

2017 2H Letter :

Our gross return for 2017 is 27.8%, compared with 21.8% for S&P. Below is the result of our portfolio since inception in 3Q/2015:

	1Q	2Q	3Q	4Q	Full Year	vs	S&P 500
2015			-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%		21.84%

In the 2nd half of 2017, tech holdings, Berkshire Hathaway, and our new position in Synchrony Financial contribute majority of our gain. We sold our position in Interactive Broker and initiated several other ideas. Technology stocks now counts for 45.3% of our portfolio. As we move into 2018, most of our gain in tech will become long-term, thus we will be more flexible to trim. Cash continue to be at relatively high level in our portfolio. Our average cash position in 2017 is 22.4% and ends the year at 17%. As usual, I will discuss our existing and new holdings, and write some thoughts on technology trend.

Existing Holdings:

- Tech Holdings:

2017 is a strong year for platform companies. We are lucky to shift our positions in time from financial to tech. Our position in Amazon, Alphabet and Tencent has increased 36%, 19% and 95% from our average costs. Even with large appreciation, our core thesis of investing in tech companies that can penetrate into adjacent industries remains intact. Several “adjacent industries” that tech giants targeting are far larger than their core businesses. In the meantime, the valuation of most leading tech companies is still attractive than most market alternatives. Thus, we are not in a hurry to switch positions if we cannot find better ideas. We will discuss more thoughts on technology later in the letter. Here I will provide a few updates on where we think are the most promising adjacent opportunities for our holdings.

Amazon:

Amazon has the biggest advantage in penetrating into adjacent industries as it sits in the intersection of data and infrastructure. In retail, with the acquisition of Wholefood, Amazon is borrowing Alibaba’s playbook to expand into O2O services without a strong second competitor. In cloud business, AWS is leveraging its IAAS’s insights to expand aggressively into the lucrative database business, a traditionally hard to penetrate market dominate by incumbents such as Oracle. To the surprise of many people, Amazon has quietly build up a large ecosystem around

Alexa. Voice advertising the next natural step for Amazon. eMarketer estimates that Amazon is earning \$1.65 billion from US digital ad in 2017. We believe Amazon can at least grow its advertising revenue by 30% annually for the next 5 years. A nice bonus to offset the massive advertising spending at Amazon.

Alphabet:

Shine away from making large acquisitions like other tech giants, Alphabet is fully focused on transforming itself into a AI first company. In our view, the evolution of AI works like compounding interest – the eighth wonder of the world. Each incremental progress leads to larger and larger capabilities. The most obvious example is AlphaZero, a new version of AlphaGo, which beats all its previous generation while only taking 40 days to train from scratch. In real businesses, we are seen Alphabet's long-term bets such as self-driving cars and healthcare are getting close to take-off. In the near term, one most promising adjacent area Alphabet targeting is hardware business. By combining best-in-kind knowledge in AI chips and software, Pixel 2 has won several awards as the best smartphone for 2017. In September, Alphabet purchased HTC's smartphone division to help ramp up its production. While many supplier bottleneck remain to be tackled, Google is ready to eat Apple's lunch.

Tencent:

In the 2nd half of 2017, we are seeing Tencent successfully push into three adjacent areas: video entertainment, mini apps and eCommerce. Tencent video, now a core business for Tencent, becomes number one video platform in China and is helping Tencent becoming the largest entertainment warehouse in China. In mini apps, after a year of skeptics since its launch, it is gradually gaining attraction from tens of thousands of developers. As networks speeds increases, the function of miniapps will continue to become more powerful. We believe mini-app will become the major platform for Tencent to penetrate into all kind of different industries, which leads to the third adjacent area that Tencent is going all in - eCommerce. We are already witnessing the success of Pingduoduo, an eCommerce start-up back by Tencent that has amassed more than 200 million active users just under three years. While it is very difficult for us predict the sustainability of any single eCommerce company under Tencent's umbrella, we believe its collective retail portfolio will grab a decent share in China's more diversified eCommerce market.

A quick note on gaming, in 4th quarter, investors are getting concerned about the outlook for Tencent's gaming growth as NetEase's survival games rapidly gain popularity. The concern is quickly removed as Tencent and its partner release several hit games including "QQ speed mobile" and "MU mobile". It takes "Honor of Kings" seven months to amass 200 million downloads, one month for Netease's survival games and only two weeks for QQ speed mobile. Heading into 2018, all the top three grossing games are consistently under Tencent's platform. And gamers are anxiously waiting for the even bigger releases such as "PUBG mobile" and "DnF mobile".

