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The Dark Art

Bears always sound smarter than bulls. To sound like a genius, talk bearish with a British accent. However, short selling is one of the most psychologically difficult things to do in markets. The odds are stacked against you, because businesses earn returns on their capital. Markets, on average, go up over 9% a year (although as an aside, studies show that a small number of stocks are responsible for the majority of the returns of the market). Apart from this, there are several other reasons including: the tendency for management teams to always spin positive stories, the sell side's incentives to focus on the positive aspects of businesses, and in good times, the ability of management teams to sell their companies when they get in trouble. The best shorts become crowded and can have significant negative borrow costs, making the easiest shorts almost impossible to bet against. As a short, the system is set up against you.

Based on several psychological studies, human beings feel better steadily receiving consistent small rewards, even if it comes at the cost of earning more significant rewards in a lumpy fashion. This is not the way short selling works. The short side tends to give you consistent negative reinforcement, almost like constant torture, and then (if you are right) big payoffs on an episodic basis. Escalator up, elevator down as they say. Also, you feel like you don't need shorts when markets have gone up substantially and everything is doing well, which is usually when you need them most (on a long-term basis at least). Usually, when you feel like you do need shorts, you should be covering them, especially in non-recessionary times. Short-selling is an unnatural psychological practice.

There are benefits to short selling if you do it well. Based on discussions with other short sellers, reading about other hedge fund managers, and my own experience, the best short sellers roughly break even during bull markets. If you think about it, this is a good outcome, as they create a free put option on the market and, assuming they also manage money on the long side, give themselves the ability to buy when the market is down.

If you can short stocks that simply underperform your longs consistently, it allows you to use leverage on your long portfolio that takes less overall market risk but improves overall returns. One of the dirty secrets of the hedge fund business is that most funds use leverage, so shorting can help reduce systematic risks while boosting returns on the long side through leverage.

Short selling also gives you equity and emotional equanimity to buy when markets are down substantially. I think this is the best reason to short and the reason I haven't given up on it during the last ten years, a long, drawn out bull market. I also lived through 2008, and at GMT we had enough shorts that the fund lost about half as much as the market during the downturn, with shorts also giving us liquidity to survive a major liquidation and buy near the bottom.

It would be great to just be short in bear markets, but that presupposes you can predict bear markets. Bernard Baruch said, "Only liars manage to be out during bad times and in during good times." Peter Lynch also said, ""Far more money has been lost by investors preparing for corrections, or trying to anticipate corrections, than has been lost in corrections themselves." Hence, I largely favor keeping steady exposure except for when markets are at extremes (which I define as more than 2 standard deviations above or below the historic mean). A couple of times in my career it has been obvious to me we are going into a crisis prospectively, so I would like to keep some flexibility to be proactive if that occurs again. However, my shorts should go down much more than my longs in a major market drawdown and that is the main way I attempt to preserve capital during drawdowns.

My First Tuition Bill

I got my first lesson in short selling when I did a fair amount of research on Leap Wireless during the tech meltdown in 2001. I started reading about Leap Wireless, because one of the companies we covered at Raymond James, CenturyTel (now CenturyLink), had some short-term exposure to the company financially. They had already recovered those receivables, but I didn't know it yet, so I did some reading to understand the issue better. I studied Leap Wireless's financial situation, and it looked quite dire. The company had huge debt and negative cash flow with covenant issues and maturities that looked problematic at best.

I didn't cover the wireless companies in official capacity at the time, so I was able to trade this stock in my personal account. I sold Leap Wireless short and told myself I'd wait for the stock to go to $0. A few days later, some filings came out that showed that Mario Gabelli had increased his stake in Leap Wireless substantially, and then he made some positive comments to the press about the company. The stock, which I believe I sold short around $7, quickly doubled to $14.

I couldn't believe it. What did Mario Gabelli see that I didn't? I was bearish, and it was a bearish environment at the time. Leap's finances were disastrous which was clear from its filings. But more importantly to me, I was looking at my brokerage statements and couldn't believe I had just lost 2x my money in a short time period. What pain! At Raymond James we had to trade over the phone through "employee trading." Without giving the matter much thought, other than feeling pain in the pit of my stomach, I called employee trading and covered my short around $14. The broker who handled my order said something like, "I don't blame you," and I knew what I was doing was wrong. I don't believe the stock went up much more from there, and subsequently the stock went to $0 in short order.

Fortunately, my "tuition bill" on that trade was relatively low. I only shorted $5,000 of the stock, which even at the time was not that important to me vs. my savings and income level. But I learned about feeling pain on a trade and the importance of having courage in my conviction. I'm still learning about having courage in my conviction, a hard one for me, because I tend to be flexible and not stubborn enough (which also can be a strength in some situations). I was dead right in my analysis, but I didn't see the trade through because of how I felt psychologically. I just wanted to kill the pain I felt at the time. I also learned that professional investors, even ones with good reputations, can and will be wrong often, and you can only see the world through your own eyes and not someone else's.

I didn't reflect on it as much at the time, but I learned lessons about money management on the short side, timing shorts, and how obvious shorts can squeeze meaningfully even when it doesn't make a lot of sense in the context of the overall situation. Reflecting on it now, it was great that I learned so many lessons from that trade when the cost of the trade was really low relative to what I would do with it later.

Shorts Are About Timing but Also Finding Permanent Impairment

If there is one thing value investors tend to get wrong selling stocks short, it is usually timing. More than any other factor, you must get the timing right on a short. Longs have to have a reason to sell. Sometimes this is just the sentiment turning on the stock, but usually it is due to some fundamental deterioration. At the same time, most growth-oriented investors tend to short stocks that are too cheap. This can result in many kinds of issues related to companies getting bought out, restructuring, or fixing their problems. As on the long side, you want to line up everything in your favor on a short (quality, valuation, and timing), but timing is most important, and valuation should not be the primary initial focus. Valuation only tells you how much money you can make if the business or environment starts to deteriorate. Valuation can be a deal breaker if too low but should not be the main reason you want to short something (i.e. the price is too high is not a good enough reason).

