Excerpts from our 2018 annual letter

Below is an excerpt from our 2018 annual letter. Unfortunately, I can't share the whole letter due to #compliance, but you can contact my colleague Rob (his email is rsterner@rangeleycapital.com) if you're interested in seeing the whole letter or learning more about us.

Looking Forward to 2019 and Beyond

Zooming out a bit from our 2018 results, I want to spend some time talking about how we identify undervalued opportunities in today's markets, and then expand on a few specific areas that we think are particularly attractive. But before we do that, allow me to veer off on a quick tangent.

A few months ago, computers beat gamers at the popular computer game "Dota 2". Maybe that computer victory seems small versus the groundbreaking "Deep Blue" chess win in the 90s, but Bill Gates called the Dota victory a "huge milestone" because the Dota win represents a completely different type of accomplishment for computers. In fact, in many ways, comparing the computer victory in Chess to the recent victory in Dota is completely apples to oranges. In chess, there is only one opponent, each player has perfect information (i.e. they know exactly where all the pieces on the board are and what all of the possibilities are at each second), and each player plays in turn with no interruption (white goes, black goes, white goes, and so on until the game is over. Black can't suddenly move twice or slap white's hand away when white tries to move). In contrast, Dota is a team game that happens in real time with imperfect information. In order to win, players on a team need to cooperate with each other while responding to the opposing team in real time, so there is no perfect strategy or move that always works. The game is "hugely complex", with two

teams of five facing off on a giant map filled with obstacles and destructible buildings. There are pieces of the map that aren't visible, so knowledge is limited, and there are more than 100 heroes and hundreds of items and skills that can boost abilities and change the tide of battle*.

*(*I understand not all readers are familiar with video games, so here's another way to think of it: playing a game of DOTA is like calling plays in a game of (American) football. You'll need to make different calls depending on the time of the game, the game situation, and the strengths and skills of the players on the other team. However, in football, you have a basic idea of what the field looks like and where the other team's players will line up, while in DOTA the field can change constantly and the other team can hide their players and "tackle" you when you least expect it. Also, the other team might summon a dragon to eat your quarterback at halftime.)*

Computers beating humans at Dota is a fun story, but at this point you're probably wondering what the Dota story has to do with investing and our portfolio? Simple: in many ways, I see similarities between the evolution of computers playing games like chess and Dota and computers competing in the markets. I think learning lessons from the gaming side helps inform us of where AI and machine learning are effective, where they fail, and where we can find alpha in the markets going forward as computer trading and quantitative models become an increasingly dominant portion of the market.

If we rewind to the 1960s/1970s, stock markets were inarguably much more inefficient than they were today. Consider:

- Without computers, information would diffuse at different speeds. David Tepper, for example, named his hedge fund Appaloosa because information at the time was sent out by faxes, and being at the beginning of the alphabet "got the info ten minutes faster". Getting that

information faster would allow investors to buy or sell before other participants had incorporated new facts. (Admittedly, the Appaloosa name story was in the 90s, but I've heard even wilder stories of people getting access to critical government filings days before competitors because they lived in D.C. and went directly to the physical government agency while their competitors in New York waited for the filings to arrive by mail).

- High-yield bonds (aka junk bonds) were generally avoided, presenting investors who were willing to buy them significant opportunity. The entire high yield market generally comprised "fallen angels" (former investment-grade companies that had fallen on hard times). Michael Milken saw a study that high-yield bonds would outperform and began trading junk bonds at Drexel. In the mid-1970s, high-yield bonds proved resistant to the on-going recession and investors achieved high returns on high yield bonds despite equities being cut in half.
- Black-Scholes (the formula for pricing options) had not yet been invented. Some investors (including Ed Thorpe) made riskless profits by discovering the formula on their own and then buy/selling under/overvalued options. Similarly, capital asset pricing (CAPM) and things like the "value" or "size" factors (stocks with lower valuations / smaller size tend to overperform larger / higher valued stocks) hadn't been discovered yet.

