

**Summary:**

Nearly two months ago, during peak cryptocurrency mania, we wrote a detailed note on bitcoin. It can be re-read [here](#) or by visiting our website at [www.manolecapital.com](http://www.manolecapital.com), under the “Research” tab. That note attempted to articulate our rationale on why bitcoin was not a viable currency. In addition, we highlighted how we were “playing” this market frenzy by owning the derivative exchanges.

In this note, we will take a quick look at recent bitcoin activity, as well as explain our rationale for owning the exchanges. If you want to read a more detailed CME note, please read our prior research from May of 2016 ([which can be re-read here](#)). We attempted to highlight the underappreciated asset we saw in CME and the stock has appreciated nearly 60% since that publishing. We believe there is more upside in the share price. We will layout our long-term CME thesis, upcoming positive catalysts, and valuation framework.

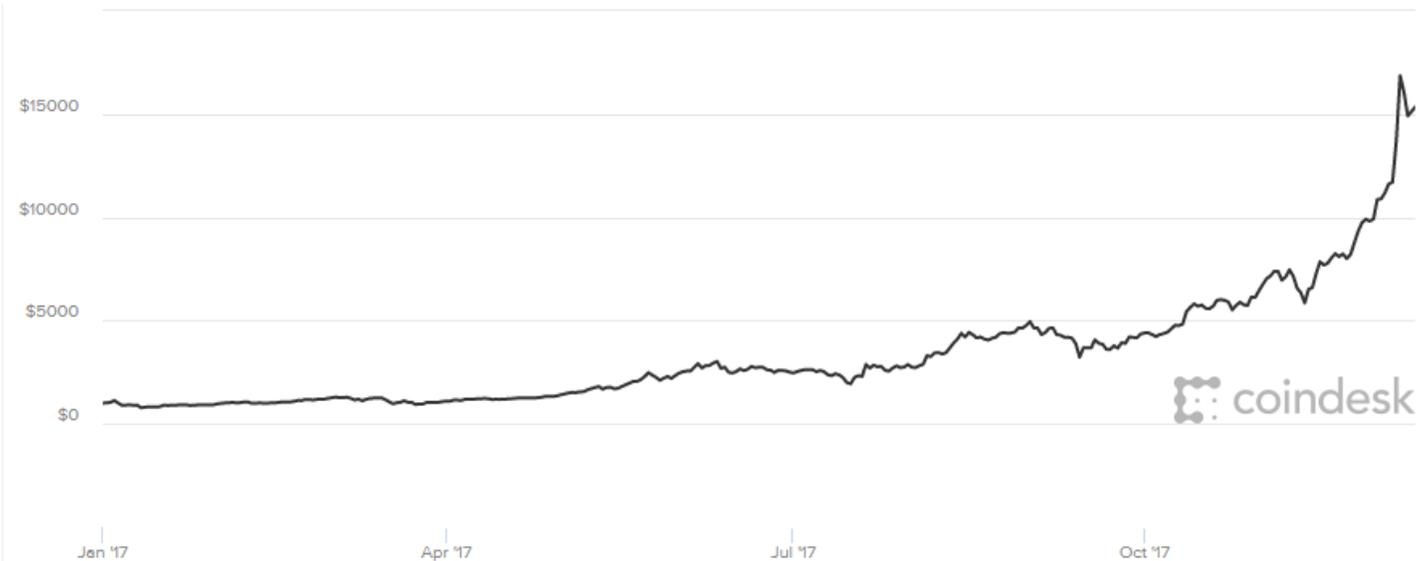
**It’s Blockchain, not Bitcoin:**

As “Fin Tech” specialists, we are constantly asked about our opinion on bitcoin and various other cryptocurrencies. The analogy we like to use is that bitcoin is to block chain as email was to the internet in the late 1990s. We believe that blockchain is the real story and technology advancement. Once data is stored in a block chain database, it can never be modified or deleted, and every record is permanent. Many new and interesting ways exist for block chain to improve current recordkeeping processes. Blockchain technology has the potential to eliminate much of the friction in traditional financial transactions and potentially could revolutionize commerce. It could eliminate many middlemen and provide secure execution of “smart contracts” in a fast and efficient way. Instead of understanding the underlying benefits of this general ledger system and its vast uses, too many people mistake this wonderful advancement for a digital currency that simply runs on this new platform. Blockchain has an immense number of new and interesting opportunities to leverage. In our opinion, certain investors were missing the trees for the forest. Bitcoin isn’t and won’t be the big story for the next decade. Blockchain is the enormous opportunity that we will focus our attention upon, not a cryptocurrency with limited real-life uses.

**Bitcoin:**

Around Thanksgiving of 2017, bitcoin was captivating global investors. From the start of 2017, it climbed from under \$1,000 per coin to a stunning, near \$20,000. During this heightened period, Coinbase, the most popular bitcoin exchange, was opening up more than 100,000 new customer accounts a day. In fact, we found it amazing that Coinbase grew so popular it actually had more accounts than legendary retail broker Charles Schwab.