Suppose you have shorted a company that is perceived as a growth company but, based on your research, you have a different perception of the business. If then the company puts up big growth numbers when they report earnings, you should be wary of your original thesis. Companies that are putting up over 30% sales growth are almost never good shorts (as long as that continues). You need to catch an inflection where growth slows down, either through conclusive research suggesting the business is deteriorating, or by seeing it in reported numbers.

This timing stuff is all pretty common knowledge among experienced market participants. However, in addition to timing, the best shorts are really about finding businesses that ultimately are going to be rightly seen as permanently impaired. Some are real businesses that are going to get impaired and some are just narratives promoters are temporarily able to sell to Wall Street. If you are short companies that are going to be permanently impaired, you go from time being against you to time being on your side. The 9% on average the stock market goes up every year doesn't matter because the company you are shorting won't have a business that investors eventually want to own.

Short Categories

I find the best shorts are grouped into certain categories. It is important to note here that most of the time these companies are companies that I would never look at on the long side because of their "fatal flaws." This means when you work on the short side, you tend to work on totally different companies than ones that you gravitate to on the long side.

Cycles

The exception to the idea that shorts and longs are totally different companies is when you are betting against a cycle, which usually results from overinvestment in an industry that has occurred. The best example of this in the past 5 years is in the solar and wind businesses a few years ago, where you had substantial overinvestment as a mini-mania developed around alternative energy but there were few differentiated businesses. In some cases, you will bet against even differentiated businesses if the cycle upswing they experienced is unsustainable enough.

One company that has experienced a super cycle in its favor that is unlikely to last is Mycronic AB in Sweden. In 2011, Mycronic generated SEK 1.2 billion in sales and SEK 2 million in EBITDA. In 2017, the company generated over SEK 3 billion in sales and SEK 923 million in EBITDA. Most of that increase came from sales of Pattern Generators, which are used in the production of photomasks for TFT-LCD and OLED displays. To oversimplify, the company sells capital equipment that is used to produce additional capital equipment (the photomasks that are needed to produce most displays for smartphones and TVs). It has 100% market share in this market, so it is not a bad business, in fact it is a monopoly for a small niche market.

The end market for flat panel displays in the past several years is actually down. Photomask sales have grown substantially because of technology changes in the market, namely, the adoption of OLED and AMOLED, which require more photomasks per display made and different types of photomasks. This in turn has driven a substantial growth in the need for Pattern Generators, which Mycronic sells to around 10 customers (the mask writers and vertically integrated OEMs like Samsung and LG).

In 2013, Mycronic sold 1 Pattern Generator and generated sales of SEK 379 million in this division (with a 6% EBIT margin), with most sales coming from spare parts and servicing. In 2018, estimates are for sales of around SEK 1.7 billion in this division, with over 60% EBIT margins.

The biggest problem Mycronic faces is that its Pattern Generators last a long time, so the new ones it has sold in this cycle will continue to be used by photomask makers to produce new photomasks. Indeed, after a boom in sales in 2003-2005, the company over almost a decade only sold on average 1 ½ Pattern Generators a year. When we speak to the photomask companies they say they don't need to order more Pattern Generators as they have bought enough machines to meet their production needs. So on the ground evidence suggests history is likely to repeat itself, with the Pattern Generator sales boom that has occurred since 2014 leading to a bust. While we don't expect the company's stock to fall back to its historic lows (the stock is up over 10-fold since the boom in Pattern Generators started), giving up half its gains when its earnings power diminishes significantly in coming years seems likely. If the market doesn't look through a potential prolonged downcycle, the stock could go even lower.

High Customer Concentration

Customer concentration very rarely works out for most companies. Either the big customer ends up leaving, partially leaving, or negotiating a better deal and the stock "blows up." One example of a high customer concentration short was American Superconductor Corporation, which GMT shorted in 2010 with the stock eventually going down over 99% from its peak.

American Superconductor (AMSC) provided megawatt-scale wind turbine designs and electrical control systems. It also offered a host of smart grid technologies, including superconductor power cable systems, grid-level surge protectors, and power electronics-based voltage stabilization systems for power grid operators. The company operates through two segments, AMSC Power Systems and AMSC Superconductors.

The AMSC Power Systems segment, which comprised more than 96% of revenues at the time, primarily supplied electrical systems used in wind turbines in addition to licensing proprietary wind turbine designs to manufacturers of such systems, providing consulting services to the wind industry, and offering power quality enhancement products for industrial operations. This segment also produced products to enhance electrical grid capacity, selling power electronic products that regulate wind farm voltage to enable interconnection to the power grid. Of the 96% of revenues generated by AMSC's Power Systems segment, at the time over 80% were generated by one customer, China-based Sinovel.

The company's sales growth had largely been fueled by its 2007 acquisition of Windtec, an Austria-based engineering firm that provided technology and licenses to third parties that manufacture their own wind turbines. AMSC had been selling core electrical components, such as its PowerModule power converters, for wind turbines for many years. One of its customers, Windtec, had begun incorporating these systems into the wind turbines it designed. Windtec received more than $100mm in orders within six months of AMSC's $13mm all-stock acquisition of the company in 2007. This was the first red flag we noticed. Why would a company sell itself for 13% of the orders it received in the next six months?

AMSC's largest customer at the time, Sinovel, was the market leader in China with about 27% share in the wind turbine manufacturing market. The Chinese wind market had exploded, going from close to 0 to 17% of all power capacity added to China's electrical grid in 2009, as the country added 75 GW of power to push total capacity to 865 GW, second only to the United States' 1,020 GW. The 13 GW of wind power added to China's grid in 2009 represented 34% of the 37.3 GW of wind power added globally and more than doubled the 12.1 GW of wind power China had at the end of 2008.

