have not made any decisions this year to participating in any financial leverages such as using margin accounts or loans. Many experts on the street have made arguments why leverage could increase the profitability. We do not see things the similar way. Financial leverage could enlarge profits at a numerical level, i.e. dollar amount. However, the risk, in percentages, result also in enlarged size where the reward might stay same percentage wise or worse. Since there is no real tangible way of increasing or even managing risk-reward ratio, we did not pursue this direction.

This is not to discourage any of my audience who are expert in this field. Though we have our analysis and we do not see an improvement in risk-reward ratio, this is not a negation of the whole field.

2.2.2 Cryptocurrency

We have been involved in cryptocurrency since the summer 2021. As observed, the current market valuation is the lower then when it was in 2020. From our analysis, the liquidation of most of the crypto-based funds are at risk and some of them have gone bankruptcy (see Reuters). We see cryptocurrency for its value according to the following pillars.

First, just like any other currency, it is a hedge against offshore risk. The same way U.S. dollars, the British pounds, and the Chinese yuan could depreciate and evaporate values from our accounts, it may be the case for cryptocurrencies as well. Whenever there is an exchange rate, that temporary transaction unforunately creates a zero-sum game. When a transaction of different currency occurs and there is some shock in the economy, there is always one person benefits and the other loses value. This is unrealized at the time and will only realize to real profits or loss when another transaction occurs. We do not intend to swap our cryptos with other accounts, at least not yet.

Second, we see a long thesis for cryptos. Just like Gold, it is another form of currency. Also like Gold, engineers and cryptographer are required to mine the cryptocurrencies. Modern day cryptography is based on prime-numbers and the ability to take a complex number to break them into a public key and a private key. Though there are infinitely many prime numbers, the ability to discover them is not infinitely and can be very costly. Hence, this creates a supply curve that cannot continue to go on to match the demand. This is a view from our analysis and we believe that the bottleneck might come sooner than later. With this vision, the current shock with the crypto-related volatility can be ignored if the horizon we are looking at is decades if not longer.

Third, we know the liquidity of cryptocurrency is not as fruitful as equities. It is easy to buy a million shares Apple stocks with very little

price slippages, but it is not easy to buy a million dollar cryptos with the same percentage of price slippages. The nature of this tape form a unique beta (a quantitative metric measuring the security price against the market benchmark) is hence enlarged with a factor of the level of the liquidity. In other words, we view the current drop in the crypto market a "norm" from what it is supposed to happen.

Figure 2: The U.S. Dollars of Bitcoin in weekly candlesticks. The technical indicators such as the support and resistance lines are provided by W.Y.N..

2.2.3 Equities

The highlight of this letter is probably this section. We have a unique way of interpreting the Chinese-America conflict. To avoid hurting the feelings of what we call "angry teens" (from Chinese culture) or "gen z who cancel others" (from American culture), let me elaborate this in terms of business practices instead of in the name of two nations.

Every country has their ways or means of making a living. In China, Deng Xiaoping started opening up the borders, led by Shenzhen and also where I was from. This reopening of China has welcomed a lot of foreign investors (America included). The intermediary components of supply chain management had its revolution across nations. Take China-America as an example. Steve Jobs had his chief engineers to design the iPhone. Then they outsource the production to a factory in China to build the iPhones by putting things together. The products get shipped by to America and sell it back to China with twice the costs. The China-America conflict started long before and it was planned down in the root since the early 90s.