As the chart below shows, bitcoin had been embraced and it was the chatter of holiday cocktail parties and other informal gatherings. CNBC couldn’t speak enough on this mania and those investors that weren’t involved in cryptocurrencies were “left out”.



Oh how times have changed. In January 2018, bitcoin prices fell 28%. However, while steep and painful for recent investors, this was only the 3<sup>rd</sup> worst month in bitcoins limited history. During its less than a decade of existence, bitcoin has been wildly volatile. Five peak-to-trough declines of more than 70% are evidence of a speculative, highly volatile instrument.

What will happen to bitcoins price? Was it in a bubble, as we stated in our recent note? Well, time will tell, but it certainly has a lot of similarities with the NASDAQ tech bubble as evidenced by the chart below.



Bitcoins initial intent was to make casual payments and lower transactions costs, all without the involvement of traditional financial institutions. The goal was to bypass the bank-based, fiat currency system and permit secure, online transactions. We believe bitcoin has missed on these initial objectives. With a foundation of libertarian principles, zealous proponents are mocking traditional rules. This is fine, as long as regulators are ignoring the risks. However, regulators are beginning to comment and lash back.

**Governments:**

In our December note, we wondered why governments were remaining so quiet on cryptocurrencies. In our society, central banks have a monopoly on money. Through their central bank, a country can control its money supply. In order to maintain a civil society, governments attempt to control their currency, monetary policy, and printing press. The threat of cryptocurrencies should worry governments because if they lose control of their currency, they possibly could lose control of their economy.

We specifically said that “Central banks cannot print or manufacture bitcoin, so they are forfeiting control of their economy. If a country were to switch from its fiat currency, it would have no mechanism to create new money in the event of a crisis. Without a way to alleviate a problem, countries would be helpless to respond. In our opinion, if bitcoin becomes wildly successful, governments will not sit idly by and watch. We have seen what China’s negative comments can do to the valuation of bitcoin. We expect significant regulatory scrutiny and rules to enter the digital currency marketplace in the near future. The first coordinated move by government(s) to regulate or institute banking rules upon bitcoin will result in a massive downward move in its price”. This has happened much quicker than even we anticipated.

Just last week, Indian Finance Minister Arun Jaitley raised warning bells. He said that his government does not recognize digital money as legal tender and he will “take all measures to eliminate use of these crypto-assets in financing illegitimate activities.” South Korea, one of bitcoins largest markets, is under siege with legislation that is squarely aimed at cooling the market. China, another hot bed of bitcoin trading and mining, has introduced even stricter regulations. It has banned or closed cryptocurrency exchanges and is limiting the mining operations “due to their environmental byproduct”. Japan, another large market for cryptocurrencies, recently experienced a theft of more than \$500 million of NEM on the Coincheck exchange. Here in the US,

regulators are finally waking up to the absurdity of certain initial coin offerings. The cause of bitcoins recent swoon are numerous, but these issues certainly do not help.

Despite its intention, we feel that bitcoin fails to accomplish what its founder envisioned. Instead of permitting casual transactions at low costs, bitcoins are the preferred currency of criminals. Speculators and momentum traders are attracted to the volatility and price increase. We do not believe this is the end of bitcoin and other cryptocurrencies. In fact, we hope they stick around for decades. As CME shareholders, we are always looking for our exchanges to have products to trade.

### #1) Medium of Exchange:

In our opinion, a currency needs two key ingredients to become a “valid currency”. First, it must act as a **medium of exchange**. Can we easily transact for goods and services utilizing this currency? When we purchase an item online, we are required to utilize cards or a digital network like PayPal. If we walk into a store, we need to transact in cash or various other mechanisms like credit or debit cards. We continue to hear of online merchants that either plan or have decided to transact at the point-of-sale in bitcoin. (Examples include Overstock.com, certain Subway locations, as well as potentially Square.) So, do these merchants accepting bitcoin help it meet our definition of a valid currency? We would like to know how many transactions are occurring on Overstock.com in bitcoin.

### #2) Store of Value:

The second aspect to be a currency is for it to act as a **store of value**. One needs to be fairly confident of what it might be worth in the future, especially from day-to-day. For example, the value of a dollar freely floats and does get modestly eroded by the impact of inflation. However, consumers, merchants, and investors feel confident it can be a proper and stable store of value. One might question the Federal Reserve and whether or not it is properly monitoring inflation, but dollar volatility is fairly modest. On the other hand, bitcoin has had five-day periods when it was up 44% or down 25% against the US dollar. This volatility detracts from bitcoin as a store of value and furthers our point.