However, Sinovel was a relatively new company, founded in 2005. Further, a Sinovel employee with whom we spoke said that the company was started as a heavy machinery manufacturer with no experience in electricity generation. Thus, its partnership with AMSC made sense in that it allowed the company to immediately enter a growing market rather than wait to develop a vertically integrated, in-house product. One of the difficulties faced by Sinovel with respect to its relationship with AMSC is that the software that controls the electronics in a wind turbine is both complex and heavily encrypted, which prevents interchangeability between suppliers and necessitates that Sinovel continue purchasing its electronic components from AMSC.

Nonetheless, a Sinovel employee we spoke with said that the company would prefer to have its own electrical products rather than rely on an American company for core electronics. A former AMSC employee who at the time was in charge of Chinese operations for Vestas confirmed that statement and told us that Sinovel has been in contact with Swiss electronics supplier ABB and local suppliers and "is starting to build out its own capabilities." While Sinovel's contracts with AMSC ran through 2011, we believed that it was unlikely that Sinovel would continue to rely on AMSC as the sole source of its electrical components. Given that the Sinovel relationship generated around 80% of AMSC's revenues, this would have material impact on AMSC's business.

In 2010, we had a meeting with the CEO of the company at the time, Greg Yurek, who seemed to be selling the stock as fast as he could get away with it. He showed up at a conference I attended and met with me with his son sitting alongside him. He was extremely persuasive during the meeting, but I continually pressed him on why he wasn't more worried that he had nearly 90% of his business with one Chinese customer. He claimed they had lots of protection embedded in the underlying software and their relationship with Sinovel was secure. He was quite convincing; it can be dangerous to meet with management teams that are great salespeople.

However, at the time, both American Superconductor and Sinovel kept reporting worse and worse working capital, which was another red flag. The growth in wind power capacity created logistical issues and outstripped the pace at which China could connect the new sources of power to its grid. Transmission losses are high for sending power over long distances to cities, and 30% of China's wind turbines were not even connected to the national grid.

Eventually, Sinovel covertly stole American Superconductor's intellectual property, replicating what they were buying from the company and canceling their contract. While this was just the icing on the cake, the situation was absurdly unsustainable, and the stock was going to eventually collapse based on the numerous problems associated with the situation. Meanwhile, at the time the stock traded at over 20x EV/adjusted EBITDA and 42x EPS ex-stock comp. Since losing Sinovel the company has reverse split its stock and periodically issued equity while its business has never recovered.

One current name that I think has customer concentration issues is Westshore Terminals, which is based in and trades in Canada. Westshore Terminals has substantial customer concentration to Teck in Canada (63% of volumes), which supplies the majority of the coal volumes that come through its storage and loading terminal in Roberts Bank, British Columbia. Teck has been very public that it is unhappy with the service levels it has been getting.

Competitively speaking, alternate terminal facilities for handling coal include Ridley Terminals and Neptune Bulk Terminals. Ridley operates a single-berth coal loading facility in Prince Rupert (~1500 km north of Vancouver) that was built to service BC's northeast coal mines. Peak throughput at Ridley was achieved in 2013 at 12 million tonnes (reported capacity is 18 million tonnes).

Neptune is a three-berth terminal located in Vancouver's inner harbor partially owned by Teck (46% interest). The facility has a stated coal-handling capacity of 12.5 million tonnes, although Teck Resources has planned and obtained permits required for the execution of a project to expand coal handling capacity by approximately 50%. Teck announced in February 2018 that it will commit C$85 million of capital expenditures in 2018 to the plan. Last, a coal export terminal in Washington State (Millennium Bulk Terminals) is stuck in the permitting process, which if successful would, in the initial stage, be capable of exporting 25 million tonnes of coal and ultimately upwards of 44 million metric tonnes.

According to Teck's management on a recent conference call: "The current capacity at Neptune is 12.5 million tonnes, and as we've said, the upgrades that we're investing in will take it formally to 18.5 million tonnes but with upside certainly beyond 20 million and more. We do have volume contracts in place at Ridley of 3 million tonnes as well. So, where everything ends up you'll have to wait and see. Earlier in the year we said that we've approved C$85 million. We've now updated things saying we will spend C$120 million this year, and we are asking the board for approval for an incremental C$220 million to complete the project, and we expect to get that approval shortly. So, we're accelerating our work at Neptune and those are the numbers. So, if you add up the total cost of the project including what we have spent to-date would be C$345 million."

While the company has a take or pay contract with Teck until 2021, the prospect of losing possibly half of the company's revenue in a very fixed cost business should cause the business to de-rate in coming years. Why would Teck be investing in another port like this if the company was just posturing? While in the short-term the stock could just trade sideways until this issue comes front and center, most of the value in any company is in its terminal value, which should be significantly in question given the main customer is making alternative plans.

Fads

Fads are my favorite of the old maxim of short sellers looking for "the three F's – fads, frauds, and failures." Being short at the inflection or near the inflection of the unwinding of a fad is a great place to make significant returns on the short side.

While I have several shorts that have met this criterion, the best set-up I saw while at GMT Capital was Crocs, Inc. Crocs sold a comfortable and colorful plastic shoe. Despite being quite ugly, in my humble opinion, these shoes became extremely popular in 2005-2007. GMT, through our consumer analyst, got involved in 2006. Sales went from $13.5 million in 2004 to $108.5 million in 2005, $354.7 million in 2006, and to $847.4 million in 2007.

From 2005, EPS went from $0.26 to $2 in 2007. This short both demonstrates the risk of shorting a fad too early and the benefit of ultimately being short a fad. After going public and trading in the low teens as the fad took off, the stock went to a high of nearly $70. At the peak it traded at 35x ultimate peak EPS.

Our consumer analyst came back from the annual shoe show he attended in 2007 where the CFO at the time made some comments about having to lay off people. I remember seeing the first signs of weakness in quarterly results, the stock took a leg down from ~$70 to ~$40. I bought out of the money long-term puts on the stock. Of course, the fad eventually faded, and at the same time, competitors came into the market with cheap knock-off shoes. The financial crisis also hit, and in 2008 and 2009 the company lost money and the stock went to ~$1.

