2022 2H Investor Letter

	1Q	2Q	3Q	4Q	Full year	S&P 500 (including dividends)
2015	NA	NA	-4.42%	9.51%	4.67%	1.40%
2016	0.39%	-0.07%	1.95%	10.03%	13.87%	11.96%
2017	3.82%	5.45%	6.32%	9.75%	27.77%	21.87%
2018	-0.58%	5.08%	1.05%	-10.05%	-4.54%	-4.39%
2019	12.86%	1.36%	0.01%	10.65%	26.6%	31.49%
2020	-11.78%	15.90%	16.51%	5.85%	26.14%	16.03%
2021	3.67%	11.15%	0.71%	3.56%	20.18%	28.71%
2022	-12.32%	-25.24%	-2.90% (QTD: -2.9%) (YTD: -36.7%)	-1.23%	-37.56%	-19.3%
2023						
Total Return						
Annualized Return since Inception					8.1%	10.5%

We did a poor job in protecting investors' capital in 2022. Our portfolio declined 4.42% in the second half (2H) of 2022 and 37.6% for the full year. This compares with declines in the S&P of 19.3% and the Nasdaq of 32.9% for the full year. The majority of the loss was from the first half (1H) of the year while our portfolio performed slightly better than the Nasdaq index in the 2H/2022. Our annualized return since inception is now 8.1% compared to 10.5% versus the S&P 500.

In 2022, we underestimated the severity of inflation and the Fed's interest rate policy. Our over-concentration in tech is the primary reason for underperforming the S&P 500. More than half of our (unrealized) losses were from just three mega-cap tech companies: Amazon, AMD, and Alphabet. The positions in these stocks caused over 20% of the decline in our portfolio. Our other tech investments also suffered decline. However, our exposure to banks and Berkshire Hathaway held up relatively well compared with the broader market.

We believe the selloff in mega-tech stocks into the end of 2022 was overdone. The seven largest US tech companies in aggregate lost $5.4 trillion in value within a year. Some tech giants now have earning multiples well below market average. We believe our positions AMZN/AMD/GOOG were trading materially below their intrinsic value and we selectively added to these positions in 2H/22.

Throughout 2H/2022, we continued to execute the strategy laid out in the previous letter: owning companies with a) inflation-protected businesses; b) cheap valuation; and c) large share buy-backs. We added positions in some of our top holdings, while trimming the rest. Our top eight stocks now count for 75% of our holdings. In the meantime, we continue to hold a >10% cash position in the portfolio.

In this letter, I want to reflect on mistakes made in 2022; share our current economic outlook; and lay out our strategy going forward. In addition. I review the business progress in some of our largest positions; and share some thoughts on tech trends.

Part 1: Reflection on mistakes made in 2022, economic outlook, and future strategy.

Mistakes in 2022

As discussed in the previous letter, we made two portfolio management mistakes. The first mistake resulted in a permanent loss of capital, which was caused by our investments in several consumer-related technology companies during 2020/2021 (i.e., NFLX, PYPL, SE, and Meituan). We misjudged these companies' business fundamentals and valuation, which contributed to 8.6% of the total loss of 37.4% in 2022.

I have learned a great deal from this mistake and have taken steps to address the issue. I thought some of the "pull-forward" business demand from consumer internet companies to be permanent. We overpaid for these shares. More recently, we have been encouraged by the fact that some of these companies bounced back significantly on the back of positive business developments. As a result, we have trimmed or exited some of the positions. At the end of the first quarter (1Q) of 2023, our total "realized loss" for consumer tech count was about 3.7% of the portfolio value. Our remaining exposure to consumer technology companies counts for 4.9% of our current portfolio, compared to 8.6% at the end of 2022 and 15.6% at the end of 2021.

The second mistake, considering the new interest-rate regime, is that our portfolio was overly concentrated in mega-tech companies. There are strong price correlations among mega-tech names. Despite having different fundamentals, these companies usually fall and rise together, causing significant volatility in our portfolio. During 2022, a rapid change in the interest rate environment led to significant selling pressure for mega-tech companies. This was compounded by hedge funds using mega-cap stocks for "funding short," among other market drivers. The sell-off in mega-tech stocks has been overdone in our view. Over the long term, we remain confident that our core technology holdings will recover in value.