### Currency:

Just as we do not provide any expert opinion on currency movements in the US dollar, Chinese Yuan, British Pound, Euro and others, we do not believe there is much to add on predicting fiat currency moves. We believed, back in December of 2017, that bitcoin was in a bubble. In our opinion, it was functioning on enthusiasm, not merit. We chose to bypass this speculative party and instead focused our attention on our individual security positions. We specifically called out both CME and CBOE as attractive opportunities that would benefit from this crypto mania. Both have added nearly 15% from that note getting published.

Even if bitcoin was a viable currency, which we fail to believe, it still would not be an investing option for us. We do not invest in individual currencies like the US dollar or Euro. Fiat currencies are driven by macro factors too vast for us to properly model. It is not just currencies, that we do not invest in. We do not believe our expertise is speculating in price swings in energy, commodities or interest rates. These are cyclical trades, which are unpredictable and difficult to forecast. We prefer to base our investments decisions on old-fashioned, research that attempts to eliminate the majority of the underlying, and unpredictable credit risk.

### Bitcoin Isn't Gold:

While it has some similarities to gold, bitcoin is not a store of value and is definitely not a safe haven asset. Bitcoin took 1,230 days for it to eclipse \$1,000 and another 1,269 days to eclipse \$2,000. Once it became popularized, it took 16 days to move from \$7,000 to \$8,000 and only 7 days to move past \$9,000 for the first time. Once it started to move over \$1,000 on a daily basis, it fails to act as a constant, predictable, store of value. Another key differentiator was the marketplace it traded on. Investors can speculate on the price of gold or any commodity. As the adage goes, for each buyer there is a seller. One of our biggest issues with bitcoin was the market it traded on. It was simply a one-way market. We have been concerned that trading in bitcoin has been dominated by buyers, not sellers. Without a valid market to short bitcoin, it was our opinion that huge retail demand spurred this unprecedented rise in value. Until real, regulated, experienced exchanges got involved, bitcoin was bound to simply be a one-way trade. For us, there was too much risk and not enough information upon which to base a valuation.

### Our Process:

We are bottoms up, fundamental investors. Our investment process and philosophy seeks to capture the benefits secular growth businesses. Our preference is to identify business models that earn steady and recurring revenue. We prefer to own companies that benefit from volatility, so we were naturally looking for the derivative exchanges to capture this mania. Why would

investors want to bet on the underlying price movement of a currency or asset or commodity, when you can simply own the exchange where they trade? While there is more upside for correctly predicting which way an asset might move, there is significantly less risk in making revenue and profits from those speculative trades. For us, this comes back to the kind of business models we seek out. Would we rather be a bridge builder or a toll-keeper? We always will look to be the toll-keeper on that bridge where millions of drivers want to pass.

With regulators forcing exchanges to monitor trading, track risk indicators, and ensure proper market and margin requirements. The CFTC has insured that traditional exchanges could only launch options and futures contracts once they agreed to significant enhancements to help protect customers and maintain an orderly market. These are the proper actions of a regulator, and we are pleased some discipline has been brought to this “wild west” marketplace.

#### **Banks:**

As we discussed above, bitcoin and other cryptocurrencies are not good at being a mechanism of payment. They also fail to act as a good store of value. However, this is not why traditional financial institutions view them as a threat. It is not bitcoin’s ability to act as a currency that worries them, but likely it is more akin to bitcoin’s acting as a potential new competitor. What if bitcoin could bypass traditional financial institutions and act as an online, offshore banking system? Allowing customers to easily transact without the watchful eye of the government would be a clear advantage to what a banks offer. In our opinion, this is the key worry for most banks.

Whenever new technology emerges, “old school” incumbents fear change. It happened during the Dot Com era, when the internet emerged as a widely popular new medium. Some say that big banks are the most at risk with the rise of cryptocurrencies and JP Morgan’s Jaime Dimon comments calling it a “fraud” were because he was worried about the risk to his business. We disagree.

Banks are required to know their customers and follow rules instituted by regulators. If JP Morgan were to transact in bitcoin, it would be in violation of numerous laws. The reward absolutely did not merit the risk, so banks simply ignored the cryptocurrency rage. However, banks are economic animals and would love another product to trade, if it abided by necessary laws. With volatility scarce in the markets, banks are significantly interested in any product that could drive volumes higher. The danger to the financial system is real, so regulations and rules are clearly needed. This is where the derivative exchanges entered the story. CME and CBOE permitted banks to transact, on behalf of customers. The market was regulated and the product was under stringent rules.

#### **Exchanges:**

Initially, the worry with listing bitcoin derivatives was how much additional volatility it would bring to the markets. If the exchanges were not properly prepared, the thought was that it could lead to an uncontrollable event. Specifically, the biggest worry was that margin rates were too low and would encourage excessive speculation. This in theory, would endanger both trading firms and their significantly important clearinghouses.