One company we've mentioned to some investors that seems like an obvious fad is Funko (FNKO/$18.45), which currently has an $900 million market cap. The majority of the business is "Funko Pop" dolls, like the picture below:

It is hard to predict when this craze will end, but it seems akin to Beanie Babies or Pet Rocks. The average age of the consumers of these figures is 35 years old and the top performing license partner brands in Q1 were: Avengers: Infinity War, Rick and Morty, Star Wars, Game of Thrones, Harry Potter, Stranger Things, Five Nights at Freddy's, and Overwatch. The company has done a good job of capitalizing on various pop culture themes and quickly creating new "Pops" for anything and everything. The company also has benefitted from expanding distribution substantially, with the company now in 25,000 doors globally. When this craze will end, we don't currently know, but it will be fun to short it in size when it does. Right now, the stock may be worth a small short since the valuation is high – an obvious fad should command a low multiple, not a high one. However, as Crocs demonstrates, sometimes these fads can command high multiples while the business is growing fast. We are just dipping our toe into this one for now until there is evidence of deterioration, although we think tactically a private equity stake sale is likely in the near-term.

Tech Widget Shorts

Tech widget shorts is a nickname Tom Claugus used at GMT Capital that stuck with me. A friend of mine illustrates the idea by saying, "all modem companies go to 0." Tech hardware companies that don't stay ahead of the competition get leapfrogged by better products and get wiped out all the time. My favorite of these are companies that only have one major product that you can handicap well. Usually these companies are first to market with an innovation, but then a bigger competitor in the overall market adopts the innovation and simply makes it a feature of their more encompassing solution.

One space where I shorted several companies in the past was the WLAN (wireless local area networking) space. Here, the best short of the bunch was a company called Meru Networks. Meru came public after Aruba Networks was a hot stock in 2010. The company grew fast after it went public and analysts touted the stock as "cheap," because the EV/sales multiple was lower than Aruba's. The space was highly fragmented, with more than ten competitors including Aruba, Meru, Ruckus Wireless, Aerohive, Cisco (who was the market leader), Meraki (before it was bought by Cisco), Motorola, and others. When we reached out to network experts, some distributors we spoke to barely knew Meru existed. Some customers liked the product, but we largely got feedback the product was overengineered and therefore it would be tough for the company to compete and still make money. In fact, the company had negative cash flow, was subscale, and the company's supposed differentiation was based on the handoff between Wi-Fi and cellular networks. This seemed less relevant than, for instance, Ruckus' (which we also eventually shorted) focus on coverage/capacity through smart antenna technology or Aruba's focus on security.

Despite weak cash flow, negative earnings, and mediocre prospects in a highly competitive market, the stock traded up to around 8x sales near its peak. We shorted pretty much all the Meru Networks we could get our hands on in the $20s as the stock started to eventually go down. The stock traded from the high-$20s to close to $1 per share as sales growth faltered, and it became obvious that the company didn't have anything special while the market for WLAN equipment became more and more competitive. Pricing pressure caught up to the company, the economics of the business didn't get better, and the stock traded to a call option until finally put out of its misery by Fortinet in a takeover at $1.63.

A current name we like as a short at Blue Grotto Capital is Vocera Communications. The company's core product are wireless badges sold into hospitals to help doctors, nurses, and administrators communicate with one another in large hospitals. At the mid-point of the company's guidance for EBITDA this year the company is trading at 48x EV/EBITDA. This might make sense if the company had huge growth, but in the latest quarter revenue growth was only 8% and year to date the company's hardware revenue is down year over year. While the company touts its success selling software to hospitals, overall software revenue is only 16% of revenue and grew 13% last quarter. Deferred revenue is down this year and has been flattening out for a year and a half. We think the multiple remains high mainly because investors are anchoring on growth rates the company was able to achieve in 2016 and 2017 when penetration of its product was lower. Now the company faces a relatively mature end market, with the potential for other spending needs at hospitals to cut into budgets for its products.

Technological Obsolescence

I view this category as different than tech widget shorts. While it's obvious in a tech hardware business you have to continuously evolve, and your market has to grow, many non-tech companies get impaired by technology adoption over time. As an example, at one point I shorted Acco Brands at GMT, an office supply manufacturer, because through observation and research we realized people were buying significantly less office supplies due to the adoption of tablets, computers, and other peripherals. Value investors were fixated on the company's historic free cash flow generation, but we thought this levered company's sales would deteriorate (many times having leverage on the balance sheet is key to finding enough downside in a short that looks cheap on P/E or free cash flow; we think the right metric for levered companies is EV/EBITDA). The retail space has been disrupted substantially by e-commerce while media has been hurt by Netflix and Amazon producing more content and providing their services for cheap prices or free, respectively.

Secular decliners with significant debt is a category of shorts we really benefitted from leading into the financial crisis in 2006-2009. We were short a number of newspapers during that time. One trade that stands out is the Australian newspapers which were slower to decline than the U.S. counterparts. We attributed this to Internet trends that were behind the U.S. at the time plus a stronger housing market in Australia. We shorted Fairfax Media and APN News and Media, which were both levered and eventually the secular issues associated with declining readership, the elimination of the classified sections, and declining ad dollars caught up with these companies.

If you are shorting secular declining businesses, the important thing is for: 1) the market and/or management to be caught off guard by the trends and therefore unprepared for the deterioration, and/or 2) there to be a lot of debt and fixed costs involved, which even if the company is not caught off guard can result in permanent impairment as the cash flow gets impaired by fixed interest and operating costs, respectively. If the management team is aware of the issue and the balance sheet is unlevered, many times the company can cut costs dramatically, buy other assets, or sell the company to deal with its problems.

Frauds

I find frauds are harder to short in a lot of cases than real companies, because they can test your patience. We have found numerous Chinese companies listed on the NASDAQ with very questionable accounting that have been very good shorts. Usually these become tough to borrow and since they are making up the numbers it is hard to find a hard catalyst (if your numbers aren't real, why show a deterioration?).

