



**Columbia Business School**  
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# Graham & Doddsville

An investment newsletter from the students of Columbia Business School

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Issue XXXIII

Spring 2018



**Bruce Greenwald & Mark Cooper, CFA '02**

## A Final Lesson: Bruce Greenwald & Mark Cooper

Professor Bruce C. N. Greenwald, who holds the Robert Heilbrunn Professorship of Finance and Asset Management at Columbia Business School and is the Academic Co-Director of the Heilbrunn Center for Graham & Dodd Investing, is set to retire from Columbia at the end of the 2017-18 academic year. Described by the *New York Times* as “a guru to Wall Street's gurus,” Greenwald is an authority on value investing with additional expertise in productivity and the economics of

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**Michael Mauboussin & Tom Digenan**

## Trusting the Process: Michael Mauboussin & Tom Digenan

Michael J. Mauboussin is Director of Research at BlueMountain Capital Management in New York. Prior to joining BlueMountain in July of 2017, he was a Managing Director and Head of Global Financial Strategies at Credit Suisse. Before rejoining Credit Suisse, he was Chief Investment Strategist at Legg Mason Capital Management from 2004-2012. Mr. Mauboussin joined Credit Suisse in 1992 as

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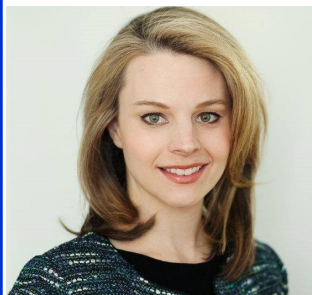
## Rishi Renjen, ROAM Global Management

Rishi Renjen is the Founder and CIO of ROAM Global Management that will launch in the Summer of 2018. Prior to founding ROAM Global, Mr. Renjen was a Managing Director and Sector Head at Maverick Capital, a Partner at TPG-Axon Capital, and a Senior Analyst at Glenview Capital. Prior to Glenview, he was a Private Equity Analyst at Warburg Pincus and began his career in investment banking at Citigroup. Renjen earned a Bachelor of Science in Economics, with a concentration in Finance, from The Wharton School at the University of Pennsylvania.

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**Rishi Renjen**

## Welcome to Graham & Doddsville



Meredith Trivedi, the Heilbrunn Center Director. Meredith skillfully leads the Center, cultivating strong relationships with some of the world's most experienced value investors and creating numerous learning opportunities for students interested in value investing. The classes sponsored by the Heilbrunn Center are among the most heavily demanded and highly rated classes at Columbia Business School.



Professor Bruce Greenwald, the Faculty Co-Director of the Heilbrunn Center. The Center sponsors the Value Investing Program, a rigorous academic curriculum for particularly committed students that is taught by some of the industry's best practitioners.



The Heilbrunn Center  
for Graham & Dodd Investing



We are pleased to bring you the 33rd edition of Graham & Doddsville. This student-led investment publication of Columbia Business School (CBS) is co-sponsored by the Heilbrunn Center for Graham & Dodd Investing and the Columbia Student Investment Management Association (CSIMA).

This is a bittersweet issue for us. Bruce Greenwald, the Academic Co-Director of the Heilbrunn Center, retires at the end of this academic year. Our first interview recognizes him and brings more of his insights to our readers. Similar to the way Prof. Greenwald has bridged theory and practice, all four of our other interviewees have had a foot in both worlds at some point.

We started by pairing **Bruce Greenwald** with his former student and current collaborator, **Mark Cooper, CFA '02**, a portfolio manager at First Eagle Investment Management. Mark discusses his evolution as an investor and what he's learned from Prof. Greenwald. Mark talks about Deere & Co. while Prof. Greenwald warns traditional value investors that the world has changed and that they need to adapt.



**Mario Gabelli '67 and Professor Tano Santos, Co-Director of the Heilbrunn Center for Graham and Dodd Investing, at the 2017 Omaha dinner**

We also paired **Michael Mauboussin** of BlueMountain Capital Management and **Tom Digenan** of UBS. Both Michael and Tom have spent a portion of their careers teaching students outside of their day jobs as investment professionals. They talk about the base-rate fallacy, sustainable competitive advantage, ETFs, and decision-making within a team.

**Rishi Renjen** sat down with us ahead of launching ROAM Global Management, a concentrated long-short fund focusing on single-name shorts. Rishi tells us what he has learned from mentors such as Lee Ainslie and Larry Robbins, how mentorship and culture are key in investing, and why he still teaches not one but two classes year-round at Columbia.

Lastly, we continue to bring you pitches from current students at CBS. In this issue, we feature ideas from finalists of the 11th Annual Pershing Square Challenge in April 2018, all of them shorts. Jade Hu '19, Asher Jacobs '19, and Rana Pritanjali '19 share their winning pitch of Stericycle, Inc. (SRCL); Steve Cao '19, Winter Li '19, and Tyler Redd '19 dis-

cuss their 2nd place pitch of Credit Acceptance Corporation (CACC); Mike Allison '19, Eric Herzfeld '19, and Michael Wooten '19 share their 3rd place pitch of Spotify Technology, Inc. (SPOT); Ryan Darrohn '19, Brad Headley '19, and John White '19 discuss C.H. Robinson Worldwide (CHRW); Arthur Brousseau '19, Greg Doger de Speville '19, and Neethling McGrath '19 present Harvey Norman Holdings, Ltd. (HVN). Separately, Jingjing Huang '19, Matthew Mann '18 and Viraj Vora '19 bring their pitch on Digicel's 2020 bonds.

We are honored and privileged to have continued the Graham & Doddsville legacy, and we look forward to reading the next generation of issues, helmed by three outstanding individuals in Ryder Cleary '19, Gregory Roberson '19, and David Zheng '19. We want to thank Ryder, Greg and David for their commitment and dedication to Graham & Doddsville.

We thank our interviewees for contributing their time and insights not only to us, but to the investment community as a whole.

- G&Dsville Editors



**Meredith Trivedi with Professor Bruce Greenwald**



## Pershing Square Challenge 2018



**Pershing Square founder William Ackman and the 2018 Pershing Square Challenge judges panel**



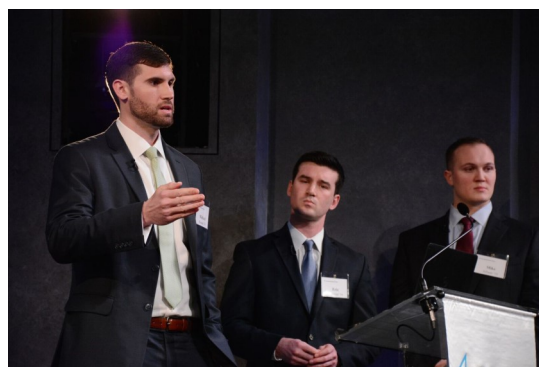
**The judges listen to a riveting student pitch**



**William Ackman posing with the winning team of Jade Hu '19, Rana Pritanjal '19, and Asher Jacobs '19**



**Winter Li '19, Steve Cao '19, and Tyler Redd '19 deliver their 2nd place pitch**



**Michael Allison '19, Eric Herzfeld '19, and Michael Wooten '19 share their thoughts on Spotify**

## 2018 CSIMA Conference



**Professor Bruce Greenwald and Litespeed Partners' Jamie Zimmerman have an enlightening discussion**



**Columbia Business School professor and Gotham Capital founder Joel Greenblatt shares his expertise**



**Capital Group's Jody Jonsson (left) and Ryan Brown discuss navigating the road ahead**



**Conference Chairs Justin Charles '18 (left) and Harsh Jhaveri '18 address the crowd**

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**The annual CSIMA Conference always brings a packed house as investors network and listen to new ideas**



## **28th Annual Graham and Dodd Breakfast**

**October 19, 2018**

A Discussion with John Griffin of Blue Ridge Capital  
and  
Ian McKinnon, formerly of Ziff Brothers Investments

Presented by:  
The Heilbrunn Center for Graham & Dodd Investing

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## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*



**Professor Bruce Greenwald**

information.

Greenwald has been recognized for his outstanding teaching abilities. He has been the recipient of numerous awards, including the Business School's Lifetime Achievement Award and the Columbia University Presidential Teaching Award, which honors the best of Columbia's teachers for maintaining the University's longstanding reputation for educational excellence. His classes are consistently oversubscribed, with more than 650 students taking his courses every year in subjects such as Value Investing, Economics of Strategic Behavior, Globalization of Markets, and Strategic Management of Media.

Since 2007, Greenwald has served as Director of Research, and currently Senior Advisor, for First Eagle Investment Management. In addition, he consults worldwide on a variety of issues concerning capital markets, business strategy, corporate finance, and labor performance.

Greenwald is the author of several books including *Competition Demystified: A Radically Simplified Approach to Business Strategy* (with Judd Kahn, Putnam Penguin, 2005), *Value Investing: From Graham to Buffett and Beyond* (with Judd Kahn, et al, Wiley, 2001), *The Curse of the Mogul: What's Wrong with the World's Leading*

*Media Companies* (with Jonathan A. Knee and Ava Seave, Penguin, 2009) and *Adverse Selection in the Labor Market* (Garland Press, 1980).

Greenwald received a B.S. and a Ph.D. from the Massachusetts Institute of Technology and an M.P.A. and M.S. from Princeton University.

Mark Cooper '02, a co-portfolio manager on the International Small Cap Value strategy at First Eagle Investment Management, is one of Greenwald's former students and current collaborators. Mark joined First Eagle's Global Value team in May 2014. He is also a senior research analyst covering surface transportation and logistics, oilfield services, and automobiles. Prior to joining the firm, Mark had both research analyst and portfolio management responsibilities covering stocks globally at PIMCO. Before PIMCO, he was a partner and portfolio manager at Omega Advisors, where his research focused on industrials, basic materials, commodities and energy. Mark's past experience also included time at Pequot Capital as a research analyst and J.P. Morgan as a portfolio manager in fixed income, commodities, and currency derivatives. Additionally, since 2004, he has been an adjunct professor of Applied Value Investing at the the Heilbrunn Center for

Graham & Dodd Investing at Columbia Business School.

Mark has a BS from MIT and an MBA from Columbia Business School, where he completed the value investing program. He is a former US Army officer. Mark holds the Chartered Financial Analyst (CFA) designation.

**Graham & Doddsville (G&D):** Mark, could you start by introducing yourself, including how you first interacted with Professor Greenwald?

**Mark Cooper (MC):** I've been at First Eagle for the last four years. I co-manage an international small-cap strategy with Manish Gupta '07. I also have senior analyst responsibilities on a few sectors, including oilfield services, surface transportation, logistics, and autos.

I met Bruce 17 years ago. We hit it off really well, maybe because we have two things in common: We were both MIT undergrads, and we both jumped out of airplanes in the Army. Bruce hired me as a teaching assistant for Economics of Strategic Behavior and Value Investing in 2002 when I was at Columbia Business School. After graduation, Bruce and I stayed in close contact and would meet often to discuss ideas. In 2004, right before the semester began, he had an adjunct professor back out so he needed someone to teach Applied Value Investing. Bruce asked Eddie Ramsden '03, Artie Williams '02, and me to

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**Mark Cooper, CFA '02**

## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*

co-teach the class. After graduating from Columbia, I worked at a few well-known places, including some with Columbia-affiliated people. I went to work at Pequot Capital for Art Samberg '67, where I was an equity analyst, primarily in the industrials sector. I then spent five years at Omega Advisors working for Lee Cooperman '67, where I was a partner and portfolio manager focusing on industrials, materials and energy. After Omega, I spent four years at PIMCO helping develop an equity business. I joined First Eagle in 2014.

**Bruce Greenwald (BG):** What did you do before you came to Columbia?

**MC:** After college at MIT and a brief stint on active duty in the US Army, I spent eight years at J.P. Morgan as a portfolio manager in fixed income, currencies and commodities.