Futures margin rates typically range from 2% to 8%. E-mini S&P futures contracts need 3% initial margin, gold requires 4%, crude oil is 4% and natural gas is 8%. When an investor’s losses exceed this range, brokers can immediately cover the decline and pursue any differences with the client. If bitcoin were to drop by 15% to 20% intraday, brokers would not be equipped to cover losses. If smaller trading firms wanted to offer lower margin rates to attract business, it had the potential to lead to a bad outcome. As a worried Thomas Peterffy of Interactive Brokers said, he was “extremely scared” if more bitcoin volume “accumulates on the books of weaker clearing members who will all fail in a large move.”

At launch, the bitcoin contract will be subject to a significant number of risk management tools, including an initial margin of 35%. Positions will be marked intraday, with stringent price limits. There will also be a number of additional risk and credit controls that CME enforces to ensure proper safeguards. The future contract will be cash-settled, which will help to dampen volatility. Some futures contracts are settled in the underlying assets, such as settling at the end of a contract with a barrel of oil. By cash settling its contracts, it should lower the need, access and volatility of bitcoin. Pricing will be determined once a day using CME’s Bitcoin Reference Rate (or BRR), which has been designed around industry standard IOSCO Principles for Financial Benchmarks. There will be a price limit of 20% above or below the prior settlement price. Each contract will be composed of 5 bitcoins or \$25 per contract and the spot position limit will be 1,000 contracts.

The traditional derivative exchanges have just launched bitcoin futures and options. The most logical bitcoin sellers will be algorithmic shops or market makers willing to take a contrarian viewpoint. While there will be some doubt about the proper, transparent pricing mechanism employed, at least these regulated entities will utilize proven collateral, margin and clearinghouse techniques to insure transactions. These venues have almost legitimized bitcoin and the hope is that their involvement should begin to dampen some of bitcoin's massive volatility.

#### **Enter the Exchanges:**

Our version of financials are not traditional banks and brokers. These entities have opaque balance sheets and earnings releases that require hours for analysts to decipher. We prefer to own the exchanges, with their transparent transaction-based business models. Exchanges are fairly straightforward business models and do not have the credit risk and financial cyclicality of banks.

One does not need to have a full understanding of complicated derivative strategies that its customers employ. All an analyst needs to understand is how to use Excel. On its website ([www.cmegroup.com](http://www.cmegroup.com)), any analyst can track a real-time tally of CME's transactions. While the commission rate on these products varies, it is essentially a transaction-based business model. Average Daily Volume (ADV) multiplied by commissions or Rate per Contract (RPC) is an excellent proxy for revenue. Expenses are managed and contained, so earnings estimates do not vary dramatically from expectations.

That level of transparency is rare for any business. We liken it to Amazon putting a sales tracker on its website showing its dollar sold or even if Apple were to show in real-time their iPhone or Mac sales. No business provides the clarity into their growth like the derivative exchanges.

#### **CME:**

CME, the world's leading and most diverse derivatives marketplace is a perfect example of what we mean. The fundamentals of a business and the characteristics it possesses is material in our investment process. What we look for in a stock are an exactly the opposite of a CME trader. We are business buyers and investors, not short-term traders. Those that transact on CME's Globex platform are our polar opposite. These traders are looking for vast amounts of supply at low transaction costs. We focus on strong, durable franchise businesses with identifiable growth prospects and excellent management teams. These traders are looking to access the world's largest marketplace to find a seller or buyer to take the other side of their bet or hedge.

Our investment process seeks to identify growth businesses with certain key attributes. These characteristics are high barriers to entry, market share leadership, pricing power or flexibility, recurring revenues and predictable free cash flow. CME's end customers are not terribly attractive to us, but the CME's business characteristics are spot on for our philosophy. We have found that investing in companies, with these durable competitive advantages, leads to outperformance. CME has all of these attractive characteristics and more.

#### **Tax Reform:**

We have written extensively on the positive impact US tax reform will have on the US equity markets. There are not many companies in our coverage universe or in our portfolio that will benefit more from tax reform. The 2018 effective tax rate for CME is going to be 24.5%. When one considers that CME is in a high tax state, Illinois, it has been paying an effective tax rate in the mid 30's%. With net income of \$1.6 billion last year, a 10% tax savings equates to an additional \$160 million a year or \$0.50 per share of earnings. We expect the vast majority of this "found money" will get returned to shareholders via the dividend program CME has instituted.

How much of this has been factored into sell-side research estimates is another question? A quick review of several notes from recent results indicate that much of this upside has not fully been included in forward estimates. We are just now seeing analysts factoring in this much lower tax rate and allowing it to flow to CME's bottom line.