One fraud that stands out today is a company called PolarityTE (COOL), currently a $450 million market cap. While I managed to short it first, we note Citron Research written this one up, which can be observed on his site. The key issue here is whether the company really has a technology that is worth anything – the company has no patents, has undergone no clinical trials, and currently has di minimis revenue. The company's origin is a reverse merger through a video game company, Majesco, where the company purchased a "patent'' for $104 million, the application thereafter being rejected by the USPTO. The company's backers and promoters have a history of promoting companies that have eventually been permanently impaired. For instance, one backer Barry Honig, owned over 10% of Bioptix, which was supposedly investigating veterinary medicine. After Honig stepped in and brought in a new CEO, they changed the company's name to Riot Blockchain and subsequently Honig sold the majority of his holdings in the company on a spike. Honig was also issued a subpoena surrounding his role in suspicious trading in a company called MGT Capital, which is down over 99%. Many times nefarious board members, management teams, or auditors can be a good tip off that the company is not really trying to create a real business.

Story Stocks

Story stocks can be good shorts if the story isn't very good and/or the business underlying it has little shot of materializing. As an example, at GMT I shorted a little U.K. company called Nanoco, who produces Quantum Dots, primarily for TV displays. The stock spiked to close to £1.90 in 2012 as it signed a JV agreement with Dow Chemical, which gave it a big enough market cap for us to get involved. I looked at sell side notes on the company that laid out the expectations of analysts when the company came public years ago. Analysts were predicting 30% market share in LCD TVs while at the time the company had essentially generated 0 market share. There were other quantum dot companies that seemed to be getting more traction in prototype products the TV companies were displaying, making us skeptical as well.

The two differentiating factors for Nanoco's product and process are: the product is cadmium free and the company claims to have a manufacturing process that allows it to produce quantum dots in low temperature environments. The problem with this approach, according to a physicist and nanotechnology expert we consulted, is the quality of the quantum dot produced through Nanoco's process produces less color clarity than processes that use gas phase approaches and cadmium. Since cadmium has great "quantum efficiency," not using cadmium reduces the quality of output quantum dots are attempting to achieve. For instance, Nanoco claimed to have achieved 30% quantum efficiency for its quantum dots (hard to verify) vs. cadmium based QDs that have 70%+ quantum efficiency. Nanoco's cadmium-free product theoretically complies with ROHS environmental standards, which is why they use a cadmium free product; however, the company sacrifices quality to meet this environmental standard.

While we thought the jury was still out on whether the technology would be adopted or not, we didn't think Nanoco would capture the whole market due to competition, including Nanoysys and 3D Vision. We noted LCD TVs have extremely tight margins. Entire LED backlight units could cost $20-30 for a 32" TV. On a sub-component basis, there is only $2-3/TV for the QD or other phosphor. Also, the company through its JV would be splitting revenue with Dow and hence only achieving at best 20% of the revenue that the JV achieved (since then the company has discontinued its unsuccessful exclusive agreement with Dow). At a £450 million market cap at the time, we didn't think that even if the company achieved high share in the TV market, it could justify its current market cap. To this day the company's forecasts for significant adoption have not occurred. The company was forced to change JV partners, with the Dow JV going nowhere. With a market cap of under £150 million several years and equity offerings later, the company seems to be no closer to its bet on a nascent technology paying off.

Failures

Failures are really the result of companies with flawed business economics or levered balance sheets with cash burn. I would split this category up into: 1) companies with flawed business economics, and 2) mature businesses with too much leverage and weak-to-declining prospects. Often the flawed business economics companies also fit within the story stock category.

When I started shorting A123 Corp., I joked that the stock would go to $1, $2, or $3. It ultimately went to $0. A123 Systems produced lithium-ion batteries for use in the emerging transportation market. Like other advanced lithium ion battery manufacturers, the company was using a non-cobalt-based cathode material (phosphate) as the basis for its offering wrote the following at the time:

"A123 is developing or has developed batteries and battery systems for and/or with BMW, Chrysler, GM, SAIC, Delphi and BetterPlace. In April 2009, A123 signed an agreement with Chrysler to develop prismatic battery systems for Chryslers' ENVI electric vehicle program across several platforms. While the contract has no volume guarantees or minimum volume commitments, Chrysler said at the time of contract signing that it planned on bringing its first vehicle to market in 2010. However, in October 2009, Chrysler decided to merge its EV program with that of Fiat and eliminated many of the ENVI models. We have subsequently heard from several sources that Fiat has eliminated the program altogether. One former A123 employee with whom we spoke and who is still in touch with the company said that management believed the Chrysler deal was "dead in the water." Most Street estimates still have Chrysler as the most significant customer going forward, which we believe bolsters our short thesis." The fact Chrysler walked away from the company as a supplier is what originally got us interested in this company as a short.

In terms of the other U.S. automakers, GM initially partnered with A123 in January 2007, announcing its intention to use A123 batteries in its Saturn VUE Plug-in Hybrid, which was ultimately scrapped along with the entire Saturn brand. Later, A123 was in the running for the Chevy Volt contract, which was instead won by LG Chem subsidiary Compact Power, leaving A123 locked out of GM. While A123 pursued an alliance with Ford, the automaker eventually decided to source batteries for its electric and hybrid-electric vehicles from Johnson Controls-Saft, a joint venture of Glendale, Wisconsin-based Johnson Controls Inc. and the French battery maker Saft Groupe S.A.

With the Chrysler program dead and the other two major U.S. manufacturers partnering with different vendors, the best opportunity for A123 appeared to be through its 49% joint venture with Shanghai Automotive Industry Corp. (SAIC), which will be releasing a hybrid car in late 2010 (which we believe will sell for more than $40,000) and another model in 2012. A123 signed a contract in 2008 to produce hybrid batteries for BMW, but BMW had since used other suppliers for its models at the time.

