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2016 SECOND QUARTER INVESTOR LETTER

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Predicting Geopolitical Events as Challenging as Recessions

In our last quarterly letter, we discussed a research paper detailing how economic prognosticators were nearly perfect in their inability to predict recessions around the world during 2008-2009. Interestingly, this theme was echoed in a recent *Wall Street Journal* article where Philip Tetlock, a professor at University of Pennsylvania's Wharton School of Business, noted that a study of about 28,000 expert geopolitical predictions over 20 years found that most predictions were only slightly better than chance, especially when forecasting if events more than a year off would or would not happen. Perhaps Professor Tetlock can do some consulting work for the various United Kingdom political betting sites which showed 70-80% odds of the UK voting to "Remain" within the European Union just 3 days before the June 23 vote. Interestingly, the betting sites were not the result of limited, illiquid wagers with little predictive value. In fact, Brexit wagers became one of the largest gambling events with total wagers nearly equaling the £35 billion of bets placed on the 2014 World Cup.

So, in case you missed it, the UK voted for Brexit (don't accuse us of uninformative quarterly letters). So what did the experts get right? It was universally agreed on both sides of the debate that, should Brexit win, the UK pound and world markets would fall. For the first two trading days, this prediction was realized as the pound declined 11%, the FTSE 100 (British), DAX (German), CAC 40 (French) dropped 6%, 10% and 11% respectively, while the S&P 500 fell 5%. Maybe the prognosticators are pretty good? Of course, markets then started rallying on the third trading day following Brexit, with the European markets rising 9-12% and the S&P 500 setting new highs after an 8%+ rally. So said differently, an investor who perfectly predicted an event that few believed would happen might be looking at losses if he or she didn't cover in the first 48 trading hours.

How Low Can You Go?

Amazingly, this rally has occurred as interest rates continue to plummet. In our last letter, we noted that \$7 trillion of global government bonds offered yields below zero in February of this year. According to Bloomberg, that number has since increased to nearly \$11 trillion depending on the day, and somewhere around another \$200 billion of *corporate* debt has joined the sub-zero club. Since March 31 of this year, the 10-year Treasury yield has fallen another 20 basis points (+1.59%), with most of the decline occurring since the Brexit vote, while the German 10-year bond has declined a similar 20 basis point to a negative -0.02%. Normally, plummeting longer-term bond yields would signal economic concerns and create a less robust environment for stocks. But, it is difficult to have \$11 trillion of negative interest rates and to have anything considered normal. Huge differences between Japanese/European bond yields versus US rates, combined with a belief that US rate increases might be possible, have caused a flood of funds into the US Treasuries. Some hypothesize that shrinking yields do not reflect economic concern but instead are the result of investors flocking towards financial instruments that will not be gobbled up by desperate Central Banks. With more and more bonds negative, investors will naturally gravitate towards "high yielding" 10-year Treasuries. And if the economy weakens? Central banks will buy more bonds and yields will move lower still.

An interesting theory, but of course another way of looking at the situation is simply: "Why would I buy an asset that guarantees losses until maturity and could suffer meaningful short-term losses if interest

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rates surprise to the upside?” Or perhaps a less eloquent but just as accurate reaction would be simply: “What the hell is going on here?” We haven’t been able to answer either question and therefore have simply avoided fixed income.

Low/negative interest rates have affected equities in a couple of ways. First, more money has likely been driven to equities because alternatives appear so awful – the so-called “There Is No Alternative” (TINA) effect. In a yield starved world, equities that are viewed as more defensive and (even better) pay a growing dividend stream have been gobbled up by investors. A recent *Barron’s* article detailed how investors have deposited \$16 billion into so-called low-volatility exchange traded funds over the past year. We do not question that Campbell Soup, Kellogg Company, and General Mills (to name 3 of a larger list of consumer staple names of the world) have stable businesses. We just question how much value really exists in names that are valued at 20-25x earnings with limited volume growth and some real secular concerns.