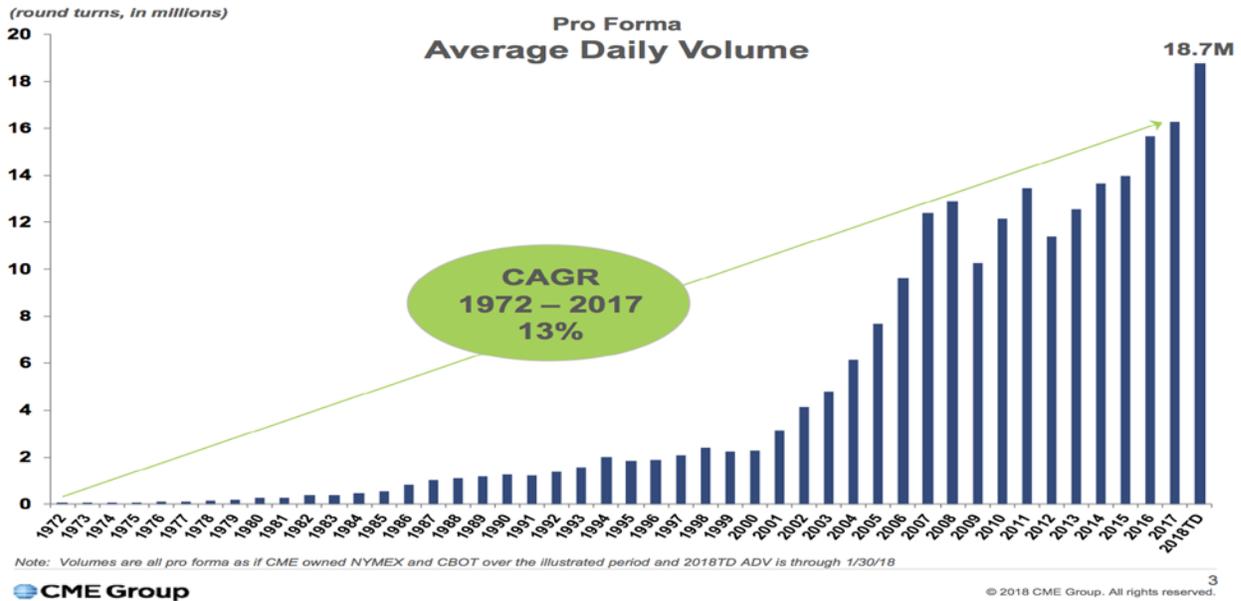
#### **Growth:**

We continue to believe the overall market is struggling to produce consistent growth. Yes, the tax reform package just passed with benefit all companies. After this one-year step up in earnings, companies will need to show growth in order to keep stock price momentum going.

CME has proven itself quite good at generating solid, predictable growth. First, there was the shift from pit trading to its electronic platform called Globex. Next, CME benefitted from the migration from the OTC or over-the-counter market to listed

options and futures. The next wave of growth will be spurred by globalization. During the most recent 4<sup>th</sup> quarter, CME experienced 34% of growth during European trading hours and 18% of growth during Asian trading hours. Non-US parties are looking to the CME for liquidity and best price execution for a variety of products.

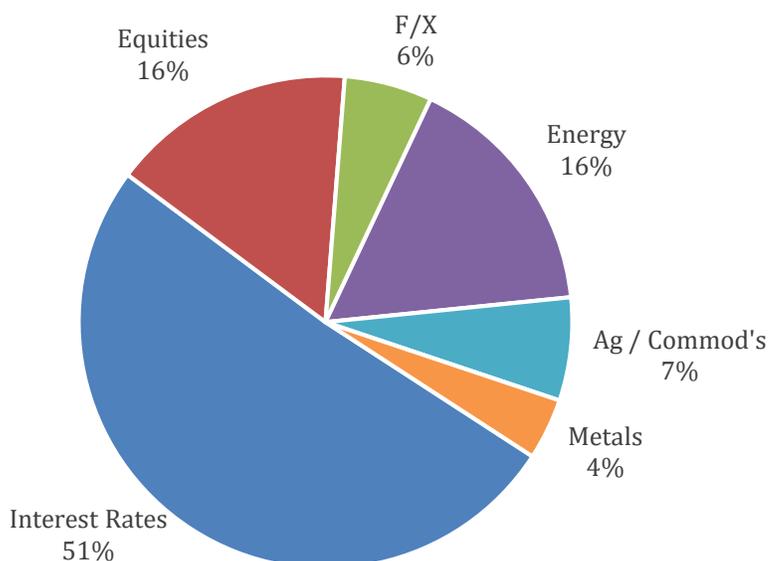
### Long-Term Growth in a Variety of Environments



#### Volumes:

Once again, it is not the underlying price of a product that we are concerned with. We are interested in seeing volatility, which drives trading, with increases transactions and profits. We do not know what the “hot dot” product will generate volatility and trading volumes this year. The Fed is expected to raise US interest rates three times, as inflation begins to percolate. Will this happen, or will the Fed be unable to deliver these increases with European rates still hovering near zero? To understand the US interest rate curve, we continue to believe the best source of data is on CME’s website, located [here](#). Will energy continue to climb higher? Will Middle Eastern tensions increase? Will OPEC manage its crude production and what will ultimately happen with US shale output? We do not know the answers to these questions, but we know that hedgers and speculators will continue to execute transactions on both the CME and Intercontinental Exchange.