The only other near-term opportunity for A123 was the passenger market with Fisker, the automaker into which A123 invested $23mm in January as part of a larger package of $115.3mm raised by the automaker to access a $528.7mm U.S. DOE conditional loan—an "investment" that struck us as somewhat dubious given that Fisker had previously chosen another battery supplier. Under the arrangement, A123 was providing the batteries for the $80,000 Fisker Karma, which was slated for release in Q3'10. Two separate experts with whom we spoke estimated that stimulus money had created what would amount to a 50-60% overcapacity of batteries chasing the electric and hybrid-electric vehicle markets. A Deutsche Bank report at the time cited several automakers as having already seen bids in the mid-$400/kWh range for large volume EV battery pack contracts in the 2011/2012 time period (implying a 30% decline from approximately $650/KWh in 2009). We estimated that A123's production cost was around $700/kWh in 2009, which suggested that its costs would have to decrease 55% over that timeframe in order for the company to reach 30% gross margins, which sounds far too optimistic. While new markets would undoubtedly open up in the medium-to-long term, we also believed new competition would continue to emerge and pricing would continue to decline, thus preventing gross margins from expanding meaningfully.

Very few battery market participants have achieved 20% gross margins, let alone the 30% gross margins touted to the Street by A123's management. BYD Group, the China-based battery, automotive, and IT component supplier in which Berkshire Hathaway held a 10% stake, is the world's leading provider of NiCd and lithium ion batteries, with 65% and 30% market share in each category, respectively. We spoke with two experts who were familiar with BYD's business—both having toured its manufacturing facilities and met with management—and each praised BYD as the best-managed company in its space in terms of both its successful, vertically integrated manufacturing model and stringent focus on costs.

Aside from market share and scale, two other key differentiators between BYD and A123 were: 1) BYD's battery operation benefits from full vertical integration (it produces the materials from which its batteries are manufactured, versus AONE, which purchases all raw materials on the open market); and 2) it manufactured the higher margin battery casing/pack in addition to just the cells. Regardless, despite BYD's tremendous scale, cost, and product mix advantages, we estimated that the company's battery businesses generated gross margins of just over 20% in 2009—about 500 basis points below consensus 2012 gross margin estimates for A123. In fact, the former CEO of Valence who has worked in the battery industry for more than 30 years told us that, in the type of business in which A123 operated, "you might get 10% gross margins if you're lucky."

So, we looked at the business and said: 1) the revenue opportunity is not materializing as the company expected, and 2) even if the revenue opportunity did occur, the margins are going to be so low the business will still burn massive amounts of cash. We went through and analyzed the potential for customers and competitive environment on a granular basis and thought that the company's chances of scaling revenue or having a feasible cost structure were low. Eventually the company did go bankrupt as the cash burn was too high for the company to survive.

What Does This Company Do?

It has been our experience that if you can't figure out what a company does after doing a few hours of research on it, then it is clearly a short. A classic tactic management teams take when their business model is not robust or there is a lack of substance to the business is to obscure the truth by throwing out buzzwords and hyping up the story with non-sequiturs. Time and again we have seen management teams confuse and excite investors by claiming their business is aligned with huge growth trends but when questioned on the details the business model doesn't have meat to it or is deliberately confusing. One space we have found this occur a lot in is ad technology companies.

One company that we came back to again and again on the short side was a little company called Marchex. The first time GMT was short Marchex, the company was primarily arbitraging search traffic with websites that included misspellings of popular search terms and various other domain names, which it slowly sold off to generate revenue. The company at the time was claiming it was on the leading edge of Internet advertising but its real business model was slowly liquidating the business.

The second time it popped up the company had changed its business model to benefit from "voice advertising," whatever that meant (note this preceded the growth of smart speakers and was in the early days of people using Google for voice searches). Generally, if a management team claims it has changed a company's business model completely and the model they are embracing is confusing, things are not likely to end well. The stock rallied significantly on high growth, but we did a call with a big customer, Allstate, who suggested that Marchex's product was commoditized and their spend with them would not grow. The insiders also tipped us off by selling heavily following the rally. We also noted the CEO at the time had a pony tail, which doesn't always mean something, but in our experience is usually a bad sign (I also would note that gold jewelry and heavy tans on management are usually good short tip offs).

An on the run name in this category, which we are currently not yet short but are monitoring, is Quinstreet (QNST/$14.45). This company was an IPO short a number of years ago. The company's primary business, providing leads in various verticals, is a difficult one. Quinstreet went public in 2010, with its main business at the time being lead generation for the for-profit education vertical, which experienced some difficulties to say the least since that time. Now the company has experienced a resurgence primarily through lead generation in the insurance vertical (coincidentally, this is the same vertical Marchex profited from on its unsustainable run, although Progressive is Quinstreet's main customer).

Quinstreet's sources of traffic are constantly in-flux, the quality of leads it provides are of questionable quality and in some cases the result of oddly connected sites that have nothing to do with insurance. That said, we think a few other insurers may increase their spend with Quinstreet in the immediate future, so this one is a "wait for the inflection point" short where we'll get involved once we see things weaken. We think the fatal flaw in most ad tech and lead generation companies is their opaque nature, which eventually advertisers start to question. Either the ROI comes into question or the advertiser starts to worry about the wisdom of tying their brand's reputation to sites like www.bankdealguy.com and www.walkintubguide.org (two Quinstreet affiliate sites). The lead generation companies that have their own sites have a more sustainable business model as their margins can be higher since they get all the ad revenue associated with the site. Quinstreet is more of a middle-man, whose presence makes it somewhat more appealing for big brands to advertise on obscure sites because it is aggregating their traffic and auditing the traffic. The fatal flaw here is that the small websites are happy to go to other middle men unless Quinstreet pays up for the traffic source. We also think there is a significant portion of the traffic they are selling to advertisers that is of highly questionable quality.

IPOs

IPOs are not a category of company, but they are a good place to look for shorts. It's hard for underwriters to stay unbiased on companies that are paying them big fees to take them public. Also, the companies coming public have not been in the eyes of public investors for a meaningful period yet, leading to the potential for significant mispricing of these assets. From a behavioral standpoint, management teams and private owners of companies have an incentive to sell stock at the highest possible price. Especially when the management team has a checkered track record, it's good to dig in and do some research.