We Dislike the Screens...And the Feeling is Apparently Mutual

As you might have guessed, we did not use the Brexit selloff to chase defensive cereal names. Instead, we increased our positions in two of our largest holdings -- Liberty Global (more on this in a bit) and Liberty Ventures -- and we added additional shares of Liberty Latin America (LILAK) as shares were distributed from LGI. We actually presented Liberty Global at the Vail ValueX Conference the day after Brexit and then led a more detailed discussion on the name for the New York Society of Security Analysts. There is an interesting theme with all 3 investments in addition to their obvious affiliation with Liberty: each name screens poorly against current popular market themes. Let’s quickly review the checklist:

- Stock Screen: Pays a dividend and one that rises over time?
- Result: *Ummm, no...I did mention these were Liberty companies, correct?*

- Stock Screen: Straightforward story that is easy to describe to investors?
- Result: *Well kind of...outside the tracking stock (LVNTA/LILAK/LGI), tax assets (LVNTA/LILAK), spinoffs (LVNTA/LILAK/LGI), minority interests (LILAK/LVNTA/LGI), cross currency swaps (LILAK/LGI), low/negative GAAP earnings (LILAK/LVNTA/LGI) and lettered stock (LVNTA/LILAK/LGI)...Ok not exactly...fine, not at all.*

- Stock Screen: Foreign currency exposure and/or Brexit exposure?
- Result: *Yes (LGI/LILAK) and 37% of revenue in pounds (LGI)...Still there?*

- Stock Screen: Recession resistant or a growth challenged consumer staple/utility business? (first part is the screen, the second would be commentary).
- Result: *Yes on the recession resistant (LILAK/LGI/part of LVNTA) but cable actually possesses some decent growth opportunities...As far as we know, the companies do not sell cereal that fewer seem to be eating*

- Stock Screen: Have large cash tax burdens? (So maybe not a conscious search item but a consequence of owning predominantly US based defensive businesses).
- Result: *Very limited (LVNTA/LGI) and unfortunately extensive (LILAK).*

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So, by our unofficial count, some credit for recession resiliency, but strikes on nearly all other metrics. We do believe that most of the recent weakness in several Liberty names (Liberty Broadband aside) might partially stem from their divergence from the popular current attributes described above. But, we really lose little sleep over this and believe that discounts will correct over time and share repurchases at discounts to intrinsic value will prove accretive in later years. To be clear, and as we noted in our last letter, dividends can be very sensible capital allocation decisions. And yes, many companies have horrible historical track records with buybacks, often repurchasing aggressively at higher prices and thumb sucking at lower values. That said, for those who repurchase effectively, we think buybacks will add more value than dividends in a tax efficient manner. We also have no problem owning steady, slower growing businesses. However, we do believe one can pay too much for slow growing “safety names” just as one can pay too much for faster growing businesses. We thought consumer staple and utility names looked expensive at the beginning of the year and with advances of 10-20%, we simply see little value.

Liberty Ventures: Charter/Liberty Broadband on the Cheap

As noted, we did purchase additional shares in Liberty Ventures and in Liberty Latin America (outside of the spinoff). As we described in our 2015 third quarter letter, we have been bullish on the long-term prospects of Charter and believed there was multi-year upside to the combined Charter/Time Warner Cable. We thought odds of the deal closing were high but acknowledged the regulatory concern. The deal finally closed in May of this year and we believe upside will prove every bit as large as we described last year. Getting the deal across the finish line was no easy matter. Combining one regional monopoly with another might not cause additional harm at the local level, but this was not an easy story to sell to regulators. As a side note, if antitrust regulators rejected a merger between Staples and Office Depot (it is conceivable that at least one of these companies may not be here five years from now) based on the terrifying prospect that a company like Exxon Mobil might have to pay more for paper clips (or something like that), Charter’s efforts to get the Time Warner deal approved are that much more impressive.

Our largest exposure to Charter is via our investment in Liberty Broadband. But, we also own shares of Liberty Ventures (LVNTA), whose two major investments are shares in Liberty Broadband and online travel agent Expedia. To simplify another complex story, LVNTA has announced that it intends to do a hard spin of its CommerceHub¹ and Expedia stakes (with a date set for the former, but not the latter), leaving the company with its Liberty Broadband investment, tax-advantaged convertible bonds², and a couple of smaller equity stakes. Despite the pending spins, which typically narrow discounts, LVNTA’s spread to NAV actually widened, and therefore we were able to effectively purchase shares in Charter and Liberty Broadband at 20-27%³ discounts from current prices via LVNTA. Liberty has a history of narrowing these discounts and we believe further actions (including share repurchases/possible spin of Liberty Broadband) prior to the November analyst meeting are distinct possibilities. Furthermore, depending on how the various LVNTA pieces trade, we think there could be further investing opportunities.