Updated on their website, it real-time, is a running tally of CME’s volumes. This is the vast majority of their revenue and is almost the definition of a transparent business. Analysts that wish to model this business, simply have to enter the data into their Excel spreadsheets. For example, in January of 2018, volumes for CME’s products were up 18% year-over-year. The composition of this growth is easy to see and model. Interest rates, which represent 51% of total volume, were up an impressive 15%. During the most recent quarter, interest rate trading represented 26% of CME total revenue. Equity Indexes, which represent 16% of total volume, were up 22%. In terms of CME’s revenue, equities are 14%. Foreign Exchange, while only 6% of volumes and 5% of revenue, was up 19% year-over-year in January. The volatile energy sector, which is 16% of total volume and 20% of revenue had volumes up 22% last month. Agricultural Commodity volumes rose 10% year-over-year and represent 11% of revenue and 7% of total volumes. On the next page, we show a pie chart breaking down the importance of each product to its percentage of total volumes.



Lastly, we realize that the current price reflects the current fundamentals and business. As analysts, we must always look forward. The last thing we want to do is pay current prices for past performance. The best leading indicator of future volumes is open interest on CME's platform. These are contracts that will need to be closed-out at some point in the future, so they represent trades that will happen on CME. After certain products reaching all-time highs in 2017 (metals and energy) open interest remains elevated. For example, interest rate futures open interest hit an all-time high on January 23<sup>rd</sup>, 2018 of 2,037. F/X is up 12% year-to-date and peaked on that same date in January. This bodes well for 2018 results and should provide a level of comfort that revenue and earnings estimates are attainable and even beatable this year.

#### Balance Sheet:

Large M&A, in 2007 to 2008, led CME to take on debt. That being said, it still has a very transparent balance sheet, unlike most traditional financials. As of last quarter, CME had debt of \$2.2 billion versus cash equivalents of \$0.7 billion. It has modest, regulatory cash requirements and management has deemed \$700million of cash as the cushion it will keep on its balance sheet going forward. Its regulator, the CFTC, has blessed this level of cash as CME's necessary hurdle. Quite simply, it has modest net debt of roughly \$1.5 billion and it generates significant free cash flow to easily cover its interest expense. Compared to our EBITDA estimate next year of over \$3 billion, CME is clearly not over levered. As we look forward, we expect CME to generate well over \$1 billion of free cash flow. Barring any unforeseen acquisition, we imagine this excess cash will be returned to shareholders via dividends.

#### Yield:

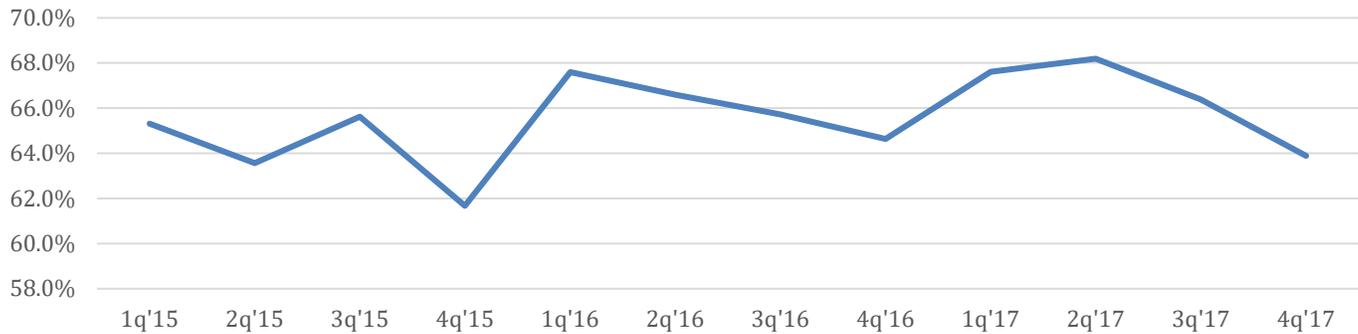
All management teams have a choice when redeploying excess free cash flow. Companies can choose to re-invest this capital in their own business, look to pay dividends or make strategic acquisitions. Over the last several years, CME's board has opted to do all three. However, the dominant focus of free cash flow has been to dramatically increase its dividend. We see no reason why this philosophy will change, as the Street has widely embraced this philosophy. Management remains committed to returning cash to shareholders through its standard dividend program, as well as its unusual variable dividend policy. Five years ago, the Board decided to return excess cash to shareholders. Cash on the balance sheet, in excess of CME's \$700 million threshold, gets returned to patient shareholders in January. Over the last seven years, CME has returned over \$9.5 billion to shareholders resulting in a 6-year dividend yield over 5%.