2022 Top Contributor	2022 Top distractor
Berkshire +0.55%	Amazon - 8.48%
	AMD - 7.38%
	Alphabet - 4.77%
	PayPal - 3.56%
	Netflix - 2.61%

Market outlook

As discussed in the last letter, three interrelated macro forces held down the market: inflation, recession, and global monetary tightening.

i. On the inflation front, there are encouraging signs of progress. Aside from volatile food and energy prices, core inflation is made up of three parts: a) core goods, b) housing, and c) core services. Core goods prices (e.g., used cars and apparel) have declined meaningfully since the Fed's monetary tightening. Housing prices are expected to drop sometime in 2023 as the housing market cools. Core services, however, have remained resilient as the labor market has stayed strong. Services price is the final leg in Fed's battle against inflation.

ii. On the economic front, business cycles have performed vastly differently to those in previous recessions. Some industries have experienced quick boom–bust cycles, while others have remained resilient. We also observed companies reducing short-term spending but not delaying long-term capital spending plans.

    Economists highlight excess consumer savings as a major reason behind distorted business cycles. Some economists predict that excess consumer savings will be depleted by the end of 2023. This would give us an undistorted view of the normalized economic environment.

    The recent collapse of Silicon Valley Bank (SVB), Signature Bank, and Silvergate also place significant pressure on US regional banks and the whole US economy. We are closely monitoring the situation. However, like all previous banking crises, the current crisis will provide attractive opportunities to invest in financials if the government responds well to the problem.

iii. The fear of global central banks tightening monetary policy is further complicating investment sentiment. Many economists were now predicting "higher for longer interest rate" and "lack of central bank stimulus" to stick with our economy at least for the next decade. As a result, risk sentiment is likely to be dramatically different to the last 40 years, a period dominated by falling long-term rates and supportive monetary policy. Famed investor Howard Marks has noted a "sea change" in investor sentiment. Investors in the next decade will probably be much more "risk adverse" than in the previous four decades.

Strategy going forward

Given all the unknown economic variables, how do we plan to manage our portfolio? We previously laid out a strategy of owning companies that were inflation-protected, valued cheaply, and held potential for large share buybacks. We expect to stick to these guidelines. Moreover, we aim to apply a few more lenses in evaluating our portfolio and buying new stocks. The following are some of our new criteria for evaluating businesses:

i. Competitive advantage to widen in the artificial intelligence era

With the breakthrough of Generative AI, which we discuss later in this letter, we think the technology world will enter a new era of growth and disruptions. Given the large concentration of technology stocks in our portfolio, we are evaluating on whether our portfolio names can widen their competitive edge rather than been disrupted.

So far, we are comfortable with the competitive position of cloud service providers; companies like AMZN and MSFT will likely capture a large share of the value chain in Generative AI thanks to their heavy capital spending across all technology stacks. In semiconductors, AMD and TSM(new holding) are likely to be beneficiaries, as companies need more advanced chips for more AI training and inference. However, even companies like Alphabet may be at risk of disruption. If our confidence in a company's long-term competitiveness decreases, we will not hesitate to trim or exit the position.

ii. Operating leverage to improve in the short term

Technology companies are currently trading at the lowest valuations for the past decade. For existing and new holdings, we prefer those with near-term operating leverage. We have already seen that investors are more likely to reward management that makes tough decisions to streamline businesses and aggressively cut costs. The share prices of Netflix and CRM have bounced back based on such drastic management actions.

iii. Opportunities outside of tech

I originally started investing as a deep-value investor. In the past, our fund made some successful investments in non-tech companies, such as Level 3, T-Mobile, and Interactive Broker. Over the last few years, our assets have become more tech concentrated. In the future, we would like to spend more time screening and updating key industry sectors outside of technology, especially financial services and industrial, where we already have some knowledge base. In addition, reading about other industries could help us better understand the rapidly changing economic landscape.

Part 2: Business update on existing and new holdings

Non-tech holdings

- ***Berkshire Hathaway***

Berkshire is the only stock in our portfolio that was up during 2022. Berkshire consists of two parts: operating businesses and investment portfolio. Berkshire's extensive collection of companies churned out $27 billion in operating earnings in 2022. In addition, Berkshire's insurance investment book generated a solid $7.7 billion in dividend and interest income in 2022. This income is expected to top $9.5 billion in 2023 as short-term rate rises. In total, Berkshire's operating businesses generate well over $35 billion annually with little earnings volatility.

On Berkshire's investment portfolio, after a few years of quiet periods, the chair and CEO Warren Buffett made a timely bet on inflation-protected assets by net investing $34 billion into several stocks, such as Chevron, Occidental, and Activision Blizzard. Furthermore, Berkshire acquired Allegany for $10 billion in 2022 and increased its ownership of Pilot Flying by an additional 41.4% for an estimated $7 billion in 2023.