Over the past few decades, all of those inefficiencies have been (mostly) competed away. Regulations and computers ensured that information would diffuse evenly. Investors overcame their fear of high-yield bonds, and today incentivized investors will buy anything that offers enough yield for its risk (CDO squared, anyone?). Black-Scholes was invented, and reams of quant funds spent decades capturing huge alpha by shorting expensive stocks and buying cheap ones. While there

may still be some alpha to those strategies (for example, every now and then a piece of corporate news will leak slowly because it's posted in the wrong place / at the wrong time, creating alpha for traders who see the data before anyone else, and it seems there's still some alpha that exists from investing in "value" factors; it's just much smaller than before), but in general the alpha to those strategies is gone and not coming back.

In many ways, I view the death of that alpha as the "computer winning at chess" stage of investing. Black-Scholes and CAPM value / size factors are simply mathematical formulas. Thirty years ago, a human could make money by applying those formulas (or things similar to them) on their own. Today, computer "quants" can apply those factors (plus thousands of others) at blinding speed and with ruthless efficiency. If you're a human today investing on simple quantitative factors (stock Y trades at 10x earnings and stock X trades at 12x earnings, so I'll buy stock X and short stock Y based purely on that valuation), you're effectively a human trying to play chess against a computer: overmatched and destined to lose.

The alpha from those "chess" strategies was large, lucrative, and relatively stable / easy to achieve. If that alpha's gone, what's left for active investors trying to outperform?

I think you can see pieces of the answers by looking at how humans have beaten computers at games. For example, in the computer DOTA victory, it's worth noting that the computers won two of their first three Dota games against the humans, but then lost a third "just for fun" match when the computers weren't able to choose optimal conditions / get the specific heroes they wanted (in the words of one review, the "humans proved more adaptable" than the computers). In other words, the AI's knowledge proves "very brittle" and as soon as the computer encounters something unexpected the AI breaks down. We've actually seen things like this for years; in the famous Kasparov vs Deep Blue chess matches, Kasparov would

intentionally make ridiculous openings (“don’t ask me what to call that opening”!) to force the computer out of its prepared opening sets.

So what does that mean for investors? Increasingly, I think alpha will accrue to investors who can invest in unique situations that can’t be captured properly by computer models. An example may illustrate this point best: over the summer, Elon Musk tweeted “considering taking Tesla private at $420. Funding secured” (disclosure: we have a small short position in Tesla). This tweet eventually turned into quite the saga: for a while, some thought the best source of information on the buyout was pop star Azealia Banks’ Instagram account (where she claimed Musk sent the tweet while on Acid, and, yes, I am serious that this is a thing that happened), the SEC sued him and revealed that the $420 price was a marijuana reference (rather obvious to most people plugged into pop culture) designed to impress his girlfriend (less obvious), and the tweet caused countless lawyers and journalists to spend time wondering how Tesla could go private while keeping its public shareholders who wanted to remain shareholders (as Musk promised they could).Was the whole saga “highly” (pun very much intended) amusing? Absolutely! But it also represented a unique situation that broke the bounds of normal market functioning and that computers were uniquely ill-equipped to handle. After seeing Musk’s tweet, computers would immediately turn Tesla into a deal stock, and their math looks something like this, “he’s trying to take the company private at $420. Tesla was trading for $340 before the tweet, and there’s a 50% chance the deal goes through, so Tesla should be valued at ~$380/share.” Humans, however, could quickly draw a lot from the context clues around the offer (isn’t $420 a marijuana reference? How many times has a go-private offer been launched on Twitter during market hours, never mind that this would be one of the largest in history?) that computers might not be able to pick up on. In addition, humans might be able to think down the event path a little further than a

computer running a quantitative model could (for example, if the human investor had read Ashlee Vance's Musk biography, they might remember the story about Musk taking "risks that seemed like they could land him in jail" and bluffing about funding when Tesla had faced distress a few years earlier. Remembering that story, the human investor might think that this take private might be a similar "bluff" to cover up some other issues at the company, or the human investor might be able to start thinking further down the line about the potential for fines / sanctions / disbarment if Musk's tweet wasn't factual).