#### Recent Results:

CME just reported revenue of \$900 million, which was 3% lower than last year, which included the historical Trump election victory. Expenses were down year-over-year and were flat for the year. This type of positive operating leverage led to higher margins, which were an impressive 66.5% last year. Earnings growth for the year was only 5% last year, but we anticipate higher growth next year. CME management continues to operate an "asset light model". These decisions should lead to higher

margins and increased cash levels. With modest expense growth, CME is able to generate remarkable operating margins, quarter in and quarter out of over 60%. During the 4<sup>th</sup> quarter, CME's 64% remain the envy of the business world.

### Operating Margin



### Volatility:

Every quarter, we publish a newsletter highlighting our thoughts on big picture items like interest rates, inflation, market trends, geopolitical issues, etc. Our 1<sup>st</sup> quarter newsletter always attempts to forecast our thoughts on the year ahead. If you would like to read our 1<sup>st</sup> quarter 2018 note, click here. A year ago, we made some predictions about a Trump presidency and what we were anticipating. We were right on certain items (tax reform), but dead wrong on others (volatility).

We were expecting a Twitter barrage and a wild-card in The White House to lead to massive equity market volatility. We couldn't have been any more wrong. During 2017, virtually every asset class experienced reduced volatility. According to S&P data, Credit Suisse and Haver Analytics, the following chart shows how volatility disappeared. Days over 1% and 2% were practically non-existent and were replaced with all-time market highs. We think 2018 will be somewhat more volatile and the exchanges will see volumes climb, as a result.

Year	Days > 1%	Days > 2%	All-time Highs
2009	117	55	0
2010	76	22	0
2011	96	35	0
2012	50	6	0
2013	38	4	45
2014	38	6	53
2015	72	10	10
2016	48	9	18
2017	8	0	62
Avg ('09-'16)	67	18	16

### Catalysts:

CME cannot control volatility and volumes, but it can focus its attentions on its operations. It did add new products, some with huge fanfare like bitcoin futures. It streamlined and optimized some of its operations, with selling off stakes in other exchanges and winding down its European exchange and clearinghouse. In addition, CME exited its credit default swaps clearing business and focused its attention on making investments in new product launches and growing its exciting market data business. In addition, coming on April 1<sup>st</sup>, CME will be instituting a market data price increase for the first time in a few years.

There are several potential positive catalysts on the horizon. For example, the Fed balance sheet reduction should be a positive tailwind for interest rate volumes. The FASB is introducing hedge accounting rules which might spur volumes. F/X volumes might accelerate with the un-cleared margin rule. With the US shale boom, WTI is increasing its global relevance, which should boost energy volumes. On the equity front, CME is getting back the Russell 2000 contract. These are but a few of the many opportunities that provides us with comfort in CME's future quarters.

### Valuation:

When a company's share price fully reflects the prospects for its business, offering us a fairly low return for the commensurate risk, we look to sell our position. CME is actually the opposite of this. CME's underlying fundamentals are positive and it has significant tailwinds ahead of it. We seek to achieve long-term investment returns by identifying superior, growing businesses. One of our key tenants is that the equity markets offers premium return potential that can be captured through proprietary, in-depth research and security selection. It is our opinion that the Street is missing a wonderful business at an attractive valuation. In 2016 and 2017, CME was up 34% and 32% respectively. These two years of significant stock price appreciation has obviously raised CME's valuation. It is a leading innovator and has a business model that is the envy of the financial marketplace. There are vast network effects with both Globex, as well as the large moat around CME's clearinghouse structure. As the only pure pay derivatives exchange, it deserves to trade at a premium valuation.

At \$155 per share, CME has a market capitalization and enterprise value exceeding \$50 billion. Looking at this year, the Street is expecting under 6% revenue growth. Next year, estimates are only looking for roughly 7% growth. Based upon our heightened volatility expectations and better than Street estimates for volumes and pricing, we believe the top line could approach double-digit growth. With a well-built infrastructure, and only growing its expense base in the 2% range, we would imagine and expect for CME to post positive operating leverage.

Looking at 2018 and 2019 EPS estimates of \$6.28 and \$6.78, CME has a forward P/E of 25x and 23x. While this is a high valuation, we believe it is justified based on CME's dominant positioning and strong growth outlook. If our estimates of better than expected revenue growth, EPS growth could approach \$7.00 per share next year. If one rolls that same mid-20' forward P/E onto CME, it would yield a 10% to 15% of upside to \$175 per share. When you factor in the 4% to 5% dividend yield, a total return in the high-teens could be envisioned. While this isn't the 30% return we have received over the last few years, we like the risk / reward of CME and the opportunity to capture a mid-teens return over the next year or so.