Berkshire is sitting on a cash pile of $130 billion. After adding back more than $300 billion in equity investments and potentially more than a $400 billion valuation in operating businesses,

Berkshire is still trading below its intrinsic value in our view. However, we are not sitting idle on our Berkshire investment. In 2022, we trimmed some of our position in Berkshire, as we saw the potential reward for other holdings being higher.

- ***Bank of America***

We added some Bank of America (BAC) positions in the second half of 2022. Despite being a beneficiary of rate hikes, BAC's share price has been flat in the past 6 months owing to recession fears. In our view, the market is overly worried about BAC's potential credit costs under a recession scenario. BAC's loan portfolio represents the "prime part" of US consumer and commercial customers. Already factored in a mild recession in its estimates, BAC estimates its provision costs will be around $5 billion in 2023, a modest proportion of its >$35 billion plus huge pre-tax pre-provision earnings.

BAC's core strength has historically come from low funding costs, thanks to its sticky $1 trillion in consumer deposits. Despite the Fed raising its target fund rate to 4.25%, BAC chair and CEO Brian Moynihan recently commented that 56% of BAC's deposits remain in low- or no-interest checking accounts.

In 2022, BAC met new regulatory capital requirements by increasing its Common Equity Tier 1 ratio to 11.2%. In the future, BAC will return earnings to shareholders through share buy-backs. The bank repurchased $93 billion in 2017–2021, greatly enhancing shareholder value. We expect future share repurchases to exceed the previous level owing to higher earnings.

On a special note, more recently, the US banking sector has been under significant pressure owing to the rapid collapse of SVB, along with Signature bank and Silvergate. SVB's management made a basic mistake by investing too much of short-term deposits into long-term, fixed-rate debt securities. When customers move their short-term deposits to higher yield products, SVB has to liquidate a large part of its debt securities at a heavy loss to meet withdrawals. A bank run ensued. The Fed acted swift after SVB's collapse. The authority has now created an emergency fund program (Bank Term Funding Program), which allows banks to borrow funds equal to the par value of their debt securities. Such Fed support is extraordinary: had the program been in place before, SVB would not have fallen.

Regarding BAC's "unrealized loss" on debt securities, we think the bank's management has done an excellent job of hedging its "available-for-sale" (AFS) book. The recent 10K report shows that the bank has only $4.7 billion in unrealized losses out of a total $225 billion in AFS securities, largely thanks to its $22 billion in hedging gains. Some headlines and media commentary has pointed to BAC's "unrealized loss" of $109 billion on its $633 billion "held-to-maturity" (HTM) book. However, it is important to note that BAC has nearly $1 trillion of liquid assets, thereby mitigating concerns about liquidating its HTM book. Ironically, large banks, such as BAC, are gaining deposit share in the current environment owing to investor concerns about regional banks.

Technology holdings

- ***Amazon***

Amazon's share lost a whopping 49.6% in 2022. The stock is trading at its 2018 level, despite the business being more than twice bigger. Despite a fall in share price, we come into 2023 more optimistic than 2022. We were encouraged to see Amazon CEO Andy Jassy take decisive cost cuts in its money-losing businesses, such as Alexa and offline retailing. The company also purposely slows down its warehouse expansion and lets the demand meet capacity. With the cost-cutting efforts, Amazon is likelier to see its free cash flow turn positive in 2023.

Businesswise, on the eCommerce side, all signs pointed to a rebound. Amazon's 1st party eCommerce business logged flat growth in the latest quarter, given an ongoing macro challenge. However, its more profitable service business, such as third-party logistics, subscription, and advertising, showed accelerating growth.

In 4Q/22, Amazon's third-party merchants (FBA business) reaccelerate to 20% growth YoY and now account for 59% of unit volume. The newly introduced "buy with prime" will finally leverage Amazon's vast logistics networks to gain more "non-Amazon" sellers. Amazon's subscription business reaccelerated to 13% growth thanks to all-time-high prime engagements. Amazon's advertising businesses also bulked weak ad industry trends by growing revenue 23% YoY.

Like all other cloud service providers (CSP), AWS is facing a near-term growth headwind with customers reducing cloud bills in an uncertain macro environment. However, we do not think AWS's current slowdown to be a structural issue as long-term commitments from enterprise customers remain strong. Remaining obligations at AWS stands at 110 billion, up a solidly 37% from a year ago.

When it comes to AI workloads, the cost is a big concern. AWS has invested heavily to help its customer save on AI bills. AWS is the first among CSPs to design in-house training/inferencing chips, adopt a 400G DC switch, and offer an ML platform (AWS Sagemarker). AWS is playing catch up in its LLM capabilities by partnering with leading AI start-ups such as Hugging Face. So far, we do not AWS is at a disadvantage in competing in the new AI era.