¹ CommerceHub essentially allows online retailers to expand their product offering (and better compete with Amazon) without taking inventory risk by using software to link retailers and manufacturers. CommerceHub has grown revenue and EBITDA at roughly 30% compounded annual growth rates over the past 4 years.

² As a reminder, the bonds pay cash interest at 3-4% but allow tax deductions of ~9%. QVC pays LVNTA (currently ~\$100 million, growing to \$300-400 million by 2029 assuming QVC continues to generate taxable income) to utilize the tax savings and LVNTA is free to invest the “float.” LVNTA eventually has to repay the contingent deduction between 2029-2031 but the deduction essentially serves as an interest free loan.

³ We assume the discount is equal weighted across the various assets.

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LILAK: Uneconomic Selling

Before we discuss Liberty Global, we would remind readers that LGI distributed its 67% stake in LILAK (LILAK tracks the Latin American assets and the newly acquired Cable & Wireless (C&W)) on July 1 of this year⁴. We did make small additional purchases in LILAK as spinoff selling accelerated following the ex-dividend date. Video and broadband penetration levels are far lower in Chile and Caribbean countries but should rise over time. The controversial C&W deal nearly tripled the size of LILAK and should provide substantial synergy opportunities above and beyond those initially discussed at the time of the deal.⁵ LILAK has targeted double-digit EBITDA growth for the next several years but currently trades at only 7.3x our 2017 estimates. One problem that we would readily note is that LILAK is a cash tax payer – an anathema to a John Malone cable company. We think further deals might alleviate some of this tax burden, but we do believe investors need to keep this tax leakage in mind when valuing this faster growing story. Regardless, driven into the low 30's due to uneconomic selling from larger LGI shareholders, we see an opportunity, as it is not hard to see the stock doubling within 4 years.

Liberty Global: Wall Street/Supermodels/Investors Hate F/X...But Be Wary of Partial Adjustments

We will not rehash our entire investment thesis in Liberty Global, which we described in our 2015 fourth quarter letter. But, we do want to add a couple of comments on the name given recent company developments, the Brexit vote and our decision to increase the position's size. We previously noted that LGI's selloff stemmed from disappointment over no deal with Vodafone, a complicated acquisition of C&W financed by Liberty Global stock, a competitive Netherlands market and concerns over a stronger dollar/possible Brexit.

We will start with Brexit. Thirty-seven percent of LGI's revenue comes from the UK (43% from Euro countries) and LGI contributed money to the "Remain" campaign. Therefore, it is fair to say that the outcome was unwelcome from LGI's perspective. Admittedly, it is impossible to predict the long-term consequences of the decision. Given our various writings about experts' inability to predict recessions or to accurately forecast geopolitical events, we will not try to venture opinions which have roughly the same odds of success as a coin flip. There is little doubt that Brexit increased economic uncertainty and will likely provide an economic headwind shorter-term. Of course, cable has a history of performing quite well during periods of economic weakness (LGI actually did as well or better than US cable companies during the Great Recession). We see little reason this cannot continue, but we would concede that the European cable market is more penetrated than it was 7-8 years ago. Could Brexit be the first leg in a broad collapse of the European Union? This is a possibility. Is it possible that the UK muddles through the short-term noise, negotiates a reasonable set of treaties with its trading partners, and emerges (along with the rest of the European Union) without cataclysmic consequences? We think this is also a possible scenario. Clearly, the latter outcome would provide a better equity outcome, but even in the event of the former, LGI's business will not wither.

We want to provide some technical color on LGI's debt and the Netherlands JV with VOD that we shared in our two presentations on Liberty Global.⁶ For those who wish to skip the technical details, please feel

⁴ LGI started trading ex-dividend on June 21, 2016. The dividend distribution was worth a little over \$4 per LGI share so keep this in mind when comparing historical LGI share prices.