**G&D:** How has your investment philosophy evolved over the years?

**MC:** Many people who become investors after graduation think they know exactly what type of investor they are, but, over time, many of them find out they're probably a little bit different once they become professional investors. They are influenced by their bosses, colleagues, and mentors. I'd say I am no different in this regard. I've tried to adapt to the environment I was in to do the very best for our investors given the various constraints. In the hedge fund world, we're probably a little bit more focused on December 31st. So,

even though you might want to take a long-term view, due to the nature of the business, you're likely to be more focused on the end of the year, which tends to shorten your time horizon a bit.

Over the years, I've been

***“Bruce has made everyone whom he’s interacted with a little smarter through his probing questions and keen insight.”***

fortunate to work with and learn from many great people such as Matt McLennan, Kimball Brooker, and Manish Gupta at First Eagle, who are more philosophically aligned with my temperament. I think that all of us, as we learn who we are, are trying to fit who we are as an investor with our boss and our clients. We set ourselves up for the most success when we get most of those stars aligned. I think Seth Klarman put it best when he said, “You get the clients you deserve.”

That said, my basic value philosophy hasn't changed much since my days at Columbia. Bruce instilled a great discipline of focusing on competitive advantage, and concentrating on that has been a major benefit to my career and to hundreds if not thousands of others. Bruce has made everyone whom he's interacted with a little smarter through his probing questions and keen insight.

**G&D:** Did your desire to

**change asset classes lead you to Columbia or is that something that happened while at Columbia?**

**MC:** No, it led me to Columbia. I had already made the decision to become an equity investor. I read *The Intelligent Investor* when I was in my Army officer training in the fall of 1991, and I had been investing in stocks since I was a teenager. In my opinion, I made a pretty simple decision after asking myself, “Where do I think I can get the best education to become a value investor?” Columbia was actually the only place I applied to for business school.

**BG:** I think there are areas in which Mark is absolutely exceptional, and where I've learned a tremendous amount from him. When you think of the stages of an investment process, Mark did not have an issue with search strategy, because he is value oriented. And he had industry specialties from the beginning. By partnering with Manish Gupta, he has added industry specializations. Manish was a tech analyst, and Mark was a generalist analyst who had prior periods of specialization.

Mark had a leg up in what I'm trying to teach you guys, which is to not try to do everything. He was always much more sophisticated than just slapping a ratio on things. He was really interested in the quality of a business and how returns would look going forward.

What Mark is exceptional at, first, is in identifying the key issues and managing his research time. One of Mark's real contributions is his

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## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*

willingness to say, “[Forget] what the world believes, which is clearly wrong.”

Second, Mark is very good at local information. He would read the local newspapers of places where companies that he was looking at were headquartered. He always would read the industry rags for the industries in which he was concerned. Most people sit in New York and talk to analysts in New York, but they’re not interested in an area where there’s a lot of local information.

The third thing that he understood is that research is a lifetime process—that ultimately you become a specialist in companies that you’ve studied before. You get better and better at it because you’ve seen the managements involved and how they react to different conditions and you’ve seen the industry evolve and react to global competition.

Last, he did something that’s very hard for people to do. I once gave a speech in Japan about why Japan has gone off the rails since 1990. There are these six value investors who show up at the speech and asked me to talk not about the Japanese macroeconomic environment, but about companies and value opportunities in Japan.

Now, a crucial issue for all Japanese companies is what they’re going to do with your money. There are four main management skills: efficient operation, efficient financing, intelligent expansion to take advantage of competitive advantages, and human resource planning. Japanese

management is most efficient in giving you your money back. They’re not measured by expansion because they’ll grow wherever they think they can export.

These six investors had been in Japan for 30 years looking at small- and medium-sized companies. They’ve learned about the managements of those companies from a Western perspective. It’s incredible what they know. They have non-overlapping knowledge and meet often to share their knowledge.

I agreed to get breakfast with them. Every single one of them knows Mark because Mark had exchanged information with them about US industrial companies in the same categories of their Japanese expertise. Mark understood the value of cooperation where you couldn’t get the local knowledge yourself. I was impressed with that. I thought, “That’s the right way to do business.” There are two things you have to bring to the table with such networking. One is a willingness to listen and find the local experts. The other is having something to trade, which means you need to have some kind of local knowledge yourself.

I think those four topics—what’s the variant perception, where is the local knowledge that nobody else is carefully looking at, how can you accumulate and build your knowledge over time, and how can you take advantage of a network—are areas of actual research practice that are critically important.

**G&D:** Mark, you were talking

to those Japanese investors to try to get local information on Japanese companies in that industry?

**MC:** Yes, and I was trying to develop a long-term, symbiotic relationship where I could teach them a few things and they could teach me a few things. That’s unlike what a lot of people do. Everybody wants to do tons of calls, but they have more of a transactional focus, where it’s like, “Let me get somebody on the phone and suck all the information out of them.” That may be great in the short term, but it’s not nearly as good as meeting somebody with whom you can share information and compound knowledge over time—not someone you talk to once and think you know everything, but someone you talk to maybe once a quarter for 10 years. You have a chance to learn a lot more over time that way.

**G&D:** Mark, you’ve previously referred to the importance of journaling every investment. Why do you feel that’s so important?

**MC:** Jon Luft ’08, whom I currently co-teach AVI with, and I both believe this is very important. Maintaining a journal allows you to record your thought process as you are making investment decisions, which is essential to assisting your learning process.

Writing down your feelings, thought processes, and beliefs allows you to review your decision making and learn from your successes and, more importantly, from your mistakes. Charlie Munger has said, “It’s best to learn from

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## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*

others' mistakes," but I believe we should learn from our own as well. Having a record of your decisions is the only way I know to do what, in the Army, we called an After Action Review. It allows you to do an honest self-assessment after the fact to determine what you were thinking and feeling when you made the original decision.

We all have faulty memories of the conversations that took place when we made an investment. Think of a situation where an analyst is recommending something to two portfolio managers. There will be three opinions of what was said and what assumptions were made. Odds are all of them are incorrect. The "truth" is probably a fourth version of reality. Writing down the investment idea enables us to have a record of our beliefs at that time. Having a personal journal performs a similar function.

Another thing that makes investing difficult is the fact that your feedback loop isn't perfect. Attributing most of our success to skill is human nature. Journaling helps one get better feedback. First, it will help determine if you have a good or bad process. You must develop a good process to be successful over time. Second, it can determine the role that luck played in the outcome. An honest review of your journals will help you honestly assess your decision-making process.

If writing a journal convinces you that you cannot predict the future, then I would say it was time well spent.

**G&D:** How much of your

investment process was honed at Columbia itself and how much has improved over time?

**MC:** It's impossible to say exactly how it's evolved over time. As a student, you learn how to be a good analyst. How you evolve over time is a function of how close you were to really knowing yourself, your firm, your mentors, and the environment you experience when you invest professionally. I'd say I'm a more risk averse investor

*"I thought about it and said, 'Yes, we do have a [positive] message for companies: focus on markets that you can dominate.'"*

because of my experience during the 2008 financial crisis.

There's no question I got a phenomenal foundation at Columbia. The continual interaction with people like Bruce and Jean-Marie Eveillard, along with hundreds of students I've worked with, has been wonderful. Teaching has forced me to really articulate what I believe. What was it that Richard Feynman said about teaching?

**BG:** The best way to learn something is to explain it to somebody else.

**MC:** And you need to explain it in simple terms. What often happens as a professional investor is that you assume that everybody's at a certain

level. However, when teaching, someone might ask a question which you might think is basic, but to properly respond, you must go back to first principles.

We taught the syllabus that was given to us the first year Artie, Eddie, and I taught Applied Value Investing (AVI). When I started teaching it the second year with Jean-Marie Eveillard, I thought, this is not the way I invest. I really can't teach that. The only way I know to do it is the methodology that has worked for me.

I am not saying that my approach is the only way to invest, but it's based on how I think an analyst should approach learning an industry or a company before even thinking about trying to value the business. It's why all the AVI sections in Columbia's Value Investing Program are different—they're intended to be. The investors/instructors are different and bring their own style and approaches to investing.

After the class is over, students are free to determine what parts of our approach they want to take with them and which they want to discard.

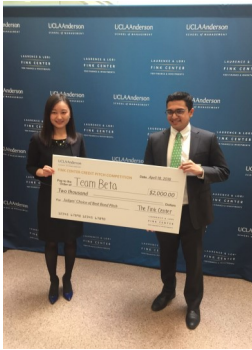
**MC:** I have some questions for you, Bruce. Why'd you decide to teach in the first place?

**BG:** Oh, that's easy. I wanted to be a professor when I was 12 years old because I knew I wasn't going to be able to do a job where I had to get up before nine in the morning more than two days a week.

**MC:** What has changed over

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## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*



Jingjing Hua '19 and Viraj Vora '19 win 1st place at the UCLA Fink Center Credit Pitch Competition

the years teaching at Columbia, specifically with the Value Investing Program and the students themselves?

**BG:** The first thing is that with respect to the program, you really do learn more and more. When I first taught Economics and Strategic Behavior...

**MC:** What year was that?

**BG:** It was probably 1993, maybe 1994. The course was just about barriers to entry and it was really a downer, because it was about how there was a range of businesses that did not dominate markets. Then we gradually learned from student examples that when you look at companies and markets as a whole, you're making a mistake. There may be lots of firms that don't dominate the grocery industry nationwide, but there are firms that dominate groceries in South Texas. We learned to think in terms of detail and specialization. What finally did it was when we wrote the book, the editor said, "This book is a real downer. Can you come up with a positive thought to put in the book?" I thought about it and said, "Yes, we do have a [positive] message for companies: focus on markets that you can dominate." We re-wrote the book with that in mind, and you will see that that insight immediately leads to specialization.

The second thing that changed over time is that during the era in which Mark came to school [in 2000], we were accepting around 25% of the applicants. It used to be that everybody qualified to go to a good

business school got into a good business school. It's just gotten tougher and tougher since: more international students, more women, more kids interested in business, more college graduates in every possible sense.

And I'm not really well-behaved in class. I'm not gentle with the students. One of the nice things about teaching MBAs: They didn't used to care about that. They were going to do fine in life, and it didn't matter that I disagreed with them. Now, students are much more resistant.

**MC:** What's the warning I gave you guys the first day of my AVI section? If you're easily offended or can't deal with criticism, you might want to leave the class right now. The reality is the job is not easy.

**BG:** The students have gotten tenser, but taller and better looking.

**MC:** On average now, do you believe the students are better read on value investing because there are so many more books available today?

**BG:** Yes, they come in with a more sophisticated background. But that's not always an advantage. One of the most important things to teach people is to learn what your own mistakes are. You have to understand that you're going to make them again and again. You have to learn about who you are. That's hard for kids who come in thinking they're sophisticated investors by the time they're 26 years old. It's a mixed benefit that they're more sophisticated.

**MC:** What do you think has changed about value investing as a discipline?

**BG:** I think it's much tougher. I recently gave this interview to Barron's questioning whether value investing still works. I think late-cycle problems are part of it because everything looks overvalued. But there is also a very specific problem that people are dealing with now, and I think it has to do with this transition in the economy from manufacturing to services.

Services are local businesses, local businesses mean small markets, and small markets mean more dominance. If you think of the width of a moat as the minimum sustainable market share, it's going to be much higher in a small market than in a global market. For example, with global automobiles, you're viable at 2% market share. But with local cell phones, you're not viable until you get to 15%. You're not going to make your cost of capital.

Plus, service businesses are continuous-interaction businesses, much more so than manufacturing. What that means is you have much more customer captivity. The moats are much wider in these businesses, and as a result, you're much more profitable even with less investment.

In the late 1980s through the 1990s, corporate profits were 8.5% of national income. Today, they're somewhere between 13.5% and 14%, and they're going up. We've been in an environment where profits have consistently been going up. Value investors will

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## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*

pay for today's profits, but they're very nervous about paying for future profit growth, which doesn't exist except in franchise businesses. And a lot of businesses that were previously not franchise businesses, such as manufacturers like Deere & Co., now are because they have this huge local service component. That's a very hard concept for value investors.

The other thing is, especially in the United States, we have just produced a lot more value investors. The fact that Buffett is so prominent now means that people are just better.