Overall, Amazon's share is very cheap due to near-term business concerns. We have added to our position in Amazon, especially in the 4Q of 2022.

- ***AMD***

AMD shares also suffered a significant drop in 2022. Business sentiment is weak in the near term, as an industrial-wide PC inventory correction causes a large impact on AMD's client businesses. The company is currently shipping below consumption. AMD's major competitor Intel is also lowering its products to maintain market share, creating margin headwinds for both companies.

AMD's more significant data center and embedded businesses were doing fine. On the data center side, management expects mild cloud inventory digestion in the 1st half of 2022 and a solid

rebound in the 2nd half of 2023. In the embedded business, it is now clear that AMD's purchase of Xilinx is paying off. Xilinx grow solidly in 2022 and churn off nearly 50% margin for the company.

The market has not priced in AMD's AI opportunity. AMD is allocating more budget to beef up its AI hardware and software offerings. The company's data center GPU product Instinct MI250 has already been deployed in Microsoft Azure and multiple supercomputer centers. Management expects the upcoming Instinct MI300 to be a meaningful revenue contributor in 2024. AMD offers AI inferencing capabilities across its PC, data center, and FPGA products. Given Nvidia's dominant profitability in AI, it is in the customer's interest to have a secondary AI /GPU supplier. Even a mild share gain for AMD's AI products will vastly improve the company's financial profile.

In short, AMD's competitive strength is widening. AMD's valuation is also reasonably cheap. We expect the company to generate a well of $10 billion free cash flow by 2025, compared to its low $100 billion-plus market valuation. As a result, we aggressively added to our AMD position in 2H/2022.

- ***Alphabet***

Alphabet is fighting two headwinds simultaneously: a slowdown in advertising and cloud businesses due to macro issues and a perceived lag behind Microsoft in the AI race.

The macro headwinds will eventually pass. The more important question is whether Alphabet can win the AI race. The current market narrative of Alphabet is quite bearish. Street analysts question the future of Google's search business model for two reasons: a) advertising revenue will drop due to Microsoft Bing's competition, and b) the cost of queries will go up due to higher AI workloads costs.

We believe it is too early to draw a bear conclusion for Alphabet. Despite all the negative media comments, Google still has several inherent advantages compared to other tech giants, as follows:

i. Over the past decade, it has massed some of the best AI talent pools. The company also has the most data among all tech giants, allowing it to build the best foundational model over time. Alphabet is the leader in Multimodal AI but is a bit behind in Large Language Models (LLM).

ii. As Google gradually integrates LLM into its search engine, the incremental revenue may be substantially larger than incremental costs. Better search conversion is critical for advertisers; a slight conversion increase can result in billions of additional revenue. Conversely, model optimization and custom chips will likely decrease query costs over time.

iii. Google can also monetize AI in its other assets, such as YouTube and the cloud.

Overall, we are still confident in GOOG's capabilities to compete in AI race. Historically, the heated race among the top 2 players usually results in sizeable incremental share gains other than collateral damage (e.g., in the last decade, Google vs. Apple and Tencent vs. Alibaba). We are

closely monitoring the race and will adjust our positions based on Google's execution in the AI race.

- ***Workday***

We added to our position in WDAY in 2H/22. Workday's business is among the most resilient SaaS companies in the current tech downturn. The company grew its subscription revenue by 21.7% and 24-month backlog by 21.3% in its most recent quarter. Workday's long-time R&D investment in critical applications such as HR/Fins/Planning is finally paying off. Despite the challenging macro environment, large enterprises still urgently needed to allocate more budget to upgrade their critical back-end applications.

Workday recently announced significant management changes. Since leaving Peoplesoft in 2005 after the Oracle acquisition, David Duffield, Aneel Bhusri, and Chano Fernandez (who joined in 2014) have built Workday into one of the most reputable software companies in the world. Current Co-CEO Aneel will retire in 2024, and Carl Eschenbach will take over as sole CEO. Carl Eschenbach has been on the board of Workday since 2018. He has experience in both operating large businesses (VMware) and venture capital investing (Sequoia), where he made famous early bets in companies such as Zoom and Snowflake.

Carl has layout three goals for Workday: cross-sell more FIN/Planning solutions to existing HR customer base, expand Workday's international operation, and drive more operating leverages. Carl will also leverage his expertise in venture capital to help Workday expand more aggressively into areas such as AI. We believe Carl can take Workday to its next level. The company is on its path to $10 billion in revenue and a>25% margin in three years. The current valuation offers reasonable returns for our portfolio.