One of my favorite IPO shorts was SFX Entertainment. SFX Entertainment claimed to be the world's largest producer of live events and entertainment content focused exclusively on the electronic music culture ("EMC") genre, based on attendance and revenue. (EMC music is characterized by largely computer-generated audio set to a very high tempo, often mixed by DJs, and typically played—along with laser/strobe light and other effects—at dance-based entertainment venues like urban nightclubs catering to people in their 20s and 30s.) The company had no operating businesses or assets until 2012, at which point founder and CEO, Robert Sillerman, capitalized the entity and began acquiring various promoters and organizers.

The CEO and Chairman's previous roll-up adventure in an undefined new space didn't work out very well. CKX Entertainment, which owned American Idol and Graceland primarily, plummeted from $29 to $4.45 before being taken over by Apollo in 2011 for $5.50 per share. We were short CKX Entertainment and knew Sillerman was a promoter that increasingly seemed to be off kilter based on his public behavior. At a conference in December that year, he wore a top hat and at one point during his presentation he removed his hat, tapped on it with his pen, looked inside, and then said there was nothing in there and continued talking.

In its first earnings release as a public company, SFX Entertainment touted that the "revolution has begun," with the electronic music festival company growing its attendance by 40% pro-forma for its myriad acquisitions in the quarter. However, the press release stood out more for adjustments and caveats in the footnotes of its release, which were naturally glossed over by the investment banks who took the company public and were drooling over a line of M&A advisory deals on the horizon given the company's roll-up strategy.

The company reported $12.844 million in pro-forma EBITDA, although before adjustments to GAAP results, pro-forma gross profit was only $11.334 million, and the company had over $62 million in SG&A. In the footnotes, the company adjusted "non-recurring expenses, transaction costs, recoupable advances, EBITDA associated with ID&T non-consolidated affiliates, and elimination of costs associated with cancellation of third day of Electric Zoo Festival (subject to insurance recovery)." Generally, fictious presentations of adjusted figures is a good sign for a short.

Framing

As we highlighted in prior pieces, when you can use a better company as a sanity check for the bull case and still come up with a very bearish conclusion, you are usually right to sell the stock short. Considering Live Nation had a reasonably similar geographic profile and was a key competitor in the electronic music festival genre, let's look at Live Nation's margins. We backed out Live Nation's ticketing arm because SFX doesn't have a meaningful ticketing business (the company had recently announced the acquisition of 75% of a small Dutch ticketing business called Paylogic for $22 million, but we didn't believe this will be very meaningful to overall results with the purchase price less than 3% of the enterprise value of the company), and ticketing is a much higher margin business than the concert promotion/electronic music festival business.

	EBITDA Margin 2013E
Live Nation Total	8.0%
Live Nation Excluding Ticketing	4.2%
SFXE 2013 "Pro-Forma Estimate"	6.2%
SFXE 2015 Sell Side Consensus	21.7%

Margins based on 2013 management guidance and 2015 sell side consensus based on Bloomberg compilation

The normalizations SFX included in its numbers make its margins highly questionable to begin with. Based on comparable margins from a meaningful competitor that has significantly more scale and more profitable business mix, sell side estimates for EBITDA margins in 2015 for SFXE looked absolutely ridiculous. If we assumed SFX could scale its EBITDA margins to where Live Nation was *including* LYV's ticketing arm (which makes no sense given the ticketing business for Live Nation achieved 21.5% EBITDA margins that year), the company traded at 20x EBITDA on 2016 even assuming *organic* sales growth of 100% over the next three years (an outrageously optimistic assumption on our part)—more than twice the valuation of an objectively superior and highly cash-generative Live Nation business.

Another way at getting at this company's valuation was simply looking at what the company paid for acquisitions in the past year and where the company's valuation is currently. While the whole may be worth slightly more than what the overall amalgamation of assets purchased represents, we noted the company bought these assets quite recently and the purchase price represented what management teams with in-depth knowledge of the businesses were willing to part with their stakes.

Acquired company	Date	Stake	Paid-to-date	Future liabilities
Dayglow LLC	7/31/2012	100%	$12.1	
Disco Donnie Presents	6/19/2012	100%	$8.2	
MMG Nightlife, LLC	12/31/2012	80%	$16.9	$2.6*
BEATPORT, LLC	3/15/2013	100%	$58.6	
ID&T	To close by 10/31	51%+49%**	$95.2	$10.4
i-Motion GmbH	To close by 10/16	100%	$21.5	$3.0
Totem Onelove	To close by 10/31	100%	$77.6	$8.3
Made Event	To close by 10/31	70%+30%^	$35.0	$26.0
	Purchase price of acquired assets		**$325.1**	**$50.3**
	Pro-forma cash (post-IPO)		$143.6	
	Interest-bearing debt		$97.2	
	Earn-out (future) liabilities		$50.3	
	Net cash/(debt)		($3.9)	
	Equity value		$321.2	
	Shares outstanding		84.8	
	Value per share		**$3.75**	*(to nearest $0.25)*

** = company estimates*
*** = company to purchase remaining 49% by 10/31*
^ = company owes Made a $10M promissory note, but has also agreed to purchase the remaining 30% of Made Event in 2018 at greater of $10M or 10x 2017 EBITDA (est'd at $16M in company filings)

Note the stock at the time was priced around $11.00. That meant the equity market was willing to price this list of questionable quality assets with limited data on their history at almost 3x what management paid for them, primarily in the year they purchased them.

Margins were not the only issue surrounding this company. The company has a series of hard-to-parse earn-out obligations that diluted shareholders in the underlying business over the next few years. In addition, we question whether the electronic music festival business is truly here to stay or whether it is a fad. Obviously, consumer tastes in music tend to change over time.

One bull case being circulated by the company and its underwriters was that the company would grow its sponsorship (advertising) business massively. However, to understate the absurdity of sell side estimates at the time, one of the main underwriters estimated the company's sponsorship business will grow to $273 million by 2017 from its then current level of $7.7 million. By comparison, Live Nation was expected to achieve less than $200 million in sponsorship revenue that year. At the time, Live Nation's level of non-sponsorship and ticketing revenue was 16x that of SFX Entertainment, highlighting the absurdity of the street's sponsorship revenue forecasts. Basically, Wall Street was forecasting SFX Entertainment's festivals and concerts would turn into a giant billboard with massive CPMs, and this would not dissuade its counter-culture driven users from attending its events.