Now that we understand the source of pain. Let us then take a look at did the Internet-of-Things do to this supply chain management that established the so-called peace since the early 90s. Internet-of-Things brought
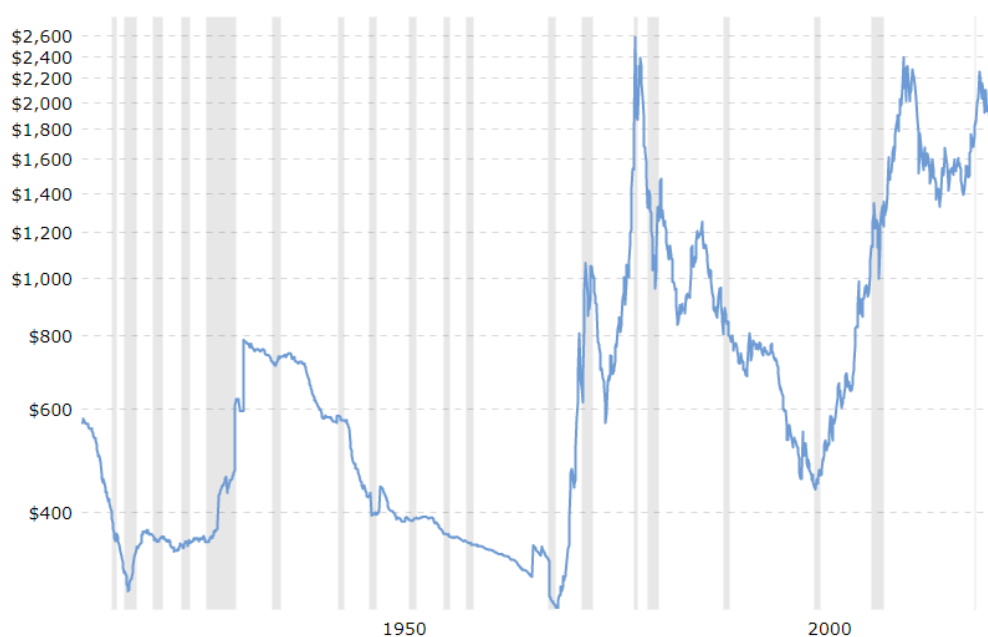
Figure 3: The historical Gold Price is presented in this figure and it dates from 1915-present.

us a whole new world where everything is digital. There are digital goods, coins, you name it. What fueled the success of Internet-of-Things is the hardware, specifically in semiconductors or computer chips. In the old days, it was IBM who claimed the title. At today's world, there are 2 very successful companies that are both registered in the United States yet with Taiwanese CEOs. They are NVidia and AMD. Both are publicly traded companies in the United States. At W.Y.N., we do not see why there has to be a fight. Yet the world leaders do not agree. Sacrifices must be made when you are a world leader and that better not be your own people. Fueled by fear from that philosophy. A fight is inevitable between China and America to compete with the domination of the Internet of Things. China decides to take Taiwan. As a reaction, America took a humanitarian channel, leveraging the mistreated Muslims in China and rallying its allies to reduce the international trades with China. Neither parties realized that the two American born Taiwanese CEOs are the best form of what both worlds can do for its people.

As a consequence, many investors pulled out of semiconductors and funds have downweighed their holdings in these two companies. NVidia has tanked from its peak at 340 dollars per share to the lowest of 140 dollars per share, a 41% drop. AMD has tanked from its peak at 164 to the lowest of 41 dollars per share, a jaw dropping 75% loss. At W.Y.N., we did not hold heavy positions, yet we actually increased holdings to these firms in Q2 and Q3.

2.2.4   Real Estate

3   Summary

This section provides my personal summary of each season.

3.1   Q1 Summary

3.1.1   Powell's Action

Powell's action on raising interest governs the theme of this fiscal season. Powell refers to Jerome Powell, who is an American central banker and the current Chair of the Federal Reserve. The US Federal Reserve raises interest rates as a way to control inflation and promote economic stability. Raising interest rates typically leads to increased borrowing costs for individuals and businesses, which can help slow down borrowing and spending and keep inflation in check. While Powell may be influential in making decisions around monetary policy, it is important to note that decision-making at the Federal Reserve is a collective effort and involves input from other members of the Federal Reserve Board of Governors and regional Federal Reserve Bank presidents.

3.1.2   Impacts of Interest Rate Rise

When the Federal Reserve raises interest rates, it can have a number of impacts on the economy:

1) Increase in borrowing costs: When the Fed raises interest rates, it increases the cost of borrowing for households and businesses. This can lead to a decrease in spending, which can slow down economic growth.

2) Increase in savings: Higher interest rates make saving more attractive, as people can earn more interest on their savings. This can lead to an increase in savings, which can help finance investment and promote economic growth in the long run.

3) Appreciation of the currency: When interest rates rise in the US, foreign investors may be more likely to invest in US assets, which increases demand for the currency and can cause it to appreciate. While this can benefit consumers by making foreign goods cheaper, it can hurt exporters who face higher prices for their goods.

4) Impact on inflation: The Fed raises interest rates when it is concerned about inflation getting too high. By raising interest rates, the Fed seeks to slow down economic growth and reduce inflationary pressures. However, if inflation is not a concern, raising interest rates can have a negative impact on the economy by slowing down growth unnecessarily.

Overall, the impact of rising interest rates on the economy will depend on a number of factors, including the current state of the economy, whether inflation is a concern, and how households and businesses respond to the change in borrowing costs.