If you put those three factors together, the environment is tougher. In Jean-Marie Eveillard's generation, he could be a generalist. These days, I think you have to specialize, and I think you have to specialize in geography too.

**G&D:** On that point—that more of the value of an enterprise is now in the future for some of these local-dominant service businesses—how do value investors get over that? Do they have to change the way they think about the business?

**BG:** They have to adapt. Look, more of the value of the stock market is in franchise businesses. With franchise businesses, the assets don't matter as much. But you look at the Marty Whitman-esque investors, they really focused on assets. Ben Graham really focused on assets. The net-nets are straight balance-sheet calculations.

When you're in a world where most of the profits are

franchise businesses, and the net-nets tend to come from foreign countries, you've got to have a much longer horizon. You depend a lot more on the efficacy of management and them curating the future to

***“Value investors [are] very nervous about paying for future profit growth, which doesn't exist except in franchise businesses. And a lot of businesses that were previously not franchise businesses...now are because they have this huge local service component.”***

make sure that they create value going forward. Those are all things that traditional value investors didn't have to worry about.

**MC:** Can I add two things to that? One, we recently sold one of our net-nets. It was a minor net-net—it basically traded at less than the cash value of the business—but their business strategy was changing. It looked to me that they didn't understand how they would compete going forward. So, though it looks to be a cheap stock today, I think they're going to bleed money for the next five years or longer. We find some opportunities like that in the small-cap space, but there are not a lot of them, and we

won't tolerate the ones that look cheap on reproduction value and could be a net-net but are losing a lot of money. In those cases, you're in a race against time as the value decays every day.

**BG:** All value traps have management problems. You didn't used to have to worry about value traps, but now management is a big factor. There are a lot of crappy managers out there. One thing I've learned is that if management is creating value, reinvesting your money properly, running the business so the earnings grow, and distributing the earnings usefully, who cares when the market finds out? If you bought the stock for \$5 and the return is \$1, you could live with that 20% return forever, whether it goes to \$20 or not.

**G&D:** Aren't the good managers always well-known?

**BG:** They are. So, yes, they're not going to be cheap. But you want to find managers at companies that are perceived as having problems.

And you need a good managerial checklist. What's their attitude towards efficiency? Is there an organization in place that is working to get more out of the same resources? Does the CEO visit that war room first thing every morning? That'll tell you a very important thing about these companies. When they grow, do they grow where they have the competitive advantage and can earn more than their cost of capital and create value? In other words, do they understand their competitive

(Continued on page 12)



## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*

advantage? If they don't, they can destroy incredible amounts of value. Do they have a decent human resource management policy? Do they hire like crazy in good times and then fire everybody in bad times when people can't find jobs? Is there a decent succession plan? Are they good at taking advantage of debt when it's cheap? Are they good at distributing the cash they don't need?

**MC:** Bruce brought up Deere as a company that's evolved into a local-service business—this is a stock that he and I have talked about for a long time. I want to talk a little bit about what it was when I first discovered it in the early 2000s and contrast that with what you've seen in the last two years with its switch to services. What Bruce has been able to discover in the last handful of years has tremendously enhanced my knowledge of the company.

What I saw in the early 2000s was a company that, on the surface, was cheap. The valuation of the business was low, sentiment was poor, and people were very bearish on corn. The conventional wisdom is that Deere stock is highly correlated with corn prices because the price of corn basically drives Deere's earnings. But this is a case where if you did deep enough work and had a good in-depth understanding of the industry, you could have a great variant perception.

By the early 2000s, most people were looking at the previous five years and asking, "Is this [agricultural] cycle like '97 and '98 during the

drought?" Everybody's focused on the last five years of the cycle, but the real question is: what's the right amount of history to look back? We went back to the early 1970s and thought that was the period, from a commodities perspective, that was more comparable for Deere. I actually believed they could be on the cusp of a cyclical and secular upturn, but, more importantly, I realized that they had initiated a self-help program.

There were two enormous internal changes that the market didn't appreciate. First, Deere was modernizing its manufacturing facility. It went from a process where, in the Quad Cities in Illinois and Iowa they had six floors in a building that manufactured tractors, to straight-line manufacturing. No one I spoke with appreciated that improving the manufacturing process would reduce the time to manufacture a tractor from 42 days to six days and greatly enhance their cost advantage.

Second, Deere had historically lost a ton of money at the bottom of the cycle. Why was that? Because Deere paid its salespeople the traditional way: it paid them for sales. Salespeople didn't care if it was profitable selling another tractor or combine—they were going to sell it if they could. This was especially problematic during cyclical downturns, when salespeople had to sell excess production at large discounts. However, Deere started to pay the salespeople on a more complicated formula, which was ultimately a return-on-assets-based focus. The

emphasis was no longer on just selling the product, but about selling it profitably. This was all public knowledge, but nobody accepted that they would do this.

There would be hiccups along the way, especially when a company goes through a manufacturing transition. But from our perspective, we had a cheap, cyclically depressed company with secular tailwinds and a management team focused on the things they could control, such as improving their competitive advantage in manufacturing and making money in all parts of the cycle.

It took them six years to fully implement the changes. The cycle kicked in about two years later, and Deere was making so much equipment that it took longer than expected to slow production to retool their factories. Meanwhile, their nearest competitor was shipping the stuff from Europe—it would take that firm two months to ship it over on a boat. Deere had created a huge competitive advantage by accelerating manufacturing time and reducing costs. It was about local economies. When the farmer gets to harvest season, he needs that combine to work today. It can't come back to him three days from now. You end up with huge local monopolies around a Deere distributor, because farmers are likely to buy equipment from the manufacturer with the closest service facilities.

**BG:** And Deere's management did understand that. They had a very focused strategy.

(Continued on page 13)

## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*

**MC:** I have another question for Bruce. There's been a lot of talk in the last 10 years of platform companies and compounders. Earlier, you mentioned that we are seeing more and more of companies' value tied up in future growth. Does it worry you that many investors see themselves as the next Buffett and think they can identify these compounders?

**BG:** I think the real test of people who understand compounders is whether they understand that you can't put a value that's reliable on a compounder. That the discount rate ( $r$ ) and the growth rate ( $g$ ) are too close together when analysts try to estimate terminal value in a DCF. So when you try to select a multiple for that compounder, you really can't do it.

So, you've got to do a calculation of returns. All the return calculations people use are basically dividend discount models, just rearranged. Return ( $r$ ) = Dividend ( $d$ ) / Price ( $p$ ), or the cash return, + Growth ( $g$ ).

There's an implicit but missing term here.  $g$  is not simply the nominal growth in cash flows, it is the growth in value. To anchor that  $g$ , we must multiply it by intrinsic value  $v$  and then divide it by market price  $p$ . So  $r = d/p + g(v/p)$ . That is to say, our returns from growth will be greater if we buy the business at half intrinsic value ( $v/p = 2$ ).

The problem is that at crazy valuations,  $p$  is going to be much greater than  $v$ . So  $g$  may be 20%, but if  $p$  is three times  $v$ , then we've effectively cut

our return from growth down to  $20/3 = 6.66\%$ .

You have to be very careful about this calculation. I don't think most of these people who talk about compounders are careful in that way. You

***"All value traps have management problems. You didn't use to have to worry about value traps, ut now management is a big factor. There are a lot of crappy managers out there."***

have to look at where growth really creates value. That means verifying the franchise, looking at the quality of the capital allocation and so on. Just because a business is growing quickly nominally doesn't make it a real compounder.

**MC:** Disruption is a common narrative in many industries these days. What industry challenges make identifying great investments more difficult for value investors?

**BG:** The hardest challenges are not industry challenges, because where industries are a challenge, it's almost always where somebody like Amazon has come in and grabbed share. Well, if somebody can come in and grab share, it's not a stable market yet. In disruptive industries, before the disruption settles down, there are not going to be barriers to entry because the customers

are not going to be captive since the product is changing so much. And the market is going to be changing so much that it's very hard to secure scale.

If you're disciplined enough to stay away from the difficult industries in the world, I don't think industry challenges are the problem. The real problem is management challenges.

You can find what looks like a good company—with lots of assets, earnings, and potential earnings—at a cheap price, and the management can still kill you. An example of that was Dell. Dell was trading at a 20% earnings return. Yes, it was maybe shrinking at 7-9% a year, but the decline wasn't going to accelerate, so it was still a good return. But CEO Michael Dell was taking 80% of the earnings and trying to buy his way into businesses he was never going to get into. He was destroying 80% of the 20% earnings return, on top of which you have a business that's shrinking by 7%. It was just not a happy outcome.

So, I think the hardest thing for people to get their heads around is management and what they can do to you. Especially if they don't understand where their competitive advantage in business is. When that plays out, a guy who used to be a good manager, like Michael Dell, is not a good manager while the industry changes.

Now, even as I talk about that I think I'm learning something from it. It's the interaction of the management with changing circumstances that's hard to chart.

(Continued on page 14)

## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*

**MC:** It's impossible to successfully and consistently predict.

**BG:** Right, and most start reacting badly and trying to buy their way into [other businesses]. A lot of the PC companies did it. They said, "Oh we've got a lot of business customers. We can become SAP or Oracle." They wasted an unbelievable amount of money.

**MC:** What about your investing philosophy has changed the most over the last 20 years?

**BG:** Oh, nothing at all. My favorite book to recommend is Jane Austen's *Pride and Prejudice*, because it's about self-awareness. I have learned what it takes to be a good investor. And I have learned that I do not have that kind of character.

I know what my mistakes are. I'm always trying to be the smartest guy in the room, and it's really dumb. The last time I made that mistake was when I invested in Deere stock. I wanted to absolutely bottom-tick it. I wanted a \$70 average cost.

I initially bought a big position at \$75, but then the stock went up to around \$80. I knew I should buy the last 80,000 shares of Deere at this price, but I stopped buying because I said, "Oh, I'll get it at \$70 or \$75." So, I didn't fill the rest of the position despite the fact that I thought it was worth \$150 to \$200.

**MC:** If you're correct about the fair value, then buying at \$75-80 doesn't matter.

**BG:** Yeah, we weren't going to lose any money with that one, but still I couldn't bring myself to do it. You are who you are. That's why I'm not really a professional investor.

**MC:** How teachable is being a good investor?

**BG:** I don't think it's teachable. That's my lesson. When you're a kid, the way you think you're going to make money is that you're going to guess the cycle. You're going to guess oil prices better than other people guess oil prices. You're going to speculate on the future, and good investors don't speculate on the future. They look at, for example, which oil companies have good capital allocation, because the amount they spend on exploration and development dwarfs what their profits are.

I would say that for 80% of my students, it's all about: "What's the price of oil going to be," or, "The cycle is going to turn and I'm going to catch it just right," or, "This new manager, who has no track record, is going to turn this company around and we're going to get in there first and make money." Despite what we teach them, it's very hard to be disciplined enough to stay focused and say no.

**MC:** What are you going to do after you retire? Warren Buffett is 87, you're a very vibrant and motivated...

**BG:** I'm 71.

So, you students have taken my Value Investing course which is based on what I've learned over the years. It should be clear: That course is

much better than my value investing book [*Value Investing: From Graham to Buffett and Beyond*]. That's just not a good book. There's no serious discussion of what a good manager is like. There's no serious discussion of risk management. There's no serious discussion about the research process. There's no decent discussion of how to evaluate growth stocks. It's just not a complete book. So, my first priority is writing the second edition. Hopefully, I'll finish it by the end of this year.

**G&D:** Will it have the same authors as the first edition?

**BG:** No, it's going to be me, Mark, Tano Santos, Erin Bellissimo, and Judd Kahn.

The second thing is, I've always had a good *modus operandi* with Joe Stiglitz for when we write major things together: I do an outline and a sort of first model and then he does all the hard work. And he puts my name on it. We have a story to write about structural crises—from the Great Depression to today—about big industrial transformations, such as from agriculture into manufacturing to today's transformation from manufacturing into services. That book has to be done.

I'm hoping Joe will get bored of me not writing it and he'll write it himself like he did with our other book, *Creating a Learning Society*. Anyway, I'll probably have to do something on that.