- Berkshire Hathaway:

The successful passing of tax reform boosts the share price of Berkshire Hathaway by 17% in the 2nd half of the year. Lower corporate tax rate will reduce Berkshire's deferred tax liability, thus provide a boost to its book value. In the meantime, low tax rate also significantly increased the value of Berkshire's bank holdings. Analysts estimate that the book value of Berkshire will increase 13% to \$211,000 by the end of 2017. At current price (\$297,000 by year end), Berkshire is trading at 1.4X book value, a fair price in our view. Ironically, our calculation of Berkshire's intrinsic value does not get a one-time boost as to its book value, since we didn't expect Berkshire to sell its top holdings in the first place. In addition, Berkshire's cash tax rate is much lower than its stated tax rate. Going into 2018, Berkshire' earning will be more volatile as it adopts new accounting standards that reflect its unrealized gains and on losses in its investments. We will selectively add or trim Berkshire's position depend on its price. As said best by Allam Mecham from Arlington Value fund: "BRK is not a museum piece that sits in the portfolio...our position is anchored to value".

- Interactive broker & thoughts on selling stocks.

We sold our shares at Interactive Broker at an average price of \$42.3. IBKR has since quickly appreciate to \$59.2 by the end of 2017. I obviously made a mistake selling IBKR too early. We will for sure to make more investing mistakes like this going forward. Nonetheless, I want to provide my thinking on selling stocks even when we have excess cash on hand.

We usually sell our stocks under two situations: a) when we find more attractive ideas. 2) when a certain stock's mathematical expected return is negative. The second situation need more of our attention as our principle for the fund is "preservation of capital". The calculation of the expected return is done by analyzing a range of scenario of upside and downside, adjusted for probability and time duration for each. When our expected return is negative, we usually won't hesitate to sell a stock. While such approach occasionally makes us miss large gains, it also helps us avoid downside risks, so that we can concentrate energy on finding more attractive ideas. We formed this principle by learning from Warren Buffett's 1965 partnership letter on portfolio allocation. (page 91 on <https://goo.gl/qijCRx>). We believe by constantly looking at the expected return of our holdings is even important in a bull market. In the meantime, we will try our best to avoid omission mistakes.

New Holdings:

- Broadcom(AVGO):

We initiated a mid-size position at Broadcom (less than 5%) at an average price of \$254. While we have followed Broadcom for a long time, we are very late to the Broadcom party. Since

taking helm at Avago (*Renamed to Broadcom in 2016*) from 2006, Hock Tan has consolidated and created one of the largest semiconductor company in the world. More remarkably, Hock did it without much dilution to shareholder. In 2009 when Avago went public, it had a market cap of \$3.5 billion and its share count is 219 million. Today, its market capitalization has increased 33 times to \$117 billion, while its share count only increased 2.1 times to 457 million. Broadcom now assembled some of the best fabless semi franchises in the industry and are expected to generate well over \$9 billion in free cash flow in 2019 - a valuation that is attractive to us on a stand-alone base.

Broadcom has previously paid very low tax because a) it is incorporated in Singapore that offer large tax holidays, b) its amortization of intangibles reduces stated income. By the end of fiscal 2017, Broadcom's intangibles stand at \$10.1 billion, which \$9.5B of it will be utilized in the next 5 years. As Broadcom moves its headquarter back to US and its free cash flow in its core business start to balloon, we believe this is one key reason Broadcom is launching its hostile take-over of Qualcomm. Assume that Broadcom can ideally acquire Qualcomm at \$70 per share, the intangibles results from the acquisition will be at least \$30 billion, which can be used for tax deduction for many years to come. On the business side, Qualcomm's license model is clearly flawed with constant lawsuits and two key customers not paying royalties. Broadcom's historical close relationship with customers may help settle Qualcomm's licensing dispute and provide a lift to Qualcomm's current depressed earning. While the upside is significant for Broadcom if the deal went through, we are aware there are many variables in this deal, such as: anti-trust issues, heavy debt load, Qualcomm in middle of acquiring NXP, Qualcomm shareholder demand at least \$80 for the deal. We are monitoring the situation closely and will adjust our position accordingly.

- Facebook(FB):

Appreciated significantly in the 1st half of the year, the price of Facebook has largely unmoved since August because of political pressure from Russia related ads. Facebook is expected to increase total expense of 45% to 60% from its 2017 level by hiring more people in monitoring its content. Even with the elevated spending, Facebook's 2018 forward earnings multiples is only slightly higher than coming into 2017. We saw an opportunity to build a position in Facebook in the 4Q/17 at an average price of \$171. We believed the earning growth will recovered as three key Facebook's platforms begin to ramp up its monetization: Video, Whatapp, and Messenger. And the valuation of Facebook is very attractive given its growth rate. In the meantime, we are gradually seeing Facebook beginning to leverage its platform to penetrate into adjacent areas such as eCommerce (*Facebook Marketplace*) and enterprise software (*Facebook workplace*). Facebook is also very advanced both in AI infrastructure and software. In infrastructure, it has made several notable progresses in fine tuning its data center for AI workload. (*the most recent whitepaper can be accessed here <https://research.fb.com/wp-content/uploads/2017/12/hpca-2018-facebook.pdf>*) In software, Caffe 2 is now the leading framework for deep leaning. We are still studying its AI potential which we hope to discuss more in our future letters.