3.1.3 Biggest Downfall

The biggest downfall of raising interest rates is that it can slow down economic growth. When interest rates increase, borrowing becomes more expensive, which means there is less demand for new loans. In turn, consumers and businesses may be less inclined to spend money, because they know that borrowing costs are high. This, in turn, can lead to lower sales for businesses, lower earnings, and ultimately, slower economic growth. Additionally, when interest rates rise, the stock market may become less attractive to investors, as stocks can be seen as riskier investments compared to other, safer options such as savings accounts or bonds.

When the economy slows down and people cannot borrow money anymore, this can lower the demand curve. When there is a decrease in demand, businesses may suffer and are forced to lay off workers, which leads to higher unemployment rates. As more people become unemployed, they have less money to spend, resulting in even lower demand for goods and services. This creates a vicious cycle that can lead to a recession. The government can use fiscal policies like lowering taxes or increasing government spending to try to stimulate the economy and reduce the severity of the recession.

3.1.4 Is there an upcoming recession?

Does this reasoning imply that a recession is coming? Not necessarily. A slowing down of economic growth and a decrease in borrowing does not always lead to a recession. There are many factors that can contribute to a recession, such as a financial crisis, geopolitical events, or natural disasters.

3.1.5 Potential Conflict

Geographically, Russia is the largest country in the world, covering 11 time zones and accounting for more than one-eighth of the world's inhabited land area. As for the natural resources, Russia has significant deposits of oil, natural gas, coal, timber and precious metals such as gold and platinum. East Siberia, which accounts for about 75% of Russia's territory, is particularly rich in mineral resources, including diamonds, gold, silver, lead, zinc, tin, tungsten, and molybdenum. Now that makes things interesting. What about neon or silicon?

According to this article[1], Ukraine supplies about 70% of the world's neon gas and 40% of the global krypton supply. Moreover, Ukraine supplies 90% of the highly purified, semiconductor-grade neon for chip production used by U.S. industry. China, Japan, and South Africa are among the other major suppliers of neon.

The ongoing conflict between China and the US is multi-faceted, but the technological race for computer chips has emerged as a crucial battleground.

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[1]See here: https://www.csis.org/blogs/perspectives-innovation/russias-invasion-ukraine-impacts-gas-markets-critical-chip-production

As computer chips become increasingly essential for global economic and military power, both countries are locked in a fierce competition to establish dominance in this arena. China has invested heavily in its own semiconductor industry and plans to surpass US-based Intel, Samsung, and TSMC by 2030. Meanwhile, the US has raised concerns over losing its position as the leading producer of computer chips, and has imposed restrictions on Chinese tech giant Huawei, among other companies. The current chip war may have long-term implications not just on the technology industry, but also on geopolitics, global trade, and national security.

3.2 Q2 Summary

3.2.1 China-US Conflict

I want to start by discussing the elevating tension between the United States and China. To understand the growing tension between the United States and China, it's important to see things from the perspective of world leaders. I have learned this from an Economist post[2] interviewing Mr. Henry Kissinger. He mentioned that many in China perceive America as a declining power, to which I (who come from China and lived in the US in the past 10 years of my life) agree on the view but disagree on the fact. I do believe it is possible that many in China view the US as a declining power, but I also think that's largely due to the Chinese media propaganda to cover the fact that China is going under a cultural revolution-like scenario. The technological innovation still resides within the walls of the United States, and with all my love to my country I have to say the political and educational environment in China does that nurture the type of innovation that we see here in the United States.

According to Mr. Kissinger, China's leadership takes issue with the Western concept of a global rules-based order, interpreting it as an imposition of American rules and American order. He suggests that China's rulers feel insulted by what they perceive as a patronizing offer from the West, which grants China privileges contingent on its compliance with these rules. In their view, as a rising power, these privileges should be theirs by right.

However, Mr. Kissinger also cautions against misunderstanding China's ambitions. He refutes the notion prevalent in Washington that China seeks world domination. Instead, he clarifies that China's goal is to become a powerful nation, not to dominate the world in the manner of Hitler. He insists that this is not how China envisions its role in the global order. In essence, Mr. Kissinger sees China as a growing power seeking respect and influence, not as a potential global dictator.

Now, that is interesting from someone who visited Chairman Mao, and he might be the only person alive today who has visited Mao. As someone who was born and raised in China, I can vouch to say that most Chinese

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[2]See here: https://www.economist.com/briefing/2023/05/17/henry-kissinger-explains-how-to-avoid-world-war-three.

people do not think like Marxists, certainly not in the ways that United States social media claims. In China, most people adopt a Confucian perspective, focusing on how to better and improve oneself rather than attack and conquer others. However, I also want to make it clear that this is from an individual's perspective. When it comes to managing an entire nation, this noble view might be twisted and shaped into something uglier.

