Booth Laird
Investment Partnership

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Q3 2015 Newsletter

We have been hard at work researching new ideas in this turbulent market. As a result, we did not have time to write a full analysis of one of our holdings like we typically prefer to do. We decided it might be interesting to walk you through our thought process for a recent decision we made regarding a topic a lot of people have been asking about – Volkswagen's "Dieselgate."

Volkswagen (VW) was recently hit with the worst scandal in the company's history post-WWII. Thankfully, we had already sold out of Volkswagen this past April, fairly close to the 52-week high. When companies are hit by specific issues and the stock plummets, we come running. The issue is sometimes short term in nature with little to no long-term impact and/or the issue is not nearly as severe as the drop in the stock price would indicate. Rarely does it happen to a company with which we are already familiar, so we were excited to see if now is the time to buy back into VW. We also still held some Porsche stock, which was just a shell company that owned 32% of Volkswagen's stock plus a few billion euros in cash, because it was available at a 25% discount to its net asset value.

What Happened?

The following excerpt from the Financial Times sums up the issue well:

> Germany's Volkswagen, the world's second-largest carmaker, was accused on Friday of cheating emissions test by fitting nearly half a million VW and Audi vehicles with devices designed to bypass environmental standards.
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> The Environmental Protection Agency ordered the recall of 482,000 diesel-powered vehicles sold in the US over the past six years which featured "defeat device" software that detected whether the vehicles was subjected to an emissions test.
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> The cars would switch on emissions-control devices for tests but under all other circumstances could emit nitrogen dioxide at up to 40 times the permitted level, the agency wrote in an enforcement note.
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> Volkswagen has advertised its diesel-vehicles as a fuel-efficient alternative to the petrol-powered vehicles that make up most of the US passenger car fleet. While diesel vehicles' overall fuel consumption is lower than that for petrol-engined vehicles, their emissions of other pollutants are generally higher…
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> The EPA's action covers vehicles dating back to the 2009 model year, which went on sale in 2008.

The emissions in question are nitrogen dioxide, commonly called NOx, as opposed to carbon emissions. Diesel engines typically produce lower carbon emissions but higher NOx emissions. NOx is what leads to smog, so has a more tangible effect on the environment.

Reports subsequently surfaced stating that VW had been approached by the EPA a year earlier with knowledge of the defeat devices. Volkswagen was given an opportunity to correct the issue without the EPA going public. According to the reports, the company subsequently issued a recall for the affected diesel engines in the U.S., citing a "software glitch." Whatever Volkswagen did was ineffective in fixing the issue, leading to the EPA finally going public with the findings.

VW's response was telling. Instead of trying to deny and deflect, VW confirmed the findings and apologized. They did not say they needed to conduct their own investigation. They immediately admitted the company had intentionally tried to commit fraud with these defeat devices.

The bad news did not stop there. The company issued a second press release a couple days after initially admitting fault, which included the following excerpt:

> Further internal investigations conducted to date have established that the relevant engine management software is also installed in other Volkswagen Group vehicles with diesel engines. For the majority of these engines the software does not have any effect.
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> **Discrepancies relate to vehicles with Type EA 189 engines, involving some eleven million vehicles worldwide**. A noticeable deviation between bench test results and actual road use was established solely for this type of engine. Volkswagen is working intensely to eliminate these deviations through technical measures. The company is therefore in contact with the relevant authorities and the German Federal Motor Transport Authority. [emphasis added]

In essence, the company admitted that 11 million vehicles cheated emissions tests. The U.S. has the strictest limitations, so there is some thought that the vehicles would still pass emissions tests in other countries. However, the road performance of the tested vehicles supposedly exceeded the test performance by a magnitude of 30 or 40 fold. I have trouble believing the majority of countries in which those vehicles are located (mostly Europe) have limitations 30 to 40 times higher than the U.S.'s limitations.

<u>Potential Cost to Volkswagen</u>

We figured the additional costs would include:

1. U.S. fines – The fine under the Clean Air Act is up to $37,500 per violation. In this instance, each car (all 482,000) violating the law counts as a single violation. Therefore, the potential fine in the U.S. is 482,000 x $37,500 or $18 billion, which translates to nearly €16 billion.
2. Other country's fines – the vast majority of the vehicles using a defeat device were sold in Europe, but countries like South Korea announced they too were opening up an investigation once the news broke.
3. Lawsuits from customers who a) were lied to and paid up to $7,000 more for the "clean diesel" tech and b) who had to see a plummet in resale value of their vehicles, which includes the likes of Porsches and Audis.
4. Cost to buyback the clean diesel vehicles from dealers across the world since they can't sell any of those vehicles now.
5. The cost to actually fix these vehicles via recall.
6. Lost future sales from angry customers.

The company has already announced a reserve of €6.5 billion for this issue, but the wording of the press release indicated that it was solely to address item number 5 in the above list – recalls.

We tried to look to precedent for the U.S. fine since it appears to have the potential to be the largest expense. However, there was no precedent we could identify. The BP oil spill was an event cited by some as possibly serving as precedent. However, that fine, which was $5.5B, was for a single event resulting from gross negligence. VW committed outright fraud and were even told to stop but did not. I think the U.S. regulators will be out for blood here, especially since it is not a U.S. company.