Obviously the Tesla saga is a unique and over the top example, but it serves as a really nice / extreme example of the types of things where I think investors will be able to generate value in going forward: investing in things that valuation / computer models can't or won't invest in, including things that are too complex for a computer to model / value (for example, holding companies with complex accounting, or companies that announce a transformative merger so that historical financials have little to no bearing on future valuation), securities too illiquid or small for computers to buy, companies where value can be created through something a computer can't do (for example, running an activist process), or through quirky situations that involve human tendencies or histories that computers can't pick up on (like the Tesla situation above). In my head, I consider these "Dota" opportunities: they're opportunities that exist because of uncertainty or tail events that quantitative computer models can't pick up on (or can't invest in).

In a few years, I would guess computers are able to reliably beat humans at any video game, but the good news for investors is that, as long as corporate executives can tweet fake buyout offers / marijuana jokes to impress their girlfriends, I have a feeling that there will be some tail events that computers can never capture and some alpha that investors willing to be

patient will be able to earn. Going forward, I think alpha will be smaller (as most of the easy / less risky "chess" profits have been picked away) and lumpier (with the "chess" profits picked away, a lot of the remaining profits will come from investing in things computers undervalue or can't buy and waiting for a corporate transaction to unlock that value) than it was a decade or three ago, but I think alpha will still be there for people willing to do the work to find quirky / off-the-run / complex situations.

Portfolio Opportunities

Let's turn back to our portfolio and talk about how we're invested and why I think we're positioned to capture that alpha going forward.

The vast majority of our portfolio currently falls into one of four "buckets": tracking stock and holding companies, publicly traded sports teams, publicly traded alternative investment managers, and special situations. We believe we have a significant edge in analyzing each of these buckets, and we believe each of them fits into the "Dota" framework we laid out above. So, what are these buckets and why do we think we have some type of edge in investing in them?

- Tracking stocks and holding companies:
    - What are they? Tracking stocks are publicly traded stocks issued by a company designed to "track" the performance of a specific asset or investment they own. They are a contractual right to an asset, but they don't actually own any assets. Holding companies, on the other hand, generally invest in other businesses but often have no specific operating business of their own; Warren Buffett's Berkshire Hathaway is a fantastic example.
    - Why do we think we have an edge? We think we have a few reasons for an edge here:
- Tracking stocks and holding companies often have

incredibly complex accounting, making their value difficult to model (particularly from a computer batch pulling data out of hundreds of securities filings at once and plugging those into standardized models).

- Tracking stocks and holding companies are often ineligible for inclusion in a variety of indices (holding companies because insiders often own a large percentage of shares and the remaining shares aren't liquid enough for indices; tracking stocks because they are not actually companies).
- Tracking stocks and holding companies often have a controlling shareholder. Assessing how that controlling shareholder will treat minority shareholders is critical to valuing the holding company. Most of the data that computers rely on to help discern management's skill and intent focuses purely on historic data, and often that data focuses more on how a basket of similar companies have treated minority shareholders instead of the track record of the specific controlling shareholders. However, I find that changes in an industry, taxes, family dynamic or within the company can have a far more pronounced impact on the incentives for the key decision makers. For example, we may see a controlling shareholder who hasn't engaged with minority shareholders for years suddenly go to an investor conference or do more investor outreach. While this behavior in itself doesn't tell us the answer, it can help lead to asking the right questions to determine if management is looking to make a significant corporate move to unlock value.
- Partially because of the first three points, both tracking stocks and holding companies generally trade for large discounts to the easily identifiable sum of their parts (there's even a name for this discount for holding companies, the conglomerate discount) regardless of their management team's track record for value creation (Berkshire Hathaway, for example, has often

traded at a discount to a conservative sum of its parts despite having Warren freaking Buffett allocating capital!).

- Publicly traded sports teams
    - What are they? Professional sports teams that are publicly traded (like Madison Square Garden (MSG), which owns the Knicks and Rangers, and the Liberty Braves, which owns that Atlanta Braves. We are long both).
    - Why do we think we have an edge? There are very few publicly traded sports teams (we're only aware of MSG, the Braves, Manchester United, Juventus (Italian soccer), and the WWE) so they're a very small nook of the market. Sports teams don't produce a lot of accounting profits, so their valuation looks ridiculous to a computer model. There are significant benefits to owning / controlling a sports team (political sway, tax benefits) that a computer model will never pick up on but that have significant value for a controlling shareholder. Given most publicly traded sports teams have controlling shareholders with super voting shares, their stocks are often on the illiquid side and ineligible for inclusion in indices.
- Publicly traded alternative asset managers
    - What are they? Most of the major private equity firms (Blackstone, Oaktree, Apollo, etc.) went from privately held partnerships to publicly traded in the past decade. Buying their shares allows an investor to participate in the private equity space in two ways: first, the investor enjoys a share of the management and incentive fees that the private equity firms generate for managing funds. Second, the private equity firms are often the largest (or among the largest) investors in their funds, so buying the private