- Synchrony Financials(SYF):

While we spend lots time thinking about distress assets in the 2nd half, SYF is the only major distress position we bought. Our average cost for SYF is \$30 and the stock recovered quickly to \$38.6 by the end of 2017. A spin-off from GE capital, SYF is the largest provider of private label credits cards in United States. During the 2Q/17, the company shares drop substantially from \$34 to \$27 as net charge-off rate increased to 5.4% compare to 4.5% a year ago. We noticed that both Berkshire Hathaway and Baupost build a large position in Synchrony Financial in 2017. When two most renowned value firms are doing the credit check for you, the rest of analysis is pretty straight forward. As a direct bank, SYF has successfully expanded its low-cost deposits base. Since 2013, SYF's deposit has more than doubled from \$22.4 billion to \$53.2 billion. Its cost of deposits largely stays flat around 1.55% to 1.65%. Such low-cost deposit base has enabled SYF to generate excess capital that are just beginning to be allowed to return to shareholder by the Federal Reserve. For the cycle from 3Q/17 to 3Q/18, SYF will pay \$0.6 per share in dividend and spend \$1.64 billion on buyback, which translate to 9% capital return per year based on our average cost (2% dividend yield plus 7% repurchase). In 4Q/17, Synchrony successfully brought \$6 billion portfolio from Paypal. Going to into 2018, since more than 40% of the loan receivables are float rate asset that are linked to prime rate or LIBOR, an expected three or four-time rate increase from the Fed will likely be beneficial to SYF. While delinquency rate in SYF has stabilized, net charge-off rate so far is still at elevated level due to Hurricanes. We are watching the metrics closely and will adjust our position size.

- Others:

We initiate a major position in NetEase in 4Q/2017 at an average price of \$326. NetEase assembles some of the best and longest running gaming portfolios in China with many loyal players. Its superior gaming developing capabilities frequently allows it to come up in house developed hit games such as Omniyoji, and most recently survival games like Knives-out and Rules of Survival. The two survival games quickly become the number one downloading games in China and several other key markets such as US and Japan. DAU also surpass 20M in a short period of time. More impressively, NetEase push out updates every single week that dramatically improved the in-game experience. The stock subsequently rallied after this development. After the rally, we however, become a little more cautious after noticing the monetization of survival game may be lower than we projected. We recently sold our position at \$350. Having an average annual return of more than 50% both in the last 5 and 10 years, NetEase is no doubt one the best managed internet company in China. In addition, after years of investments, its eCommerce business finally starts up to take off. We will revisit the idea if the valuation becomes more attractive.

In the 2nd half, we also traded two merger and arbitrage ideas in Brocade and FOX. The contribution from them is not material to our results. Nonetheless, we continue to seek M&A opportunities to lock in fixed returns.

Thoughts on Technology and its impact on Macro Economy

In a recent interview at University of Michigan, Charlie Munger has an interesting comment on Adam Smith's worst single mistake:

“Adam Smith is totally right about the market, the advantage of trade, division of labor and so forth...what he missed was how much steady advance of technology would advance wealth and standards of living”

It is obvious to us that for the next decade, the world is not only going to have a steady, but exponential technology revolution. (In our 2015 letter, we discussed that several mega tech trends maturing at the same time). As technology's impact to society becomes greater, it may alter many variables and outcomes of the classic economy theory.

One topic is technology's hidden impact on inflation. Examples are all over the place: lower consumer goods price because of Amazon, lower transportation prices because of Uber, and lower cellphone bill because of carrier competition, etc. As tech companies are penetrating into more industries such as healthcare and industrial services, we think that price competition can be even more dynamic going forward. The tech competition is probably contributing to the unexpected and persistent low inflation, which frustrated central banks and in turn affect their decision to raise interest rates. And low interest rate increases all asset prices.

On the other hand, while inflation is low, productivity is growing. And if GDP and productivity growth persists, it is possible central bank will speed up on interest rate increase or tighten their monetary policy faster than market expected. A higher interest rate scenario will change the valuation standards for equities and bonds.

We are not here to predict any economic outcome. What we can do is to stay away from a group of companies that I think currently have an excess valuation that only make sense if low interest rate is here to stay permanently. As tech disruption becomes greater, their earning powers will not be as protected as before. If normalized interest rate environment comes, most of them will get a double hit on both earnings and multiples, a worst scenario for long-term investors. To be fair, we are not just thinking about “old economy” stocks, many high-multiple companies that will going to be disrupted are tech companies themselves.

Conclusion:

Going into 2018, the US market so far remains strong as low long-term interest rate, lower corporate tax rate and earnings growth dominate the theme. As stated many times in our previous letters, preservation of capital is our number one principle. And this principle is even

more important in a bull market, where money seems easy to make and some stocks rallied without fundamental to support them. Not to mention the craziness behind bitcoin or other cryptocurrencies. The fund will never risk the capital we need to speculate on the capital we don't need. We are actively looking for names that are less correlated to our existing holdings. We look forward to report back to you in the 1st half.