3.2.2 Follow up with Artificial Intelligence

Artificial Intelligence (AI) is currently a hot topic, with applications such as ChatGPT demonstrating its growing capabilities. This new generation of "generative" AI tools is no longer confined to academic research or tech giants, but is becoming accessible to businesses and individuals for a wide range of activities.

ChatGPT, a conversational interface for OpenAI's GPT-3 large language model, has recently gained popularity. It responds to text prompts such as questions or instructions, generating output in various forms, including prose, poetry, and even computer code.

Another OpenAI project, Dall-E 2, has also sparked interest in generative AI. It transforms text prompts into computer graphics, including images, photos, drawings, and paintings. Stable Diffusion 2 is a similar text-to-image generative AI application, but its source code and details on its training data and algorithms are openly available to the public.

Lumen5 is an AI-powered video creation tool that allows users to easily create educational, marketing, or business video content. Soundraw is an automated music generator that creates royalty-free AI music based on user preferences. Looka uses AI to create unique logos for branding purposes.

Podcastle is an audio recording and editing platform with integrated AI tools for creating clear, professional-sounding recordings and transcripts. Gen-1 is a cloud-based text-to-video platform that creates new videos from uploaded ones or animations from storyboard mock-ups.[3]

Lalal.ai uses a neural network system to automate audio source separation, extracting elements such as vocals, music, or specific instrumental tracks from any audio or video content. Deep Nostalgia animates faces in family photos, while Murf is a text-to-speech engine that creates natural-sounding synthetic vocal recordings in multiple languages.[4]

Legal Robot translates complex legal language into straightforward terms, and "Cleanup Pictures" uses AI to retouch images by removing unwanted objects. Fireflies plugs into popular video conferencing tools to automate note-taking and transcription, and Krisp uses algorithms to remove background noises and echo from conference calls.

These applications demonstrate the diverse capabilities of AI and how it can be leveraged to revolutionize various aspects of work and daily life. It is interesting to follow these trends but it is more curious to see who

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[3]See here: https://podcastle.ai/
[4]See here: https://www.lalal.ai/

ends up rising to take majority of the market shares. The technological innovation can be duplicated easily, but a technological innovation build and designed to optimize business and profitability strategy cannot.

3.3   Q3 Summary

The U.S. economy in Q3 2023 saw a diverse pattern of growth across different sectors. Consumer spending grew by 3.6%, a downward revision, reflecting slower expansion in spending on durable goods and services. The residential investment sector marked a significant increase of 6.2%, its first growth since early 2021. Business investment saw a modest rise of 1.3%, with notable revisions in structural investments but a decrease in equipment investment. Business inventory restocking contributed notably to GDP growth. Changes in exports and imports slightly adjusted downwards resulted in a neutral impact on GDP growth from net trade. Government spending increased significantly, driven by federal and local government spending.

Despite these positive indicators, there are signs of potential economic softness. Real gross domestic income (GDI) increased by only 1.5%, suggesting that economic momentum might be weaker than reflected by GDP growth. Gross domestic output (GDO), which averages GDP and GDI, grew by 3.3%. Year-over-year, real GDP increased by 3.0%, but real GDI showed a decline.

Looking forward, the U.S. economy faces mixed prospects. The risk of recession in the coming year is estimated at around 50%. GDP growth is expected to slow, with a forecasted 1.4% growth in 2024. Inflation pressure has eased, with both headline inflation and core personal consumption expenditures inflation declining in Q3. The Federal Reserve's tightening cycle is considered complete, with no immediate plans for policy recalibration.

3.4   Q4 Summary

Wrapping up 2023, several business trends emerged that will be key to watch in 2024. These include central banks, including the Federal Reserve, likely reducing interest rates as inflation slows, though consumers will remain cautious due to still-high global inflation. Renewable energy consumption is expected to climb significantly, but fossil fuels will continue to dominate energy demand. In IT, spending will increase, with AI garnering attention but facing scrutiny over its revenue generation. The infrastructure gap globally remains large, particularly in Asia, which is focusing on expansion to address this.