equity stocks allows an investor to get indirect assets to the firms' flagship funds.

- Why do we think we have an edge? The accounting for private equity firms is rather complex, as they have to consolidate many of their underlying funds (for example, if a firm raises a $100m fund with $50m of debt and $50m of outside money, they need to put $100m of assets, $50m of debt, and $50m of non-controlling interest on their balance sheet). This consolidation can cause their valuation and balance sheet metrics to look wildly leveraged despite often very conservative balance sheets. For example, in Q3'18, Oaktree reported total liabilities and total debt significantly in excess of shareholder capital, making the company look massively leveraged and vulnerable to the slightest downturn. In reality, this leverage was due to consolidation of some of their funds, and the holding company actually enjoys a significant net cash position, setting them up extremely well to respond aggressively to a downturn. In addition, many of the private equity firms are structured as partnerships, which has tax advantages but also creates tax complexity at the shareholder level that excludes them from being eligible for most indices (and from most institutional investors). The combination of accounting complexity and limited shareholder base allows us to buy the publicly traded asset managers at extremely low multiples to their underlying asset management streams.

We also believe the major private equity firms have significant tail winds that will allow them to grow at above average rates for years to come, in part driven by a "nobody

gets fired for buying IBM” effect at large pension / sovereign wealth funds. If you’re a pension fund employee in charge of private equity allocation, you have two choices: you can give the allocation to an unknown startup, in which case you’ll get fired if it does poorly and a pat on the back if it does well. Or you can give the allocation to one of the ~seven major private equity players, in which case you’ll get a pat on the back if it does well and a nod of understanding if it does poorly because every other pension fund in the world will have invested in the same fund and your results will look like everyone else’s. As we prepared to publish this letter, the Wall Street Journal published an article on Blackstone’s record $20B real estate fund that captured this line of thinking perfectly, “Investment officers working for pension funds, endowments and other institutional investors prefer firms with marquee names and long track records because they have less explaining to do if things go wrong.”

- Special situations
    - What are they? This is a catch all bucket for a variety of special situations, an investment in a stock that has some type of binary event or transaction affecting it that is not market related. The most basic special situation would be a merger: i.e. company X is being acquired for $10 per share and the stock trades at $9 because investors aren’t certain if the deal will go through. If and when the deal ultimately gets completed, we get $10 whether the market has gone up or down 20%. However, this bucket can cover a wide array of situations, including spin-offs, bankruptcies, activism, and a variety of other quirky situations. Just to give an idea of how broad this bucket is, this year we invested in a Canadian airline loyalty program after it lost its airline partner (Aimia, which we still own), a taxable spinoff where management was incentivized

to downplay the spin's value (La Quinta / Corepoint, which we still own), and an Eastern European hotel chain whose majority shareholder was in financial distress (Radisson / Rezidor, which we still own). Not all of these investments are winners, but in general these situations offer interesting risk / rewards that are uncorrelated to the market.

- Why do we think we have an edge? Each of these situations is often unique, and there is no one size fits all approach to valuing them or accounting for the risks. As you shift further away from bread and butter merger arbitrage into more complex and unique special situations, that lack of standard approach is awful for systematic strategies and computers, but it's where human investors can have a significant advantage. For example, Aimia (the Canadian airline loyalty program) is/was the only pure play publicly traded airline loyalty program in the world. We started investing after they announced they were losing their airline partner (Air Canada). Accounting for a loyalty program is extremely complex on its own (it requires significant assumptions around the percent of loyalty points that are actually used). Accounting for / valuing an airline loyalty program without an airline partner, on the other hand… good luck trying to feed that into a standardized model. In addition to specialized / unique valuation work on a case by case basis, special situations often require knowledge of local rules that can vary widely across countries or even depending on what state a company is incorporated in. For example, a local law may require a majority owner to treat minority shareholders in a specific way in one state but in a completely different way in another. Human