And, I'm going to watch a lot of television.

**MC:** So, nothing else for after retirement? You watch a lot of

(Continued on page 15)



## *A Final Lesson: Bruce Greenwald & Mark Cooper '02*

TV now anyway...

and contribution to the  
program.

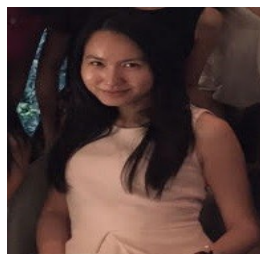
**BG:** I mean, what am I going to do? I was never interested in making money. I was a crazy investor earlier in my life. The first investment that changed my life was in 1970. I had accumulated \$37,000 in various crazy stocks but then managed to lose \$12,000 on soft-shell egg futures. I had made my first enormous investment mistake, and I had to do something with the \$25,000 I had left.

So, I decided to go to the library and—just as Buffett found ideas reading the Moody's manuals—look at bonds. I found these McCrory bonds that are 7.5% bonds trading for 25 cents on the dollar. The interest itself is a 30% return.

I start reading the indentures, and it's clear that, short of bankruptcy in every corner of this company, these guys have to pay these bonds. So I say, even though this company is run by a scumbag, he's not going to be able to not pay these bonds.

So, I bought them and spent the \$25,000 on it. All of a sudden, I had a capital income of \$7,500 a year. I used to teach at Wesleyan then. Now, my first salary as an assistant professor was \$12,500—full professors were making \$20,000—so these bonds moved me up. I was one of the richest professors at Wesleyan based on those bonds.

**G&D:** Prof. Greenwald, we know you have another appointment. It's been a pleasure sitting down with you. Thank you both for your time



Jade Hu '19

Jade is a 1st year student at CBS. Previously, she worked as an Associate in the Investment Banking division at J.P. Morgan. This summer, Jade will be interning at William Blair Investment Management in Chicago.



Asher Jacobs, CPA '19

Asher is a 1st year student at CBS. Previously, he was a Tax Consultant for Deloitte's Private Equity group in New York. This summer, Asher will be interning at DG Capital Management in New York.



Rana Pritanjali '19

Rana Pritanjali is a 1st year student at CBS. Previously, she worked as a Research Analyst at The Motley Fool. This summer, Rana will be interning at Causeway Capital in Los Angeles and Artisan Partners in Milwaukee.

## Stericycle (NASDAQ: SRCL) - Short 1st Place - 2018 Pershing Square Challenge

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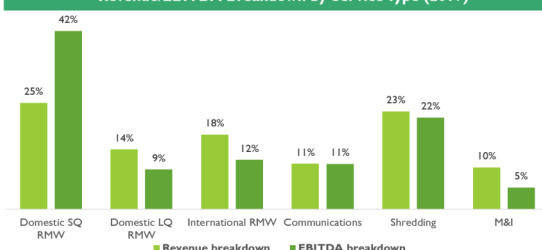
### Recommendation

We recommend a short on Stericycle (SRCL) with a price target of \$38, presenting nearly 40% downside from today's price of \$61. We believe that unprecedented competition, a high fixed-cost structure, and a stretched balance sheet will drive declines through 2020. Accounting red flags and poor management bolster our thesis. At 9.5x forward EBITDA, SRCL should be worth \$38 by YE2019. Further scenario analysis presents a compelling 3.8x downside/upside.

### Business Description

Stericycle provides four types of services: regulated waste and compliance services to SQ (e.g. physicians, dentists) and LQ (e.g. hospitals), secure information destruction, communication, and manufacturing and industrial. Since its inception in 1989, Stericycle has grown from a small start-up in medical waste management into a leader across a range of complex and regulated arenas through nearly 500 acquisitions.

Revenue/EBITDA Breakdown by Service Type (2017)



### Investment Thesis

#### 1) Fallout From Pricing Lawsuit & Increased

#### Competition Drive Revenue & Margin Declines

The \$295m settlement reached in the class-action lawsuit in October 2017 has brought Stericycle's pricing practice to the forefront. Our research shows that Stericycle's retention department is now staffed at record level to combat increasing customer attrition. Both local and national peers are proactively training their employees to help Stericycle's existing, disgruntled customers across the country to get out of their contracts.

#### Past

Market share leader in Small Quantity Medical Waste (70%+)

30%+ premium to competitors

Up to 18% price increase bi-annually

Grow through consolidation

Long-term contracts of 5 years

#### Future

5% capped price increase

Price match to the competition

Losing to the competition

Continued margin erosion

Balance sheet stretched to make acquisitions in the short term

1-3 years contracts

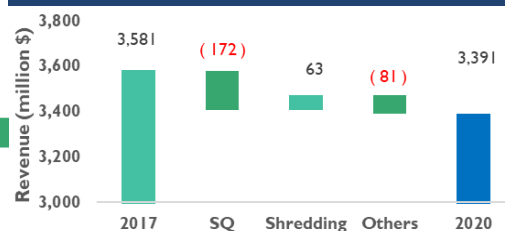
As a result, we expect revenue to drop by 7% annually, primarily driven by Stericycle's inability to raise pricing going forward, as compared to the 10% average pricing increase they have had in the past. However, due to the over 50% of fixed cost structure the business has,

### Key Statistics

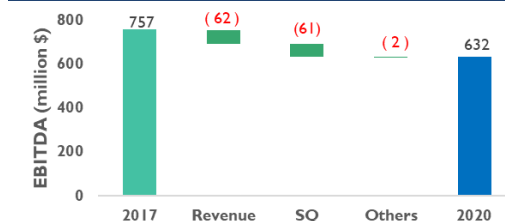
FY 2017, in millions USD, unless otherwise noted

Revenue	\$3,581	Share Price	\$61.10
Adj. EBITDA	757	Market Cap	5,351
Margin	21.2%	NTM EV/EBITDA	9.8x
Adj. EBIT	487	EV	8,255
Margin	13.6%	Net Leverage	4.0x
FCF	360	2019 EV/EBITDA	9.5x
P/FCF	14x	2019 EBITDA	632
Adj. ROIC	5.3%	18-month PT	\$38
Short interest	7.3%	Downside (base case)	38%

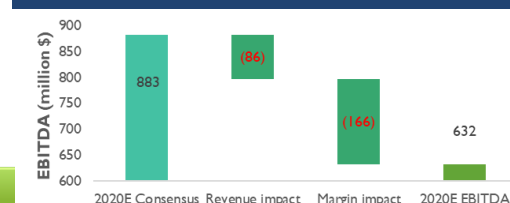
### Revenue Bridge



### EBITDA Bridge



### EBITDA Forecast vs. Consensus



**What competitors say:** Unlike Stericycle, we don't charge monthly fuel charges, or environmental fees.

Our contracts are shorter and easier to read. A lot of Stericycle customers have come back to us. Their cost structure is very high. Stericycle offers very little flexibility. Make sure you read the contract three times.

**What Stericycle says:** From Jan 1, 2018, we eliminated all extra costs for new customers. We will cap fee increase at 5%. We are offering 1 month off on 1-year and 3 months off on 3-year contracts.

**Our assessment:** Based on data we collected, Stericycle prices are 60-100% higher for the same service.

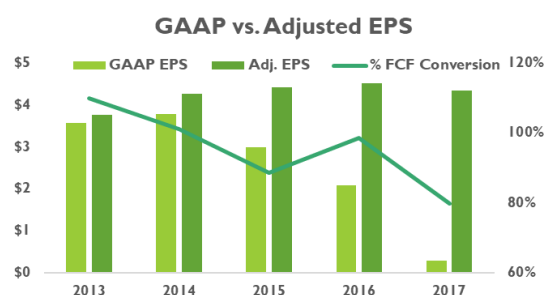
## Stericycle (SRCL) - Short (Continued from previous page)

EBITDA is expected to decline by 14%.

**2) Shrinking SQ End Markets Leading to Further Margin Erosion:** The ongoing consolidation within healthcare industry has shrunk the customer base for SQ segment, the most profitable business for Stericycle. From 2012 to 2016, the percentage of physicians that are employees of large hospital groups has increased from 42% to 47%. Given the drastic difference in margin profile for SQ and LQ (30%+ EBITDA margin for SQ, as compared to mid-teen for LQ), every dollar shifting from SQ to LQ has a decremental margin of 20%.

**3) Value Destructive Acquisitions Have Significantly Eroded margin and ROIC and Strained Balance Sheet:** Adjusted ROIC declined to 5.3% in 2017 from 10.9% in 2013 primarily as a result of value destructive M&A in non-medical waste segments, especially in Shredding since 2015. Take the 2.1bn Shred It acquisition for example. This is a highly cyclical business (50% EBITDA from selling recycled paper) in a secularly declining industry. There's limited economies of scale between the core medical waste business and paper shredding business. We expect recycling margin to face downward pressure as recycled paper pricing comes off its cyclical peak. And yet it was sold to Stericycle at a 9x EBITDA multiple, including synergies. At the same time, the company has loaded its balance sheet with debt to 4x net leverage, making it extremely difficult for them to continue the roll-up strategy. Stericycle has close to \$750 million of obligations due by 2019. Its credit rating and outlook was recently downgraded. It has \$1.2 billion debt maturing in 2020 that's paying 2-3% interest rate. We expect that to spike once the company resorts to refinancing. It was also close to tripping its covenants in March this year, until it obtained a temporary relief from lender through 2019.

**4) Accounting Assumptions & Adjustments Highlight Deteriorating Fundamentals:** In addition to weak internal controls and multiple late filings and restatements, we believe numerous changes in accounting assumptions earnings adjustments are concerning. Allowance for doubtful accounts has tripled over the past two years. Useful lives of customer relationships, for which Stericycle has paid a premium over the course of its 500 acquisitions, has halved over the past four years. In terms of earnings adjustments, the delta between GAAP EPS and adjusted EPS is growing, as free cash flow conversion (as % of adjusted EPS) declines.



### 5) Common Ground for Bulls & Bears— Stericycle's Management:

Over the past four years, Stericycle has lost \$5 billion in market value despite spending more than \$3 billion on acquisitions. However, CEO base compensation has tripled over this time period. We believe management is focused on empire-building at the expense of shareholders. The lack of stock ownership by management is also alarming, especially considering their long tenure with the company. Multiple long-term shareholders have expressed frustration with management's focus on acquisitions rather than stabilizing the core business.

### Catalysts

We expect continued earnings misses and a large asset impairment (>70% of assets are intangibles) over the next 12-18 months. We also wouldn't be surprised by further restatements or an SEC investigation into the company's accounting policies, considering the SEC's persistent questioning of the company in recent years.

### Valuation

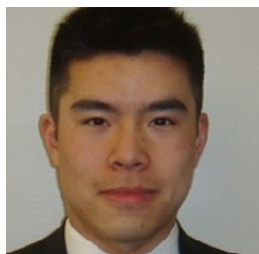
Based on multiple valuation methodologies and scenario analyses, we believe Stericycle remains overvalued and offers an attractive risk / reward. Our base-case assumes continued SQ deterioration and slight shredding growth, with other segments achieving management's 2018 guidance and stabilizing through 2020. Using a 9.5x forward multiple on 2020E EBITDA, our \$38 price target presents **~40% downside over the next 18 months**. A sum-of-the-parts valuation confirms this price target. Even in our bull case, which assumes stabilizing operations, the mere shift of revenue to lower-margin businesses limits upside potential. We also believe there is room for further deterioration and continued multiple compression. As such, our bear/bull scenario analysis presents a **3.8x downside/upside ratio**.

### Key Risks

**Activist pressure:** An activist investor can replace management or push for a sale/break-up of the business. Jana Partners took a position in SRCL in 2016 but exited shortly thereafter. Discussions with investors close to the situation have revealed that Jana noticed underlying problems with Stericycle's business model - similar to what our research has exposed. At SRCL's current valuation, we don't believe another activist will take a gamble. Breaking up the business would also be tough, as Shred-it would receive a far lower multiple than the core MedWaste business.