⁵ As a reminder, C&W acquired Columbus in March of 2015 and announced \$125 million of synergies. LILAK has said there will be additional synergies from LILAK's purchase of C&W but has not specified the exact number.

⁶ For those who would like to see our complete slide presentation on these topics, please let us know.

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free to skip to the last page, but Liberty junkies/insomniacs, pay close attention. Liberty does have a leveraged balance sheet (roughly 5x trailing adjusted EBITDA) but critically:

- The debt is held at the subsidiary level (not holding company).
- The debt is very cheap with few near-term maturities. LGI's debt currently costs 4.9%, down from 7.7% in 2011, with only approximately 10% of maturities due before 2021. We think it is conceivable that this rate actually *falls* should the European Central Bank continue to buy any investment grade paper not nailed to the floor, forcing investors into a shrinking pool of debt with reasonable yields. Furthermore, even with higher debt levels, cable's recession resiliency should continue to attract high yield investors.
- As previously noted, cable is among the more recession resistant businesses.
- LGI debt is either denominated in its functional currency (i.e., Pound denominated debt matched to Pound revenue) or is issued in dollars and immediately swapped to local currency debt.

Before addressing the last bullet point, we would simply note that one interesting part of LGI's valuation is that investors are forced to make assumptions about the euro and the pound's future value as the two currencies represent approximately 80% of total revenue. And this begs the question as to what exactly is the intrinsic value of the pound or euro? Both currencies are certainly worth less following June 23 and it "feels" like both have additional downside. But can anyone reliably estimate their value in say 2017-2019? If you were planning a vacation to England for July 2018, what exchange rate should you assume? There is little one can do except extrapolate current rates into the future, so you probably assume a rate near the current \$1.32/Pound. But, what if you did the same exercise next summer and the exchange rate moved to \$1.40/pound? Would you assume the rate one year later would be \$1.40, \$1.33 or an average of both? This question is similar to the problem that US analysts have when estimating dollar translated results for multinationals. Since analysts have no better insight as to where currencies are headed, they normally use the current exchange rates or utilize currency experts whose success rivals those previously profiled.

To be fair, Wall Street strategists are not the only ones who have had difficulty predicting currency movements. No less an expert than Brazilian supermodel Gisele Bündchen erred in 2007 when reportedly specifying that Pantene pay her in euros (the euro was roughly at \$1.45 or roughly 30% above current levels) since her twin sister Patricia, who doubles as business manager/currency trader, reported that euro-denominated contracts are more attractive "because we don't know what will happen to the dollar." If, instead of gracing the catwalk back in 2007, Gisele had spent her evenings modeling LGI's cash flow, we suspect she might have used forward year rates of \$1.45 or higher when forecasting LGI's EBITDA for 2016 and beyond and found the equity story very interesting as a currency play alone. Given the recent dollar strength, we are unaware if Giselle/Patricia have been accumulating US dollars, nor do we know their exact views on LGI (stay tuned for our third quarter letter). Nevertheless, we suspect other investors will assume that the recent dollar strength continues for multiple years...until it doesn't and then forecasts revert.

Regardless of where currencies move, LGI protects its balance sheet via cross currency swaps, but the company does not hedge translational changes in revenue and EBITDA. When US based analysts value LGI, they often produce local currency estimates for forward EBITDA, make an assumption about foreign exchange rates (which, again, will ultimately prove to be wrong more often than not) and thereby derive a series of US translated cash flows. Analysts will then apply a multiple of EBITDA and subtract debt estimates, adjust (hopefully) for content holdings, tax assets (not usually) and derive equity estimates. The problem with this exercise? If one adjusts foreign denominated EBITDA into US dollars at lower exchange rates, one also has to adjust downward non-US dollar denominated debt and credit LGI for the increased value of the cross currency swaps. The net effect of these adjustments is that LGI's leverage ratio will stay

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relatively constant regardless of euro/pound movements as lower dollar translated EBITDA is offset by reductions in net debt. Without making these adjustments, price targets for LGI's stock will be inflated during periods of dollar strength and understated during periods of dollar weakness, as is currently the case.