The advertising industry is poised for growth, driven by events like the U.S. presidential election and the Paris Olympics. International tourism is expected to reach record revenues, fueled by post-pandemic travel desires and high prices. Health care spending will rise significantly as the global population ages. Defense spending in the U.S. will increase, particularly

to support Ukraine and counter China, with neighboring countries also boosting their defense capabilities. Electric vehicles will continue to gain market share, especially in China. Remote work trends will persist in the U.S., leading to a higher office vacancy rate compared to the EU, where employers are less inclined towards remote working arrangements.

4 Curious Case about LLMs

The future of large language models (LLMs) is intricately linked with the development of proprietary vector databases. These databases are pivotal for companies aiming to maintain the semantic integrity of their datasets. By creating a customized vector database, companies can ensure their LLMs are finely tuned to their specific data landscape, enhancing accuracy and relevancy. This approach not only preserves the unique characteristics of the company's data but also significantly boosts the efficiency and effectiveness of the LLMs in processing and understanding complex, domain-specific information. The proprietary nature of such databases adds a layer of competitive advantage, as it allows for tailored and optimized language models that can better align with a company's strategic goals and operational needs.

5 Things to Watch Out for in 2024

I have come across this Economist article[5] that did a great job covering the top ten business trends for 2024. Let me elaborate:

1. Central banks, including the Federal Reserve, are expected to reduce interest rates as inflation slows, but high global inflation will keep consumer spending cautious. Central banks reducing interest rates signals a shift in economic policy to stimulate growth, essential in a slowing inflation environment. It affects borrowing costs, impacting both businesses and consumers, and can stimulate economic activity.

2. Renewable energy consumption is projected to increase by 11%, reaching new highs, though fossil fuels will still dominate energy demand. The rise in renewable energy consumption reflects a significant shift towards sustainable energy sources. It's vital for climate change efforts and signals a growing industry, impacting job creation and technological innovation.

3. IT spending is set to rise by about 9%, with AI gaining attention but facing scrutiny over its revenue contributions. Increased IT spending, especially in AI, indicates technological advancement and digital transformation. However, the scrutiny over AI's revenue potential and ethical concerns highlights the need for balanced growth in this sector.

4. A significant infrastructure gap persists, prompting Asia to increase its investment in this area. The infrastructure gap and Asia's investment

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[5]Credits to this Economist Article.

expansion highlight the need for improved global infrastructure. This investment can drive economic growth, improve living standards, and open up new markets.

5. The advertising industry is poised for a 5% growth, spurred by major events like the U.S. presidential election and the Paris Olympics. Growth in the advertising industry, driven by significant events, reflects the sector's resilience and its importance in driving economic activity through marketing and consumer engagement.

6. International tourism is expected to achieve record revenues, driven by high prices and post-pandemic travel interest. The surge in international tourism revenue underscores the sector's recovery post-pandemic. It's crucial for global economic health, impacting a wide range of industries from travel to hospitality.

7. Health care spending will increase significantly due to an aging global population. Increased healthcare spending due to an aging population signifies a growing healthcare sector. This trend impacts labor markets, healthcare innovation, and government spending.

8. U.S. defense spending will surge, focusing on supporting Ukraine and countering China, with neighboring countries also strengthening their defenses. Increased defense spending in the U.S. and neighboring countries reflects geopolitical tensions. It influences global security, defense industries, and international relations.

9. Electric vehicle adoption accelerates, with one in four new cars being a plug-in, especially in China. The rapid adoption of electric vehicles highlights a significant shift in the automotive industry. It has implications for environmental policies, energy markets, and automotive manufacturing.

10. Remote work trends in the U.S. lead to higher office vacancy rates, contrasting with lower rates in the EU due to differing work policies. The trend of remote working in the U.S. affects real estate markets and shifts in workplace culture. It has implications for urban planning, commercial real estate, and worker productivity.

6   Final Words

Looking at the 2024 outlook, we see a landscape brimming with potential. With central banks like the Federal Reserve adjusting interest rates to stimulate growth, and significant advancements in sectors like renewable energy and IT, the economy is poised for diversification and resilience. The shift towards sustainable practices, alongside the continued evolution of industries like healthcare and electric vehicles, indicates a robust and forward-thinking market. This environment, coupled with our strategic approach, positions us well to continue outperforming the market. Your trust in our vision and strategy remains crucial as we navigate these promising opportunities in the coming year.

7 Appendix

7.1 Software

All of the functions and software required for reproducing the results are published online. Please feel free to access our software:

- access personal site https://www.y-yin.io/

- and newly released python library for AI and machine learning at https://github.com/yiqiao-yin/WYNAssociates

- a more advanced development package at https://github.com/yiqiao-yin/YinPortfolioManagement