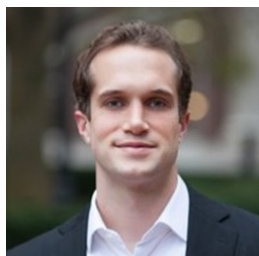
**Takeout:** Waste Management or a competitor may acquire Stericycle. Although WM has made multiple unsuccessful attempts to enter the MedWaste market, it is extremely prudent when allocating capital and seeks stable revenue/earnings. We don't believe it will pay a 11x multiple (or >\$8bn) for a business facing pricing pressure/contract resets simply to acquire customer routes and incinerator/autoclave infrastructure. Conversations with former WM executives have confirmed this belief, and lead us to believe that WM may acquire regional competitors to compete with Stericycle now that SRCL's balance sheet is constrained.





Steve Cao '19

Steve is a 1st year student at CBS. Previously, Steve was an Associate at Goldman Sachs Private Equity Group (PEG). This summer he will be interning at AllianceBernstein Arya Partners in New York. He holds a BA from Rutgers University.



Tyler Redd, CFA '19

Tyler is a 1st year student at CBS. Previously, Tyler was a Senior Analyst at Privet Fund Management, a small-cap activist fund, and a Financial Institutions M&A Analyst at Raymond James. This summer he will be interning at Aravt Global in New York.



Winter Li, CFA '19

Winter is a 1st year student at CBS. Previously, he was an Investment Associate at MFS Investment Management, where he will also be interning this summer. Winter will serve as the Co-President of CSIMA in 2018-2019.

## Credit Acceptance Corporation (NASDAQ: CACC) - Short 2nd Place—2018 Pershing Square Challenge

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### Recommendation

We recommend a short on Credit Acceptance Corporation (CACC) with a price target of \$210, 33% below today's price of \$314. We believe the risk-reward is now favorable with 71% downside in our bear case and 30% upside in our bull case, or a downside/upside ratio of 2.4x. We project EPS to decline by 13% to \$21 per share in 2020, 30% below street consensus, driven by flat growth in new loan originations, a declining yield, and an increase in provisions for credit losses.

### Business Description

CACC is a \$6B market cap subprime used car auto-lender based in the US. The company operates two lending programs—Purchase (30% of 2017 originations) and Portfolio (70% of 2017 originations). The Purchase Program is similar to traditional, indirect loan originations; CACC buys loans from dealers, dealers earn an upfront profit, and CACC retains 100% of both the upside and the downside. CACC's Portfolio Program allows dealers to earn a smaller upfront profit, but in exchange, an opportunity to share in future collections in what the company calls Dealer Holdback payments. CACC has a first priority on all collections until its upfront advance to the dealer and servicing fees are recovered; thereafter, remaining collections are split 80% to dealers and 20% to CACC. This structure incentivizes dealers to originate high-quality loans and also reduces CACC's risk of principal loss on its upfront dealer advance. The Portfolio Program is unique to CACC and is one of the reasons its stock has performed so well in a risky sector.

### Investment Thesis

#### 1) High competition has led to deteriorating conditions within the subprime auto industry

Non-bank lenders such as CACC and its peers have poured ~20% more capital into the subprime auto sector today than at any point leading up to the financial crisis. As a result, delinquencies for non-bank lenders are approaching 2009 highs, despite the backdrop of 4% unemployment in the U.S. Very recently, the industry has seen prior tailwinds become headwinds. Subprime auto lending has been a beneficiary of persistently high used car prices, including increases throughout 2017 due to multiple hurricanes. However, the Manheim Used Car Index has declined by mid-single-digits over the last few months, and we expect to see continued near- and medium-term pressure on used car prices as a glut of off-lease inventory comes to market. In addition, the industry will suffer in a rising rate environment. We believe CACC and many of its peers are already lending to customers at or near maximum interest rate ceilings in many states.

#### 2) Credit Acceptance's competitive advantage is eroding as unit-level economics decline

i) "Show me the incentive and I will show you the outcome": The key to the Portfolio Program has been getting a used car dealer to originate better quality loans. However, we question whether CACC is still able to incentivize dealers to wait for Dealer Holdback payments versus originating more—but lower quality—loans to maximize upfront profit. Dealer Holdback payments per active dealer have declined 50% in the last five years. In addition, dealers now take twice as long—five years—before they originate the required 100 loans necessary to be eligible to receive Dealer Holdback.

ii) Loan-level metrics indicate secular challenges: Bears and bulls diverge on whether declining metrics, such as Holdback per dealer, are signs of secular challenges in the business or simply symptoms of the late stages of an industry cycle. We lean towards the first camp (holdback per dealer was 120% higher in 2007, a similarly buoyant time in the previous cycle). On the surface, Credit Acceptance's adj. ROIC in 2017 (11%) is comparable to what the company produced in 2007 (12%). However, CACC has gained considerable operational scale in originating and servicing loans over the last decade. We estimate that an adj. ROIC of 11%

### Key Trading Statistics

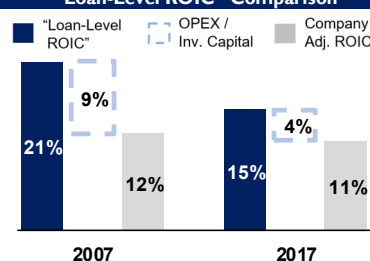
Share Price	\$ 314	ADTV (3M)	\$ 51
FDSO	19	P/E (NTM Con.)	11.7x
Market Cap	\$ 6,100	P/B	4.0x
Debt	3,071	Net Debt/EBITDA (LTM)	3.6x
Cash	8	Short Interest	19%
Enterprise Value	\$ 9,163	Dividend Yield	0.0%
Book Value	\$ 1,536	Cost to Borrow	GC

### Key Financials

		Historical			Projected		
(US\$M)		2015	2016	2017	2018E	2019E	2020E
Revenue	\$	825	\$ 969	\$ 1,110	\$ 1,259	\$ 1,382	\$ 1,498
growth		14.1%	17.4%	14.5%	13.4%	9.7%	8.4%
EPS	\$	14.28	\$ 16.31	\$ 24.04	\$ 26.65	\$ 30.23	\$ 34.00
growth		19.8%	14.1%	47.4%	10.9%	13.4%	12.4%
Book Value	\$	928	\$ 1,174	\$ 1,536	\$ 1,803	\$ 1,957	\$ 2,136

P/E	13.1x	11.8x	10.4x	9.2x
P/B	4.0x	3.4x	3.1x	2.9x

### "Loan-Level ROIC" Comparison



## Credit Acceptance Corporation (CACC) - Short (Continued from previous page)

today actually equates to 15% adj. ROIC at the loan-level. This compares to 21% loan-level adj. ROIC in 2007. In Credit Acceptance's CEO's own words, competitors have "much more information available today and a much longer historical track record upon which they can base their conclusions." Going forward, we question how much further CACC will be able to offset declining loan-level returns with operational leverage. The firm already reduced opex by 5% points over the last decade. Using Santander Consumer (~8x the assets of CACC and opex as a % of Invested Capital of 2% vs. CACC's 4%) as the benchmark suggests the opex ratio won't decline much more.

### 3) Credit Acceptance is worse positioned relative to the previous downturn

**i) Bulls are expecting a similar level of counter-cyclicality:** Many of CACC's investors are actually rooting for the industry cycle to turn. These investors believe the company will be able to take market share and emerge stronger, similar to what happened in 2009-10. We have our doubts that the pattern will repeat itself to the same degree. Most importantly, CACC is a much larger company today, with 4x the dealers as in 2007. Given its extremely high level of dealer attrition (29% in 2017), the company is churning through 5% of its 60K dealer TAM each year.

**ii) Unprecedented cycle length is forcing Credit Acceptance into aggressive actions:** The current industry cycle is into its seventh year. Loan growth on a per-unit basis was negative in 2017 (-8% for Portfolio loans) which CACC was able to offset by increasing the amount of capital it advances to its dealers by 10%. The company is increasingly deploying capital to its Purchase Program where it takes 100% of losses. These loans are no longer performing just as the company has increased its Purchase book to record levels. The dollar value of Purchase loan pools which are underperforming original expectations increased 250% in 2017.

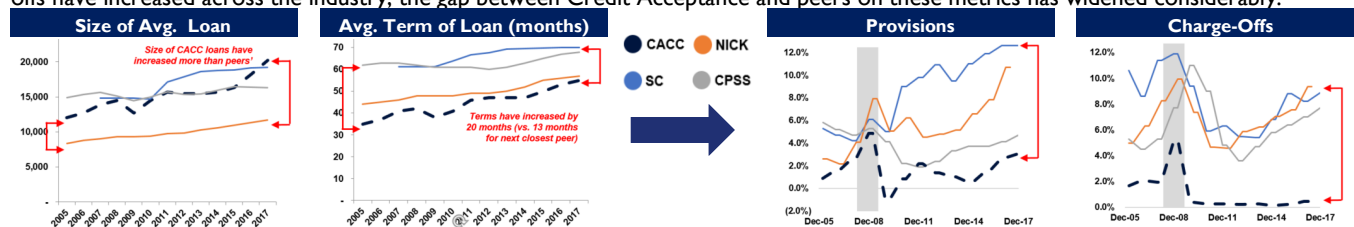
**iii) 2017 underwriting metrics look markedly worse than 2007:** CACC's books appear much worse compared to a similar point in the previous cycle. Loans are 45% larger, 35% longer, and skewed to the Purchase Program. The spread between Forecast Collections and Advance Rates is at record lows, especially in the Purchase book. CACC ended 2017 with 40% less reserves than in 2007.

CACC's Purchase Program



### Why Now: Attractive Risk/Reward

**i) Attractive Reward: Credit Acceptance is under-provisioned compared to peers despite underwriting converging** CACC's loans, having increased by 20 months compared to only 13 months for the next closest peer, are now larger than those of peers, and generate 10 percentage points lower in yield than they did a decade ago. However, even though delinquencies, provisions, and charge-offs have increased across the industry, the gap between Credit Acceptance and peers on these metrics has widened considerably.



**ii) Attractive Reward: Near-term downside:** CACC reported a 4Q17 provision 2x above street estimates and at the highest level since 2008. Importantly, CACC management stated that the increased provision was purely due to the timing of cash flows. CACC expects to collect the same amount of cash flows as before, just at a later time. We believe further provisions are likely as the company recognizes loan losses. Additionally, management is sending mixed signals to the market. Over the last 18 months, two long-time insiders—President Steven Jones and founder and former Chairman Don Foss—have left the company. Since leaving the company, Foss has sold \$450+ million worth of shares. Management's share repurchase activity has also decelerated and the company has not repurchased shares above ~\$220, which is 30% below today's stock price.

**iii) Limited Risk: Valuation remains high, but growth is becoming more challenging:** At CACC's current valuation of 12x P/E and 4x P/B, we believe there is limited upside to the current stock price. CACC's ROIC is declining and its cost of capital is increasing, resulting in flat growth in economic profit. Rising interest rates and lower loan IRRs are squeezing net interest margins. Short interest has declined meaningfully following forced covers of existing short positions, resulting in a low cost to borrow for current investors.

### Valuation

Based on our underwriting, we project EPS to decline by 13% over the next three years to \$21 per share, which is 30% below consensus forecasts. Our forecast is driven by three main variables: flat growth in new loan originations, a declining yield, and an increase in provisions for credit losses. We believe the first two variables will be driven by today's competitive environment, with the increase in provisions driven by an under reserved loan book. Our price target is \$210, 33% below today's stock price, with an attractive 2.4x downside/upside ratio.

	2017A	2020E Bull Case	2020E Base Case	2020E Bear Case
Consumer Loan dollar volume (CAGR)	18.0%	1.8%	0.9%	(4.5%)
Yield on Loan Book	23.8%	22.4%	20.9%	19.4%
Provision for Credit Loss	3.1%	3.0%	4.0%	5.0%
P/E	11.7x	13.0x	10.0x	7.0x
Price Target		\$408	\$210	\$92
Upside (Downside)		30%	(33%)	(71%)



Mike Allison '19

Mike is a 1st year student at CBS. During his first year, he interned at Sentientia Capital Management, a value-focused long/short equity fund. This summer, Mike will be interning at Fithian, a long-biased hedge fund.