- **Other recent portfolio adjustments**

In 2023, we have used the market opportunity to exit our Netflix position and trim our CRM holdings, which have rallied significantly from their 2022 lows. We used the proceeds to increase our position in Microsoft and establish a new position in TSMC.

Part 3: Technology landscape

Until now， AI can only read/write content but not "understand" the content. Powered by sophisticated LLM, ChatGPT is the first AI application that enables machines to understand human language and produce human-like dialogues. We believe this "two-way interface," now called Generative AI, will fundamentally change how humans interact with machines. The next wave of technological innovation has started.

The mass adoption of Generative AI has already begun. ChatGPT has reached 1 billion visits in 3 months, with the adoption rate being three times faster than that of TikTok. Microsoft is working on integrating new GPT models into all its existing products and making them much easier to use. Other tech giants, such as Google and Amazon, are either busy integrating their in-house LLM

models into products or partnering with new AI start-ups to accelerate their LLM capabilities. In addition, venture capital money was pouring into AI start-ups.

For a new general-purpose technology as powerful as Generative AI, the impact on the technology landscape would be significant over time. Given our extensive exposure to the tech sector, we, as investors, must prepare. While no technology wave is the same, we can borrow a history book and make some possible predictions:

- *New technology wave always bigger than the past*

We firmly believe that each new technology wave is bigger than previous ones (Cloud>Mobile>PC). And current AI breakthroughs will be no different. *One similarity among these tech waves is that they all massively lower the cost of intelligence work.* For example, thousands of companies were developing software in the PC era. Likewise, millions of developers were making mobile applications. Now everyone can write code with simple natural language commands. OpenAI founder Sam Altman even predict the cost of developing the iPhone mobile app may drop by 100X. In addition, Generative AI is not just limited to text–related functions. For example, LLM developed specifically for biology/chemistry/physics can now be used in vertical industries, further expanding the addressable market for AI.

- *Massive share gains for top competitors*

Microsoft has effectively started an AI arm race. All tech giants were now competing to train better LLM models, build new AI supercomputers, attract top talents, and integrate AI services into existing and new products. Tencent's CEO Pony Ma once commented that hyper-competitions usually result in massive market share gains for the top two players. In contrast, many smaller players will be left behind or become collateral damage. So far, we are confident of the advantage of infrastructure players such as incumbent cloud providers. We think massive disruption will happen in the PaaS/SaaS sector.

- *Better to bet on the ARM dealer*

To "train" LLM models, companies must build AI supercomputers that require tens of thousands of GPUs, many high-speed memories, and interconnects. Even more computing power will be needed for "inference" as LLM models are put into real-world usage. Different analysts have given a wide range of estimates on incremental GPU usage, ranging from a few billion to tens of billions per year. It is way too early to draw an estimate. However, a certainty is that AI workloads will increase exponentially in the next decade. As a result, AI server penetration, which currently commands a 20% data center revenue share, will increase dramatically in this period.

Given its dominance in GPUs and AI software, Nvidia will surely capture a large share of incremental dollar amounts. Companies like AMD and TSM were also direct beneficiaries. In addition, some semi-companies will see part of businesses booming. For example, Broadcom recently projected their ethernet switch would see revenue jump from 200 million to 800 million within a year. There were many opportunities within the semiconductor industry. Quote by Warren

Buffett; "The important thing is finding wet snow and a really long hill." The semiconductor industry certainly fits the quote.

- *Non-tech sectors*

Most of the data used to train ChatGPT is public data. However, as Nvidia CEO comments, "The most valuable data in the world are proprietary. And they belong to the company." With the help of LLM models, the data inside the enterprise, whether in healthcare, financial, manufacturing or any other industries, were now monetizable. In addition to tech giants and semis, there are plenty of opportunities outside tech.

- *Stay away from speculations*

Boom and bust always happen during a new technology wave. Therefore, it is more important for us to avoid major mistakes. A lesson we learned from the pandemic is that portfolio managers should never a premium valuation on a rapidly evolving industry.

Conclusions

In 2023, the global financial market continues to experience high levels of volatility. The recent collapse of SVB has significantly impacted the US treasury market, resulting in some of the largest price swings in bond market in decades. We anticipate that this level of volatility will persist until investors have a clearer view of inflation and interest rates.

After a tough 2022, we have learned valuable lessons and are committed to becoming better investor. We remain confident about the business prospects of our equity holdings, with some already recovering in value in 2023. Market valuations for many stocks remain low, and we are actively seeking out investment opportunities that can deliver long-term value to our portfolio. We look forward to reporting back to you in 1H/23.