### Risks:

Where could we be wrong? Well, as we said earlier, CME's valuation is higher than its historical average. If the overall market were to re-value, then CME might see its forward P/E contract. In addition, CME could decide to make an unwise acquisition. We have confidence that management will properly allocate capital and not make an unwise decision with "our capital" as shareholders. There are few businesses that can generate a similar margin on business, so any deal would likely be dilutive. The Street would not like to see CME do a dilutive deal or one that takes its "eye off the ball". While we do envision silly M&A, but it remains a risk. Lastly, another risk to the CME story would be unnecessary or burdensome regulatory oversight. When CME launched its bitcoin futures contract, it received all of the necessary regulatory approval to do so. With this contract, there was much scrutiny and concern about how it would impact not only that asset class, but the potential impact to the clearinghouse. CME understands all of these issues and has structured this contract to protect all participants. With exetreme volatility in bitcoin recently, CME's procedures and rules will be tested. It must come through this elevated volatility without a hiccup. We believe CME and its crown jewel clearinghouse will prove itself the ultimate exchange asset.

### How We "Played" Bitcoin:

Our regular readers understand and appreciate our long-term approach to investing. We will continue to "stick to our knitting" and invest in growing "Fin Tech" franchises. Investing in bitcoins would be akin to our investing in obscure foreign currencies.

It simply is not in our DNA. However, we will profit from the impending explosion of volumes underlying bitcoin trading. How? Well, we own the publicly traded exchanges. Whether CME or CBOE ultimately wins the bitcoin futures or options battle, we will benefit. Whether traditional bank CEOs want it to happen or not, digital currencies as an asset class are not going away. We do foresee a much tighter regulatory environment with heightened governmental oversight, which will make for very unprofitable days for some bitcoin owners and traders.

Whether bitcoin goes from \$19,000 to \$1,000 or rockets higher to \$50,000, our exchanges will benefit. Exchanges make money on volatility and are less concerned with underlying prices. Exchanges are primarily concerned with providing a venue for orderly price discovery. With bitcoin being the world's most volatile trading product, exchanges are quite excited to profit on this investor craving. We do not estimate and then bet on the price of oil, commodities, or currencies. We choose to invest and then benefit from impending volatility. We prefer to invest in secular growth businesses rather than making speculative bets on an assets future price swings.

One aspect of futures contracts we have always appreciated is its vertical clearing model. If you purchase a futures contract on the CME, it is not fungible across another exchange. You cannot go long a bitcoin contract on the CME and then look to offset it on another exchange. This trading concentration acts like a "moat around the franchise" and is critical when an exchange is looking to build liquidity and volumes.

In the exchange industry, there is a saying that liquidity begets liquidity and volumes beget volumes. There are significant network effects, as buyers go where the most sellers are and sellers are attracted to where demand lies. One of the interesting features of futures markets is that there are usually only one or two contracts that build liquidity and begin to dominate a contract's trading. The battle to see which venue will control bitcoin options and futures is occurring right now. The first few exchanges that build a core trading base will likely be the winning marketplace. With limited volatility in so many other asset classes, the bitcoin opportunity looks like an attractive category to enter.

#### **Conclusion:**

Either way, we will not participate in the traditional sense of betting on a digital or traditional currency. We invest in growing companies trading at a discount to their intrinsic value. As we have said many times, we prefer to invest in secular growing businesses, that have predictable ways of generating free cash flow and profits.

The world continues to struggle with generating top-line revenue growth. While inflation is slowly picking up, it is far from an immediate problem. Volatile social and political issues should garner headlines and occupy investors attention. We feel it is wise to invest in franchises that benefit from this uncertainty. It is our opinion, that in this type of environment, the derivative exchanges should outperform.

CME has a compelling business model that cannot be replicated through exchange consolidation. It has an unmatched and diversified portfolio of products. It captures interest rates, equities, energy, agricultural commodities, metals and foreign exchange. Over the last four decades, few companies can claim long-term growth matching CME's mid-teens volume increases. While most financials are opaque, CME is a transparent business model posting its volumes for all to easily view and track.

Looking forward, CME will benefit from several secular growth drivers. It is experiencing solid growth in its core business of futures and options trading. Volumes, the best indicator of growth and future revenue, are running high. Open interest, which is the best gauge for future volumes, is at an all-time high. The investment in globalization is starting to pay dividends, with excellent international ADV growth of 10% in 2017. Necessary infrastructure and capital costs to handle this future business have already been made. Over the next one to two years, CME should be able to leverage their business model to generate excellent free cash flow of ~ \$2 billion. Operating margins, which are already at an impressive 65%, could potentially rise higher. Lastly, management has accurately assessed the marketplace and has been at the forefront of returning excess capital to shareholders. Its unique dividend structure and variable 5<sup>th</sup> dividend policy has led to this impressive 5% dividend yield. We believe these company characteristics and future outlook bode well for the share price to reflect the underlying company fundamentals. Shareholders still can receive twice the yield of a 10-year US Treasury and above market growth rates. In our opinion, CME offers upside from these levels.

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