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Eric is a 1st year student at CBS. During his first-year, he interned at VectoIQ and Alrai Capital, venture capital funds in New York. This summer, Eric will be interning at Bowery Capital, a venture capital fund in New York.



Michael Wooten, CFA '19

Michael Wooten is a 1st year student at CBS. Previously, he worked as an Associate at Corrum Capital Management and as an Analyst at Reicon Capital. This summer, Michael will be interning at WEDGE Capital in Charlotte.

## Spotify Technology S.A. (NYSE: SPOT) - Short 3rd Place - 2018 Pershing Square Challenge

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### Recommendation

We recommend a short on Spotify Technology S.A. (SPOT) with a price target of \$72 at the end of 2019, offering ~50%+ downside from today's price of \$155. Our downside is supported by our diligent primary research with 23 music industry experts, which includes 4 music label CEOs, 3 media/music industry CEOs, multiple executives of music royalties, musical artists, former Spotify employees, and others.

### Business Description

Spotify is a digital music streaming service that operates in two segments, Premium service and ad-based service. On the premium side, users pay a monthly fee and have access to Spotify's entire music catalog. On the ad-based side, users can listen to music for free, but their service is periodically interrupted by advertisements. As of March 2017, Spotify has 71 million premium users and 92 million ad-based users.

### Investment Thesis:

**Spotify is a Good Product, but a Bad Business**

#### 1) Record Labels Control Industry with

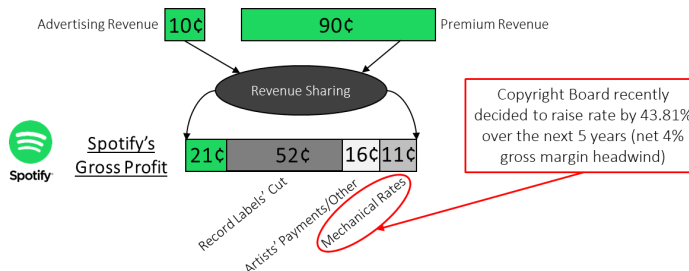
##### Their Consolidated Power

Spotify immediately pays out 52% of its revenue to the record labels in order to supply the music content on its platform. The music industry is highly consolidated with three major record labels (Big Three) controlling nearly 75% of the market share and 87% of the musical content. The majority of the Big Three power comes from their control of the back catalog of musical content. Any song older than 18 months is considered back catalog content. 70% of all music listened to is back catalog content. By controlling this content, the Big Three have power over the industry.

#### 2) Increased Competition From Major Tech Players with Low Barriers to Entry

Spotify currently has a favorable deal with the Big Three record labels thanks in large part to Spotify being the entire paid streaming market in 2015. Even with their control of the paid streaming market, Spotify had to give up 16% of equity and growth covenants in order to get these lower royalty rates. Since 2015, Apple and Amazon have launched streaming platforms, while YouTube has continued to test the market. Though Spotify has 71MM paying users, Apple has quickly grown to over 40MM paying users and Amazon has recently doubled their base from 16MM to 32MM in only 6 months.

### How \$1 Flows Through Spotify

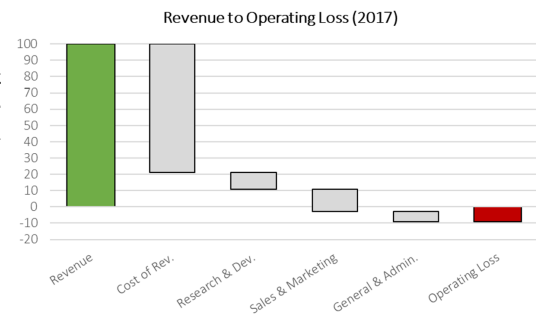


The major tech players entering the music industry do not care about the profits of their music business because they are platform companies that extract value from their consumers in different ways. With the increasing competitive landscape and dwindling bargaining power, what incentive do the Big Three record labels have to give Spotify a better deal?

### Trading Statistics

Share Price	\$149.00	Closing Price	\$149.00
Shares Outstanding (MM)	178.1	Vol (MM)	7.1
Market Capitalization (MM)	\$26,515	Vol (\$MM)	\$1,055
Plus: Debt (MM)	0	EV/Sales	4.1x
Less: Cash (MM)	(1,864)	S/O (MM)	178.1
Enterprise Value (MM)	\$24,651	Float S/O (MM)	105.1
		Borrow Cost	2.9%

### Return Expectations



### Multiple Valuation Approach

1. Discounted Cash Flow - \$72 (Appendix Slide 20)
2. Relative Valuation - \$24 - \$71 (Appendix Slide 25)
3. CLV-Based Valuation - \$81 (Appendix Slide 28)
4. TAM-Based Valuation - \$75 (Appendix Slide 29)
5. Probability Weighted - \$82 (Appendix Slide 30-31)

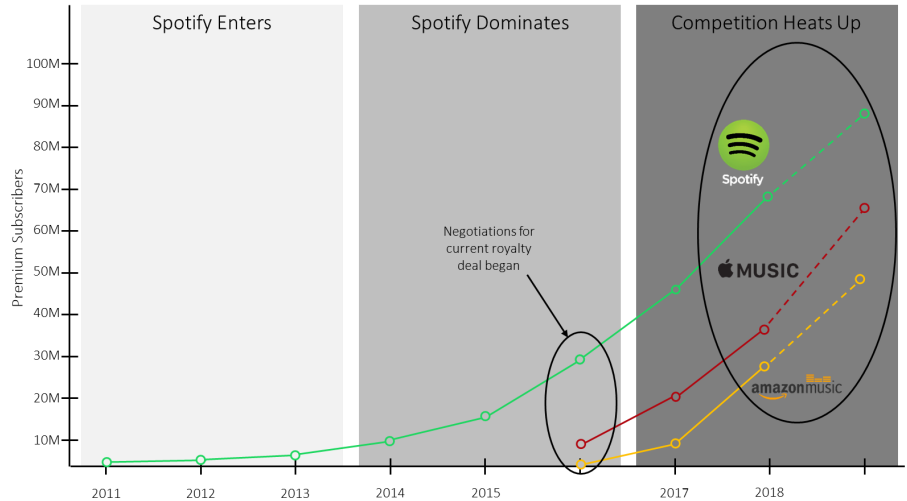


## Spotify Technology S.A. (SPOT) - Short (Continued from previous page)

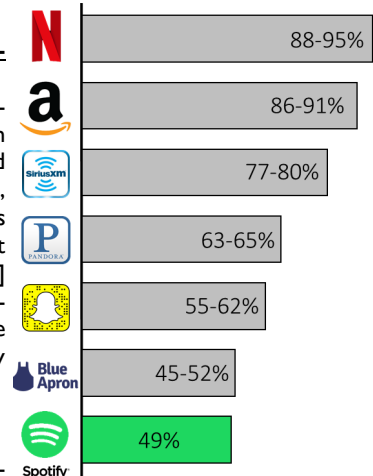
### 3) Spotify's Business Model Has Negative Economics

Most sell-side analysts believe Spotify is the next Netflix, but they have completely different business models. Netflix has high fixed costs for original content, but little to no marginal cost for each new user on its platform. Spotify, on the other hand, has to pay a percentage of revenue to the record labels for each new user on their platform. In addition, the more content users listen to on Spotify, the more Spotify pays in variable costs to artists on a pay-per-stream basis.

Many people believe Spotify has the best music product today, but if you compare their retention rate with that of other subscription-based services, you will find that Spotify is dead-last at 49% retention in 2019. This means that 51% of paying customers left Spotify in 2017.



### Retention Rates



### Catalyst: Spotify's Margins Will Fail to Meet Market Expectations Following Unfavorable Royalty Negotiations with the "Big Three" Record Labels in 2019

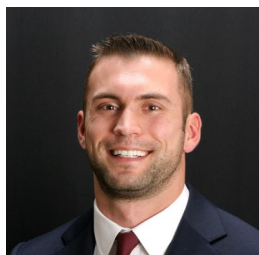
Spotify needs to renegotiate deals with the Big Three record labels in 2019. Each record label requires individual deals, but the Big Three record labels have a "Most Favored Nations" clause which ensures that they receive the highest of the negotiated royalty rates. This clause makes the record labels a de-facto monopoly. Due to the headwind on mechanical rates and high market expectations, Spotify needs to reduce their royalty rate from 52% to 48% at minimum. In speaking with four CEOs of record labels, including the CEO of a Big Three record label, we are confident that Spotify won't be able to meet market expectations. The CEO of a Big Three record label stated "He [Daniel Ek] doesn't have the back catalogs that we have. He needs those to be successful today...He has committed to using tech to try and beat us. I am determined to not be beaten by him...we're going to use all of our levers to control Spotify's behavior." Every indication from the record labels is that they plan to fight Spotify to show their dominance in the market.

### Valuation

Based on multiple valuation methodologies and scenario analyses, we believe that Spotify is significantly overvalued and offers an attractive short opportunity: In our base-case scenario, we believe that shorting the stock offers **~50% return by 2020** and the stock will fall from its current price of **~\$149** to below **\$75** per share. Our base-case scenario assumes **~17% CAGR revenue and user growth**, but due to the lack of operating leverage in the business model and intensifying competition, Spotify's operating margin will never reach 10% as the company stands today and therefore the intrinsic value of the stock is half of the current market price. Our base-case model incorporates a 7.5% terminal discount rate and 4.0% terminal growth rate, and implies a 1.5x forward EV/Revenue multiple. We also used relative valuation techniques, which indicated an intrinsic price range of **\$24-\$71**, depending on whether net or gross revenues were used for comparison.

### 4 Key Risks

1. Spotify is able to generate **original content**, although we believe that the threat of the music labels pulling the back catalogs will mitigate this risk.
2. Spotify's **market share growth exceeds expectations**. The current total addressable market for cell phones with payment capabilities is 1.3 billion phones, and the market is expected to grow over 1.7 billion in the next couple of years. Increased competition by Apple Music, Amazon Music, and others.
3. Spotify is able to **expand its margins**. Spotify doesn't have pricing power and has limited ability to renegotiate better royalty rates with the big three music labels.
4. Spotify gets **taken out**. Spotify's users and data make it a potential target of M&A. We believe that Pandora Radio is a strong case study showing how much value a music streaming business can lose without being acquired.



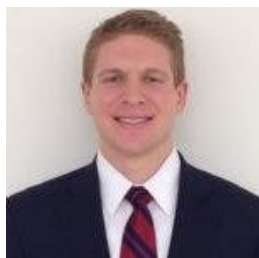
Ryan Darrohn '19

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## C.H. Robinson (NASDAQ: CHRW) - Short 2018 Pershing Square Challenge

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### Business Description

C.H. Robinson is a transportation broker, acting as a middleman for shippers and carriers. Two-thirds of the company's revenues are derived from trucking brokerage services in North America (referred to as NAST). C.H. focuses on dry-van truckload brokerage services, a commodity service. The company does have other revenue streams, but they represent a minority of total operations, have much lower operating margins, and are irrelevant to this thesis.

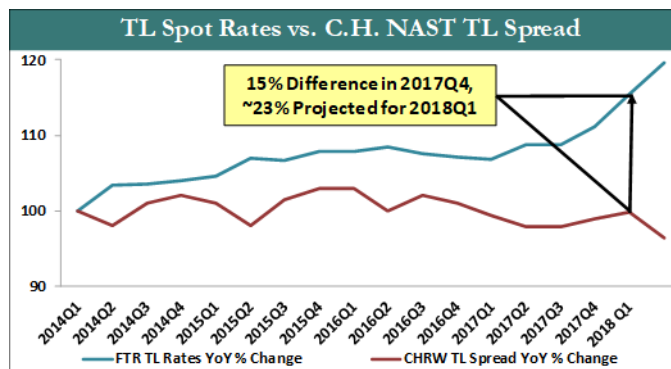
### Investment Thesis

#### 1) Changing market dynamics will accelerate CHRW's margin degradation:

CHRW takes the spread ("net revenue margin") between the cost of truckload capacity purchased and the rate charged to the shipper. It sells truckload capacity on a spot-contract mix of 35%-65% but purchases 95% of capacity on the spot market, a weakness as spot prices increase. Spot prices have already increased 28% YoY, and are predicted to rise to over 2x the previous record. With truckload utilization at 100%—the largest driver shortage on record—and GDP growth above 2.5%, new capacity will not be able to decrease market tightness. The Electronic Logging Device (ELD) mandate, requiring that all time be recorded electronically, was enforced on April 1, 2018. Immediately, 7% of supply was removed from the market, compounding an already tight market.