We shorted the stock starting around $10, and we scaled into a meaningful short position over a couple of quarters. We heard stories of inappropriate behavior by management and the cash flow statements the company reported were increasingly bizarre. Organic growth eventually turned negative, and the company started making odd statements about its sponsorship business coming up short of the absurd expectations we highlight above.

Not to be outdone by his previous crazy behavior, Sillerman claimed he would buyout the company. I think the stock was around $3 or $4 by this time. There was a lot of weird financial posturing by him and the company after this, but eventually the company went bankrupt. However, when a CEO looks like this (below), usually things work out for you on the short side.

Underlying Tenants of Successful Shorts

There are a few overarching themes to what I like to short as some of the examples may illustrate.

First and foremost, similar to the long side, it's important to find asymmetry in short ideas. This means that you must probabilistically disprove the bull case. While you will get some wrong, most shorts you find should have little upside and substantial downside. At Blue Grotto Capital, our hurdle rate for shorts is 50% downside or more in three years. This means the business has to be substantially mispriced or likely to deteriorate badly. The best shorts businesses' get permanently impaired. So, looking for a substantial flaw in the business is the most important thing to find. We think it is important to "hit home runs" on shorts, because it is inevitable that you are going to get more shorts wrong in a bull market as the market "melts up." The only way to offset this is by achieving substantial gains in the ones you are right on.

Second, most of the companies I discuss were unprofitable or burning cash. This is a tough headwind to fight for most companies. Many of the companies try to paper over their cash burn with "normalizations" – the more blatant the company is about adjusting their earnings the more likely it is to be a short.

Third, almost all of them are bad businesses. I went back and studied all the stocks (long and short) that I made substantial returns in over time. The easiest generalization to make on the shorts that worked was they were bad businesses with weak underlying economics. This means shorting subscriber businesses is usually a bad idea, because a subscriber business is usually less vulnerable to meaningful deterioration in the business unless churn is extraordinarily high. It's especially hard to short subscriber businesses with low capital intensity as these businesses are usually takeover targets and their subscriber bases are coveted. As discussed above, timing is important in shorting, but equally important is shorting businesses that don't have time on their side.

If you give me a choice between shorting a fast-growing subscriber business at an absurd valuation and a lumpy business at a medium valuation, I would almost always choose the latter. The lumpy business is more likely to present opportunities to cover when it shows deterioration. The fast-growing resilient business will have setbacks in the stock market, usually during corrections or bear markets, but these are harder to predict and tend to be short-lived (unless you are in a real bear market and then everything will go down anyway).

The Psychology of Shorting and Pressing

It's important to note that while a lot of the short cases I highlight went down substantially and were great shorts, the stocks at first "put up a fight" in many cases. While I viewed the stocks as asymmetric shorts, the market usually takes a while to come around to my point of view, especially when I start shorting in an uptrend. When I was short Tuesday Morning Corporation, which I mentioned two letters ago, the stock went from an initial price where we shorted it at $18 to a peak close to $23 over the course of six months. This may not sound like a big deal, because the stock eventually went to low single digits. However, at the time it felt awful to be losing over 20% in a short as the company beat its same store sales estimates for a few quarters before our thesis played out.

In early 2015 when the company first missed estimates and the stock fell meaningfully post quarter as margins and comps disappointed, my experience paid off. We had been sitting with a medium sized position in the short for six months, and I was frustrated by losing money in the position. However, when I saw the thesis playing out, despite the stock being down, I started to add to our position every week. It was a low-quality company that defied gravity for some time, but this was the time to capitalize. While the stock was still near our cost basis, the business was showing obvious meaningful signs of stress.

I wouldn't have pressed that name earlier in my career, but I have learned over time not to anchor on what has happened to me in a stock and to focus on what is likely to happen going forward, which is psychologically more difficult than it seems. Shorting stocks on the way down is usually the right thing to do. It is also, I have found, one of the toughest things to do psychologically. The problem with shorting stocks as they are going up is you usually won't pick the exact top. However, if you don't establish a position in a short before it takes a meaningful leg down, you generally feel like you "missed it." Problems at companies, when they come out, tend to be like cockroaches. There is never just one. Once a business starts to deteriorate, it rarely bounces back right away. This is the reason why momentum works as a factor in the markets.

Conclusion

As with the long side, it's important to line up asymmetry on shorts by looking at the best-case scenario for the company and shorting when the stock is trading at or near that price. Taking an outside view on where a company has made acquisitions vs. where the equity markets are valuing those companies can be a good sanity check. Always look at bad companies with tough economics in their business if possible, as this can cover up mistakes in timing or management quality. The behavior of insiders can indicate whether your timing is on point. It is better to get involved after the first "tip off" that things are not going according to plan, but it is inevitable that many shorts will "put up a fight." After getting involved, forget the price of where you got in, especially if it is already down which is usually a good thing (the timing is better). If the stock puts up a fight, try not to let it impact your psyche – just because you have taken some pain in a position doesn't mean it isn't a good prospective trade.

We hope this provides a good overview of how I think about short selling. Many hedge funds just use "proxy shorts," shorting big, boring companies that are more stable, because they are looking to just ride beta on the long side. We largely do the opposite of that by looking for shorts that can go down substantially based on whether the business is fickle or even non-existent. When we have experienced success on the short side, we had big winners that cover up the losers. In this way, if you only have a 50% hit rate on the short side, which is quite reasonable during a bull market, you can still make money or at least break even. When you are wrong on a short, it is important to give up when the fundamentals demonstrate that your thesis is wrong. This is different from covering based on price action, as many heavily shorted stocks can spike multiple times on the way to being wonderful shorts.

Sincerely,

Ben Gordon, CFA

Founder and Portfolio Manager

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