incentives also play an important role in special situations. Sometimes it might be in a company's best interest to try to back out of an announced merger, but if the CEO was the one championing the deal, attempting to break the deal will cause him huge embarrassment and might cause him to lose his job. So the CEO might be more incentivized to stick with a bad deal rather than to back out of it even though backing out is in shareholders' best interest. In these special situations, analyzing the company financials just gets you to the starting point. Local rules, specialized valuation analysis, and human incentives can't be captured by a model; they often require a lot of time spent talking to the players involved and gathering bits and pieces of information to understand the more complex narrative. It's extremely difficult for computers, systematic models and exchange traded funds to take advantage of these types of situations, and it creates the potential for significant mispricing.

Before I wrap this letter up, I want to spend time on two different points: where does our largest position, Charter, fit into the framework above, and what's our outlook for 2019?

Let's start with the first question: I just described how we were looking for areas of opportunity where we see value that computers don't, so how does Charter, a mega-cap cable company, fit into that framework? Glad you asked! I think it fits in the following ways:

- Holding Company: We haven't purchased Charter directly; instead, we've done it through Liberty Broadband (LBRDA) and GCI Liberty (GLIBA). Both of these companies derive the vast majority of their value from Charter, and trade at a discount to their underlying asset value. They're also generally excluded from most major indices, so a

lot of major institutions can’t buy them.

- Transformative Merger: Charter went through not one but two transformative acquisitions when they completed their acquisitions of Time Warner Cable and Bright House Networks in 2016. Those acquisitions have resulted in a huge drag on Charter’s financials: expenses have been elevated as the company integrates three businesses into one, cash flow has been hampered by elevated capital expenditures as they upgrade the legacy companies’ networks, and growth has been hindered as they standardize pricing and rates across the whole company. On a trailing basis, those integration expenses make Charter look expensive; however, those expenses should begin to bleed off in 2019, and when they do the strength of Charter’s underlying business and how cheap it is will shine through.
- Headline revenue losses from cord cutting: The traditional cable video business is dying away as people increasingly cut the cord in favor of cheaper online packages. The cable video business isn’t particularly important to our investment thesis though, which is predicated mainly on cable’s high margin broadband internet business. However, as the cable video business goes away, it creates “headline” revenue issues that make a cable company look like it’s shrinking. A simple example might show this best: say you subscribe to a $150/month “double play” video package, consisting of $100 for your video package and $50 for broadband. If you drop your video package, the cable company will likely raise your broadband price to ~$60/month (you no longer get the bundled pricing discount). The cable company has now lost ~60% of their revenue from you; however, video is a very low margin business (most of that $100/month you were paying go to ESPN, Fox, CBS, etc.) and broadband is a very high margin business (there’s almost no incremental cost to it), so the cable company’s profit per month from you remains roughly flat

and their valuation really shouldn't change. However, I suspect some quantitative models might pick up on the huge revenue headwind from the video losses and (incorrectly) price cable companies as declining assets. While this revenue headwind will likely exist for several more years, it should become increasingly less meaningful over the next few years as the broadband business continues to make up a bigger piece of the cable revenue pie.

- Wireless investment dragging on financials: Charter is currently making a massive investment into launching a wireless business, and that investment carries heavy costs in the short to medium term. Through the first three quarters of 2018 (the most current data we have), the company has burned ~$135m investing into the mobile business, and those losses will likely grow significantly in 2019 as they scale the business up (Comcast, for example, has burned over $1B in the past twelve months investing into the wireless business). Currently, it seems like the market is giving both Comcast and Charter no credit for that wireless investment (i.e. the market is effectively treating this money like it is being lit on fire); however, we believe these wireless investments will create massive amounts of value over time.
- Merger at the holding company / tracking stock level: While the timing isn't certain, the incentives are highly aligned for Liberty Broadband and GCI Liberty to eventually merge with each other, and then ultimately merge with Charter. John Malone, the controlling shareholder, has a long history of value creating transactions like these. With our long-term thesis on the upside in Charter's underlying business, we can capture the performance in Charter and get an additional return from these leveraged investments in Charter as their discount eventually is removed.