#### 2) C.H. is overearning, thereby increasing competition and attracting new entrants:

There has been >\$2B of funding raised for VC-backed, tech-enabled start-ups globally from 2015-2017. Without a large headcount, these tech start-ups are able to offer this commodity service at much lower margins than incumbent brokers. Since starting in May 2017, Uber Freight has been extremely successful in Texas, as Uber targets only a 5% spread. Additionally, carriers have invested in their own technology systems and have started their own brokerage segments. The combined effects of these new entrants are illustrated in the above chart.



#### 3) Deteriorating business fundamentals in an environment in which competitors are thriving.

Although C.H.'s ROIC looks attractive (average 31% since 2010), the average return on incremental invested capital has been -2% since 2010. A paradigm for this shift is an increase in headcount combined with stagnant volume growth. C.H.'s volume growth has lagged the FTR TL Loadings Index by 6% since 2015. Also, since shippers want reliability in this tight market, they are calling carriers directly. C.H.'s recent volume performance highlights shippers' reliability worries: -3% in 4Q and -7% in January (meanwhile carrier volumes had the best January on record).

### Competitive Landscape

CHRW has 3% of the total truckload market and 20% of the brokerage truckload market in North America. With such a high percentage in a fragmented market, our primary research suggests that C.H. is fully saturated in North America. Currently, 50% of C.H.'s orders are fully automated, meaning 50% of C.H.'s revenues are competing strictly on price. Considering Uber is targeting a 5% spread, C.H.—with a ~16% spread—will be unable to compete in this commodity market. Also, technology platforms, such as Odyssey Logistics' WIN

CHRW Trading Statistics	
Current Price (\$)	\$93.71
52 Week High (\$)	\$100.18
52 Week Low (\$)	\$63.14
MktCap (\$M)	\$13,096
Total Debt (\$M)	\$1,465
Cash (\$M)	\$334
ADTV (shares M)	1,630
Float (%)	99%
Short/Float (%)	11.1%
Ann. Cost to Borrow (%)	0.28%
Div. Yield (%)	2.0%
Target Price (\$)	\$70.00
% from Earnings	51%
% from P/E Mult. Compression	49%
Beta (Raw)	0.71
Alpha	0.05

## C.H. Robinson (CHRW) - Short (Continued from previous page)

platform, already help carriers fill empty back-hauls and allocate inventory in advance without needing to rely on, or pay, high fees to brokers. As travel platforms have reduced demand for legacy travel agents, CHRW's reselling services will have trouble competing with online portals that directly connect carriers and shippers. Additionally, these platforms will continue to weaken brokers' relationships with shippers and carriers through creating a "second-bid."

### Valuation

Since peaking in 2006 at ~35x forward EPS, C.H.'s multiple has gradually de-rated to the current ~21x. We expect the multiple to compress to 16x (trough levels) when C.H. misses consensus estimates, as there are a multitude of factors working against C.H. Our research suggests NAST revenues will only grow at 8% in 2018 and 6% in 2019. Additionally, C.H.'s NAST spread will compress from 15.7% to 14.6% and 14.3% respectively. With Robinson's hidden operating leverage, the spread decreases are exponentially detrimental to the bottom line. For example, a 1% decrease in NAST spread decreases net income by 13%, while a decrease in the spread from ~15% to ~10% (twice Uber Freight's margin) turns net income negative. Using performance results from last year to project forward results, we estimate 2019 EPS to be \$4.31. After the release of 2018 results, we think the Street's 2019 estimates will align with our research. Applying a 16x multiple to our 2019 EPS estimate produces a \$70 price target.

Bear- 2019 Est. EPS \$3.92							Bear Probability
Multiple on 2019 EPS (x)	14.0x	16.0x	18.0x	20.0x	22.0x	24.0x	35.0%
Stock Price (\$)	\$54.86	\$62.70	\$70.54	\$78.37	\$86.21	\$94.05	
Appreciation/(Depreciation) (%)	(41%)	(33%)	(25%)	(16%)	(8%)	0%	
Base- 2019 Est. EPS \$4.31							Base Probability
Multiple on 2019 EPS (x)	14.0x	16.0x	18.0x	20.0x	22.0x	24.0x	45.0%
Stock Price (\$)	\$60.28	\$68.89	\$77.50	\$86.11	\$94.72	\$103.33	
Appreciation/(Depreciation) (%)	(36%)	(26%)	(17%)	(8%)	1%	10%	
Bull- 2019 Est. EPS \$5.33							Bull Probability
Multiple on 2019 EPS (x)	14.0x	16.0x	18.0x	20.0x	22.0x	24.0x	20.0%
Stock Price (\$)	\$74.58	\$85.24	\$95.89	\$106.54	\$117.20	\$127.85	
Appreciation/(Depreciation) (%)	(20%)	(9%)	2%	14%	25%	36%	
Probability Weighted Price: \$71.51							
Probability Weighted Return: 23.7%							

Sensitivity Analysis			1% Decrease in NAST Spread
(\$M, except employees)	2017A	2017 Sensitivity	
NAST Revenues	\$9,729	\$9,729	
NAST Net Revs.	\$1,525	\$1,428	
NAST Net Revenue Margin	15.7%	14.7%	
Total Net Revenues	\$2,367	\$2,270	
Total Net Rev Margin (%)	15.9%	15.3%	
Total Operating Income	\$775	\$678	
Net Income	\$504	\$436	
Net Income Sensitivity (% Change)		(13.4%)	
Cash Flows (\$M)	2017A	2017 Sensitivity	
EBITDA	\$868	\$771	
EBITDA Sensitivity (% Change)		(11.2%)	
Levered CF after Dist. & Other	\$26	\$18	
Levered CF Sensitivity (% Change)		(30.7%)	

### Key Risks

1. If C.H. is able to increase its spot market exposure in the first half of 2018, profitability could surpass estimates.
2. If C.H. can overcome its historical weakness of passing on price increases, net revenues could be higher than estimates.
3. If C.H. is able to convince a tech player that a partnership would be beneficial for both companies, C.H.'s future prospects could invert.

Income Statement (\$M, except employees)	2015A	2016A	2017A	2018E	2019E	2020E
Total Revenues	\$13,476	\$13,144	\$14,869	\$16,023	\$16,985	\$17,686
Total Revenues Growth (%)	0.0%	(2.5%)	13.1%	7.8%	6.0%	4.1%
Consensus Total Revenues				\$16,163	\$16,961	\$17,845
Estimate - Consensus				(\$139)	\$24	(\$159)
Total Net Revenues	\$2,268	\$2,278	\$2,367	\$2,391	\$2,400	\$2,479
Total Net Revenues Margin (%)	16.8%	17.3%	15.9%	14.9%	14.1%	14.0%
Consensus Net Revenue Margin (%)				16.1%	16.2%	16.4%
Estimate - Consensus				(1.2%)	(2.1%)	(2.4%)
Total Operating Expenses	(\$1,410)	(\$1,440)	(\$1,592)	(\$1,610)	(\$1,542)	(\$1,593)
Total Operating Income	\$858	\$838	\$775	\$782	\$858	\$885
Total Operating Income Margin (%)	6.4%	6.4%	5.2%	4.9%	5.1%	5.0%
Interest and Other Expenses	(\$36)	(\$26)	(\$47)	(\$70)	(\$70)	(\$70)
Profit Before Tax	\$823	\$812	\$728	\$712	\$788	\$815
Income Tax Expense	(\$313)	(\$299)	(\$225)	(\$178)	(\$197)	(\$204)
Tax Rate (%)	38.1%	36.8%	30.9%	25.0%	25.0%	25.0%
Net Income	\$510	\$513	\$504	\$534	\$591	\$611
Consensus Net Income				\$617	\$667	\$666
Estimate - Consensus				(\$84)	(\$77)	(\$54)
EPS Breakout	2015A	2016A	2017A	2018E	2019E	2020E
Weighted Avg. Shares - Diluted (M)	144.1	142.2	140.7	139.7	137.3	135.7
Diluted EPS (\$)	\$3.54	\$3.61	\$3.58	\$3.82	\$4.31	\$4.51
Diluted EPS Growth (%)	16%	2%	(1%)	7%	13%	5%
Consensus EPS (\$)				\$4.44	\$4.92	\$4.94
Estimate - Consensus				(\$0.62)	(\$0.61)	(\$0.43)



## Arthur Brousseau '19

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**Greg Doger de Speville,  
CFA '19**

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## Neethling McGrath '19

Neethling is a 1st year student at CBS. Previously, he worked as a TMT consultant at KPMG Management Consulting. Neethling graduated with a Bachelor's in Engineering and a Masters in Philosophy from Stellenbosch University.

## Harvey Norman (ASX: HVN) - Short 2018 Pershing Square Challenge

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### Business Overview:

Harvey Norman (HVN) is an Australian-based, multi-national “big-box” electronics and furniture retailer:

- |   |  |                                 |                   |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |
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| <ul style="list-style-type: none"> <li>U.S. equivalent would be a hybrid between Best Buy and Bed Bath &amp; Beyond</li> <li>HVN operates in both Australia and some international markets</li> <li>HVN owns and operates 86 stores in international markets</li> <li>HVN franchises the entire Australian retail store base</li> <li>There are 195 Australian stores operated by a network of 684 franchisees, and there are multiple franchisees operating within a single store</li> </ul> | <table> <tr> <td>EV / EBITDA</td><td>6.8 x</td><td>Plus: Debt (A\$)</td><td>A\$ 85.0</td></tr> <tr> <td>P/E Ratio</td><td>9.4 x</td><td>Plus: Minority Interest (A\$)</td><td>A\$ 2.1</td></tr> <tr> <td>Dividend Yield</td><td>7.7%</td><td><b>Enterprise Value (A\$)</b></td><td><b>A\$ 4,49.0</b></td></tr> <tr> <td>Short Interest</td><td>8.3%</td><td></td><td></td></tr> <tr> <td>Cost of Borrow (A\$ 50m)</td><td>0.0%</td><td>Market Capitalization (\$USD)</td><td>\$ 2,89.0</td></tr> <tr> <td></td><td></td><td>Less: Cash (\$USD)</td><td>\$ 11.0</td></tr> <tr> <td></td><td></td><td>Plus: Debt (\$USD)</td><td>\$ 65.0</td></tr> <tr> <td></td><td></td><td>Plus: Minority Interest (\$USD)</td><td>\$ 1.0</td></tr> <tr> <td><b>Target Share Price 2Y</b></td><td><b>A\$ 2.19</b></td><td><b>Enterprise value (\$USD)</b></td><td><b>\$ 3,72.0</b></td></tr> <tr> <td><b>Base Case Return</b></td><td><b>35.3%</b></td><td></td><td></td></tr> </table> | EV / EBITDA                     | 6.8 x             | Plus: Debt (A\$) | A\$ 85.0 | P/E Ratio | 9.4 x | Plus: Minority Interest (A\$) | A\$ 2.1 | Dividend Yield | 7.7% | <b>Enterprise Value (A\$)</b> | <b>A\$ 4,49.0</b> | Short Interest | 8.3% |  |  | Cost of Borrow (A\$ 50m) | 0.0% | Market Capitalization (\$USD) | \$ 2,89.0 |  |  | Less: Cash (\$USD) | \$ 11.0 |  |  | Plus: Debt (\$USD) | \$ 65.0 |  |  | Plus: Minority Interest (\$USD) | \$ 1.0 | <b>Target Share Price 2Y</b> | <b>A\$ 2.19</b> | <b>Enterprise value (\$USD)</b> | <b>\$ 3,72.0</b> | <b>Base Case Return</b> | <b>35.3%</b> |  |  |
| EV / EBITDA   | 6.8 x  | Plus: Debt (A\$)                | A\$ 85.0          |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |
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| Dividend Yield  | 7.7%   | <b>Enterprise Value (A\$)</b>   | <b>A\$ 4,49.0</b> |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |
| Short Interest  | 8.3%   |                                 |                   |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |
| Cost of Borrow (A\$ 50m)  | 0.0%   | Market Capitalization (\$USD)   | \$ 2,89.0         |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |
|   |  | Less: Cash (\$USD)              | \$ 11.0           |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |
|   |  | Plus: Debt (\$USD)              | \$ 65.0           |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |
|   |  | Plus: Minority Interest (\$USD) | \$ 1.0            |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |
| <b>Target Share Price 2Y</b>  | <b>A\$ 2.19</b>  | <b>Enterprise value (\$USD)</b> | <b>\$ 3,72.0</b>  |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |
| <b>Base Case Return</b>   | <b>35.3%</b>   |                                 |                   |                  |          |           |       |                               |         |                |      |                               |                   |                |      |  |  |                          |      |                               |           |  |  |                    |         |  |  |                    |         |  |  |                                 |        |                              |                 |                                 |                  |                         |              |  |  |