Apart from Brexit, there were other LGI developments during the first six months of 2016, including an announced Joint Venture with Vodafone in the Netherlands. As we described in our fourth quarter letter, LGI had struggled in the Netherlands partially due to a botched integration of Ziggo (acquired at the end of 2014) and partially from aggressive pricing from incumbent telecom competitor KPN. VOD and LGI will contribute their wireless and cable assets to the JV, with the deal valuing LGI's weakest country at 11x trailing EBITDA and requiring VOD to pay LGI €1 billion at closing. The JV's EBITDA will be leveraged at 4.5-5.0x (VOD's assets were contributed unleveraged) and cash flow will be split 50/50 between the two parties. The deal is significant for several reasons. First, it strengthens LGI's product offering in its most challenged market. LGI has noted reduced churn levels among quad play customers, and this deal would allow an integrated quad play offering with substantial synergies.⁷ Given KPN's recent 5% price increases, we think the deal could transform the Netherlands market into a happy little duopoly, or a normal cable market depending on your perspective. Some have suggested that regulatory risk for closing has increased as a result of Brexit as EU regulators presumably want to punish British companies for the Brexit vote. Regulatory surprises are certainly possible, but we think the odds favor approval and we do not believe that regulatory risks are meaningfully higher now than before June 23.

The deal will also result in significant additional cash flow for share repurchases from VOD/JV payments which we estimate at roughly \$2.6 billion. Additionally, further LGI debt will be needed to maintain LGI's 5x leverage target and the company will have significant free cash flow from its other markets. In total, we estimate share repurchases of \$5-\$6 billion in 2017 versus LGI's current ~\$29 billion total market capitalization. If the stock is near current levels, we believe a tender is possible. Importantly, sell-side models will not be updated until the deal officially closes, and therefore we suspect the size of repurchases may not be as visible to many investors. Finally, we do wonder if the JV could be a trial for a larger LGI/VOD combination. The synergies from a combined VOD/LGI could exceed the market capitalization of LGI, depending on one's assumptions. We think VOD does not have great options in an increasingly quad play market place and an attempted purchase of LGI could be the "least bad" decision.

LGI is formally targeting adjusted EBITDA growth of 7-9%⁸ from 2015-2018. Few (we assume roughly 5% ex-currency) expect the company to hit these targets, but we think an acceleration in growth from recent levels is still possible, despite possible macroeconomic headwinds. Top-line growth will be driven by Project Lightning (7 million new homes passed with 4 million inside the United Kingdom) and price increases (generally 2-3%) throughout the footprint. On the expense side, LGI hopes to keep indirect costs flat at \$5.5 billion. We think the opportunity is likely greater. LGI has executed €80 billion in acquisitions during the past 10 years. The growth has transformed the company into a pan-European cable company, but the pace of deals has not allowed the company to offer an integrated offering across its footprint. Currently, LGI has 10+ entertainment platforms, 80 different set-top boxes and 20,000 different vendors. There is plenty of opportunity for cost cuts, and we believe the company can exceed targets.

⁷ We credit the JV with most of the forecasted €280 million synergies but do not assume any of the projected €1 billion net present value revenue synergies.

⁸ On a constant currency basis excluding the Netherlands.

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We would like to warmly welcome back those who skipped the technical LGI jargon. As we described, Brexit was an unwelcome development shorter-term for Liberty Global. But, for the reasons described above, we think recent share weakness could allow accretive share repurchases for longer-term investors. LGI will likely be a volatile name over the coming months as the stock moves with the various headlines coming out of the UK and/or with the movement of the pound/euro. We purchased more shares on the selloff and would consider further additions should downside volatility return.

In closing, we have no idea how long the current low/negative interest rate environment will continue. Rates could begin to reverse later this year or lower rates might stay with us for 3+ years. While the performance of longer-dated bonds has continued to surprise on the upside, we think one is unwise to accept guaranteed negative real returns on the hope that a momentum trade will continue. As noted, we also have no desire to follow the stampede into dividend growing consumer staple names, as we believe large parts of this universe are overvalued. Certainly, with markets at all-time highs, it is more difficult to easily find mispricings. But, as described in this letter, we still see pockets of inefficiency and will continue purchasing for client and personal accounts where appropriate.

Thanks for your continued support.

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