Europe has looser emissions standards than the U.S., but even if these vehicles did not violate the maximum limits even without the defeat device, the existence of the defeat device will likely not go unpunished. Germany will do it's best to protect VW, but Germany's leaders now also fear for their entire manufacturing industry, whose reputation of quality and integrity took a huge hit with this scandal. Other European companies might see an opportunity to hurt a German company to benefit their own home country's companies - France especially. The French Finance Minister called for inquiries within days of the news breaking, and for those inquiries to be done at a "European Level", indicating he did not trust Germany to police VW harshly enough. So the European fine might also be very expensive.

The lawsuits from angry customers will also be seeking billions of dollars, and they appear to have a solid case. As one would expect, class action lawsuits were filed almost immediately around the U.S.

We also tried to handicap the potential lost sales from angry customers. Recalls stemming from safety issues might be seen as a precedent, but typically only the customers who actually experienced loss from those safety issues are angry enough to abandon the brand indefinitely. In this case, VW actively set out to deceive every single customer that purchased a diesel-engine vehicle containing these defeat devices. Some might not care about the environmental impact of increased NOx emissions. Most likely will care about being lied to, which is never received favorably or forgiven quickly by consumers. Competitors will likely do their best to remind customers of the deceit as well. Unlike recalls, which every manufacturer experiences and, therefore, cannot exploit, this issue is relegated to just VW. While industry experts say everyone cheats on these emissions tests, the fact is that only VW was caught. For now and for the foreseeable future, VW is the only one with egg on its face.

To get an idea of the potential financial impact from lost customers, we first tried to determine the revenue earned from the sale of diesel vehicles containing this software. We estimated that there are roughly 100 million Volkswagen vehicles on the road, so approximately 10-11% contained the defeat device. 10-11% of annual auto sales is approximately €17 - 20 billion in annual revenue, ignoring the fact that diesel vehicles have a higher average purchase price than most Volkswagen vehicles. €17 - 20 billion in revenue would translate to a few billion euros in cash flows earned annually. If 25% of customers are angry enough to abandon Volkswagen for competitors, that could impact annual cash flows as much as €1 billion, a material amount. That 11 million vehicles are just the diesel vehicles containing a defeat device. The company stated the EU 6 diesel engines do not contain a defeat device, but those vehicles are still sold under the same brands and will still be negatively impacted by lost customers. As you can see, the damage from lost customers could become very costly.

Our Analysis

Ultimately, we decided we could not precisely quantify all of these potential costs. So we decided to take an indirect approach. We decided to re-value the company as though this issue had never happened and then compare that to the current market cap. The difference would be the total cost for this issue that is priced into the stock. If the cost priced in was €50B, for example, we could consider that amount to be pretty excessive and, therefore, worth further investigation. €10B, on the other hand, would not be nearly enough margin of safety to justify further analysis.

To value the company, we went to our most recent valuation, which was done in January of this year. Assuming a higher discount rate now to account for greater management risk than we previously thought, our valuation was reduced from €131B to €75B. That might seem excessive but who knows what else the company has done. At a valuation of €75B compared to the market cap at the time of €51B, the market has priced in a cost of €24B. That might actually be a reasonable price. We think €20B is fair game considering the potential costs outlined above. The company set aside €6.5B, but that appears to only cover the costs of the recall.

The bigger part of our analysis involved management. How could we trust them now? The CEO, Dr. Martin Winterkorn, had previously earned our respect with the way he helped engineer a substantial turnaround at Volkswagen beginning in 2007, leading the company to higher margins on higher volume. The company had already reached its 2018 goal for 10 million unit sales volume a full four years ahead of schedule. Under his watch, the company had also leaped ahead of the competition in developing true global platforms, which leads to substantial cost savings and is every auto manufacturer's dream.

Winterkorn's response to this scandal was very disappointing. He essentially denied any knowledge that this was going on. Given the fact this software was not implemented until after he took office and then used for 7 years, it is very difficult to accept he had no knowledge of this issue. He has a PhD in metallurgy and metal physics, is an engineer by training, and at one point was head of global quality assurance at VW. With that background, he honestly expects us to believe he never questioned how their "clean tech" for diesel was so much better than the competition's? That admission is impossible to believe. He had to go at that point despite his successes. Whether this happened under his nose without his knowing or this happened with his full knowledge and permission, the culture was clearly broken at the company and in need of reform.

If VW is willing to so blatantly commit fraud in one area, even ignoring, in effect, the EPA's warning a year ago, then where else is the company willing to circumvent the rules? Trustworthy management is one of our investment tenets, and we now have trouble checking that box with VW. Mistakes, even expensive ones, we can tolerate and even profit from. However, fraud will never be tolerated. After all, there is rarely just one cockroach in the kitchen.

Our Decision

Clearly, even for our upside valuation the margin of safety was slim to none. Our downside valuation was much worse. Further, management had proven itself to be less than trustworthy. The old CEO was gone, which is a good start, but it takes time to earn back trust. The stock is nowhere near cheap enough to give new management a chance.

We also felt confident that the reserve amount the company put out was premature and likely going to be materially too low. When the company inevitably increases the expected cost of this issue, the market will likely react negatively. Further, we had to consider if VW would be forced to cut its dividend if the costs piled up, which would really impact the stock negatively.

We decided against investing back into Volkswagen and decided to also sell our remaining Porsche shares even after the stock had declined. We knew it could get much worse, and dealing with a massive scandal was never part of the original thesis.

For us to become interested in the stock again, the price would have to drop substantially further from here and new management would have to evidence with words and actions a cultural shift toward no tolerance for this kind of deception. Once the cost estimate to deal with this scandal is increased, we might be given that opportunity. Until then, we will wait and watch from the sidelines.