In sum, we think Charter fits well into our “invest in complexity to beat the computers” thesis, and we expect the company to perform well in 2019/2020 as they put their integration behind them and as the mobile business starts to ramp up.

What’s our outlook for 2019?

We’re micro-investors, not macro-investors, which means we generally focus on identifying and understanding mispriced securities on a one-off basis. So rather than say “rates are increasing so we should be long consumer staples and short utilities,” most of our time is spent looking for companies and situations that we think are misunderstood / mispriced. We believe it’s a great time to be a “micro-focused” investor, as the disaster that was equity markets in the fourth quarter of 2018 (as mentioned above, one of the worst quarters in the past ~50 years for public equities) has left a variety of companies and industries severely oversold / mispriced. For example, in Q4 we saw a wide variety of closed-end funds (publicly traded investment companies that generally consist of a basket of liquid equities, similar to a mutual funds) that traded at discounts to their underlying asset values that hadn’t been approached since the financial crisis, and plenty of financials (banks, lenders, etc.) traded far below their tangible book values (the estimate of what shareholders would receive if the company were to liquidate tomorrow) despite strong fundamentals, good management teams, and rational share allocation (i.e. aggressive share repurchases when shares trade below book value). While market declines like the fourth quarter of 2018 can be frightening, they create fantastic opportunities to buy good companies at a discount or interesting special situations at a great risk/reward. Currently, we’re finding more opportunities to invest than we have since launch, and we’re confident / hopeful that those opportunities will produce strong results in 2019.

Moving away from our micro focus, let’s take a second to

discuss our overall outlook for the market in 2019 (as that's generally what people mean when they ask what's in store for 2019). I generally stand by everything I wrote in last year's letter: overall markets remain relatively fully but fairly valued, though strong earnings in 2018 combined with the market declines in 2018 mean the overall markets are trading a touch cheaper than they were at this time last year. As I write this, the S&P 500 is trading at ~15x forward earnings (~7.5% earnings yield), its cheapest level since the 2012/2013 timeframe. With interest rates remaining at historic lows (10-year Treasury bonds continue to yield less than 3%), the stock market continues to trade much too cheaply however you look at the market (you can use forward earnings or a cyclically adjusted earnings measure like the Shiller PE; either way the market trades for a solid discount to bonds despite the fact stocks should generally grow their earnings over time while bond yields are fixed).

At current prices, I think markets are probably priced cheaply enough to power through a garden variety recession (and, given our current focus on non-cyclical stocks like cable companies and special situations, our portfolio would likely do significantly better than "power through" in a recession). My biggest worry is that markets tend to "crack" when a core assumption of the market proves false. For example, heading into 2008, everyone assumed that housing prices could never go down, and much of the financial system was built on that belief. When that belief proved wrong, we got our worst recession since the Great Depression. A core assumption for financial markets for the past ~100 years has been the stability of the U.S.: The U.S. honored international deals, supported its allies, had a (mostly) functioning government with (relatively) stable rules, and the Fed was generally independent of politics. My big worry for 2019 is there are a wide array of events that could quickly test any of those assumptions, and if any prove to be wrong then we will have a crisis that will take years to resolve (i.e. if the Fed is

proven not to be independent of politics a crisis can quickly develop, and once an assumption is invalidated, there's unfortunately going back. Warren Buffett often says it takes decades to build a reputation but it can be lost in a second; similarly, those types of core market assumptions take decades to form and can be undone in a second if institutions aren't careful).

I don't want to end on a sour note, so let me reiterate that any of those assumptions being tested remains a tail risk, and my hope is that if they were to be tested, the assumptions would prove correct / our institutions would hold up (for example, to date the Fed has seemed to largely ignore any attempted influence from the President).

No matter what the market throws our way, I'm thrilled with the way our portfolio is positioned today. We're currently finding more opportunities than we ever have, and we believe that 2019 should have several positive catalysts for many of our large investments. We're looking forward to a strong 2019.