Key Trading Statistics		Company Enterprise Value	
Current Share Price	A\$ 3.38	Market Capitalization (A\$)	A\$ 3,776 m
52-Week Range	A\$ 3.38 - 4.62	Less: Cash (A\$)	A\$ 151 m
		Plus: Debt (A\$)	A\$ 852 m
EV / EBITDA	6.8 x	Plus: Minority Interest (A\$)	A\$ 25 m
P/E Ratio	9.4 x	<b>Enterprise Value (A\$)</b>	<b>A\$ 4,493 m</b>
Dividend Yield	7.7%		
Short Interest	8.3%		
Cost of Borrow (A\$ 50m)	0.0%	Market Capitalization (\$USD)	\$ 2,899 m
		Less: Cash (\$USD)	\$ 116 m
		Plus: Debt (\$USD)	\$ 656 m
		Plus: Minority Interest (\$USD)	\$ 19 m
<b>Target Share Price 2Y</b>	<b>A\$ 2.19</b>	<b>Enterprise value (\$USD)</b>	<b>\$ 3,724 m</b>
<b>Base Case Return</b>	<b>35.3%</b>		

**Recommendation:**

Recommendation: We argue that HVN is a fragile business at the top of an economic cycle that is facing structural challenges from increased competition and is run by a management team that avoids transparency and lacks accountability.

Thesis:

1. Franchisee revenue is unsustainable and some loans advanced to franchisees are likely not recoverable. Opaque financial reporting does not reflect true economic reality of franchise business.
2. We've identified numerous unprofitable locations that should be closed down. These locations are concentrated in HVN-owned real estate and closing them will impair the value of HVN's real estate.
3. Intense competition, slower consumer credit, and stagnant housing growth will lead to the weakening of the already fragile franchise network.

No sell side analyst report includes the proprietary data we analyzed to assess the underlying health of the franchise network and the sustainability of the franchise network revenue.

### The Fake Franchise Network:

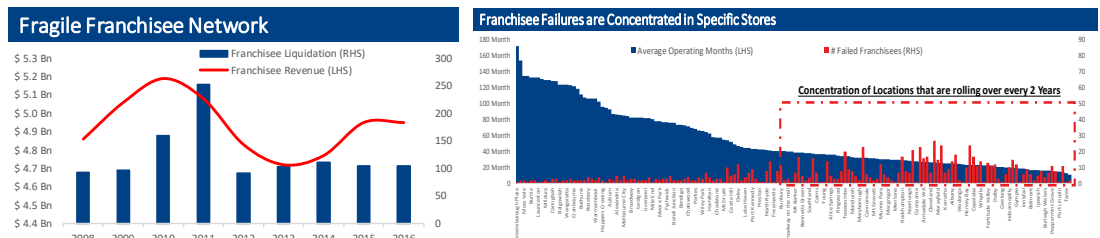
*By using a franchise model, HVN is able to obscure the true economic value of the core AUS retail business.*

- HVN controls franchisees operationally, but has a legal structure to create the illusion that franchisees are independent so that HVN does not have to consolidate franchise-level financials.
- The franchise network is opaque and complicated; HVN discloses only the franchisee network sales, the total number of franchisees, and the total number of stores.
- Consolidation would reveal the true economic value of the franchise network.

### Extreme Franchisee Churn:

*The franchisee network is extremely fragile - much more so than the market knows.*

- As much as 15% (~100) of franchisee base fails each year.
- Number of failed franchisees doubled from 2010 to 2011, indicating the franchisee network is fragile and that there are likely many franchisees running at break-even profitability.
- Franchisees are failing in specific areas, and there is a concentration of locations that HVN is keeping alive.





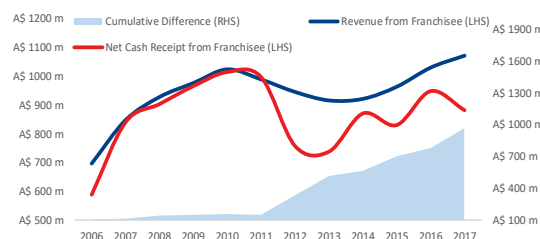
## Harvey Norman (ASX:HAVN) - Short (Continued from previous page)

### Divergence of Earnings & Cash Flow:

We believe HVN is overstating earnings and accumulating bad debt.

- Franchise revenues and cash receipts from franchisees started to diverge following the 2010 decline in franchisee network sales.
- The cumulative divergence has reached A\$970m as of FY 2017.
- A\$614m of this divergence has been expensed as "tactical support." The remaining A\$340m has not yet been collected or expensed.
- Poor disclosure makes it impossible to track the evolution of this receivable on the balance sheet. Receivable from franchisees (A\$942m) was disclosed for the first time in the notes to the FY 2016 annual report.
- In FY 2017, the receivable from franchisees declined by A\$407m (41%) following a change in accounting policy.

### Franchisee Revenues vs. Cash Receipts from Franchisees



### Catalysts:

1. Australian Parliamentary Inquiry: Australian Parliamentary Inquiry into the franchise industry scheduled for Sept 2018. Testimony of franchisees in this inquiry is privileged; therefore, franchisees have immunity to any other legal contracts.

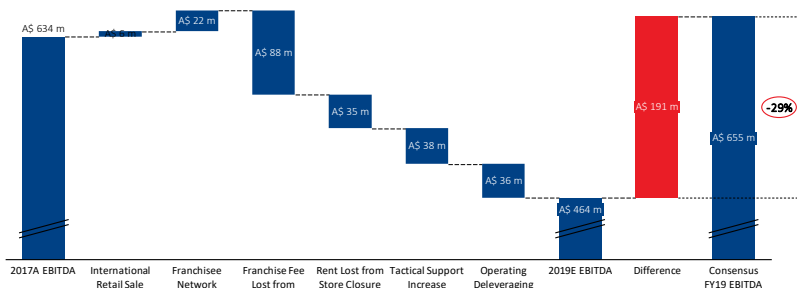
2. Intense Competition: December 2017 launch of Amazon Australia turned out to be a "soft launch." Amazon will launch Amazon Prime in mid-2018. True impact of Amazon on brick-and-mortar retailers will only start to show in 2018. Since December, Amazon has cut prices by 15% in electronics relative to competitors.

3. Consumer Credit & Housing Markets Sour: The already fragile franchisee network will be severely and adversely affected by a macroeconomic shock. Increase in failed franchisees from FY 2010 to FY 2011 highlights the fragility of the franchisee network.

4. Increased Scrutiny from Auditors & Regulators: HVN has been the subject of a number of regulatory investigations over last two years. Increased attention from media and vocal proxy advisors has placed pressure on auditors and will likely lead to more disclosure.

### Valuation:

	Bear	Base	Bull
No. of Stores in AUS	170	170	195
No. of Franchisees	597	597	684
Tactical support 3-year CAGR	33.3%	9.6%	0.0%
Franchise Network Sales 3-year CAGR	-4.8%	-2.8%	4.2%
Rent revenue 3-year CAGR	-0.3%	-0.3%	4.6%
EBITDA Margin	12.0%	15.2%	22.1%
EBITDA	A\$ 361 m	A\$ 464 m	A\$ 719 m
EV/EBITDA	6.0 x	7.0 x	9.0 x
Enterprise value	A\$ 2.17 bn	A\$ 3.25 bn	A\$ 6.47 bn
Non-operating assets	A\$ 59 m	A\$ 59 m	A\$ 59 m
Impairment of receivable	A\$ 141 m	A\$ 141 m	A\$ 141 m
Net debt	A\$ 746 m	A\$ 729 m	A\$ 669 m
Equity value	A\$ 1.34 bn	A\$ 2.44 bn	A\$ 5.86 bn
Share price	A\$ 1.20	A\$ 2.19	A\$ 5.26
Upside/downside	-64.5%	-35.3%	55.8%



**Base Case:** Closure of 25 unprofitable stores. 20 of those closures are located in company-owned properties. Impairment of unrecoverable franchise receivables associated with failing franchisees. Tactical support is assumed to increase by 58% to provide finance relief to struggling franchisees.

**Bear Case:** Overlay a deteriorating macroeconomic environment on the base case.

**Bull Case:** Our thesis is completely wrong and HVN proves to be a resilient competitor.

### Corporate Governance Red Flags:

*Trend of over-spending on opaque non-core investments followed by significant write-downs. Lack of independence & accountability at the Board level.*

- HVN has lent money to parties to buy horses in Gerry Harvey's thoroughbred auctions. HVN's operating subsidiaries have borrowed money directly from entities controlled by Gerry Harvey. HVN has advanced A\$100m to a 50% retail joint venture run by a former CIO and ex-franchisee. There is limited information on this venture and HVN has written off A\$30m of this investment.
- Gerry Harvey's (Chairman) wife, Katie Page, is CEO, and his son, Michael Harvey, sits on the Board of Directors. The only two "independent" directors have Board tenure of over 15 years. Ernst & Young has been the company's auditor for over 20 years.

### Risks and Mitigates:

- Amazon fails to gain traction in Australia.
- Macroeconomic tailwinds keep going for much longer than we anticipate.
- The high dividend yield limits the life of the trade
- Franchisee network churn could be sustainable.



### Jingjing Huang, CFA '19

Jingjing is a 1st year student at CBS. Previously, she worked at J.P. Morgan Asset Management as a fixed income client portfolio manager in Hong Kong. Jingjing will be interning at Morgan Stanley Investment Management as a Sustainable Investing Fellow.



### Matthew Mann, CFA '18

Matthew is a 2nd year student at CBS. Previously, he was a Portfolio Manager at ClearArc Capital, Inc. in Grand Rapids, MI. His coverage included foreign currency and emerging market debt. Matthew will be joining Goldman Sachs & Co. LLC. in New York.



### Viraj Vora, CFA '19

Viraj is a 1st year student at CBS. Previously, he worked at Post Advisory Group as a buy-side credit analyst in Los Angeles. Viraj covered telecom, autos, paper/packaging, and utilities in high yield bonds and leveraged loans. Viraj will be interning in the Multi-Asset division at T. Rowe Price this summer.

## Digicel 8.25% 2020 - Long Winner - 2018 UCLA Credit Pitch Competition

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### Recommendation

The DLLTD 8.25% Senior Unsec'd Notes due 2020 offer attractive total return opportunity for a short-duration (2.5 years) bond with strong liquidity (\$2bn issuance). Capital appreciation will be driven by 1) continued growth in wireless data, business solutions, and cable segments, 2) improvements in cost base and FCF generation, and 3) rapid deleveraging potential from current trough EBITDA and peak leverage as operational momentum translates into financial results.

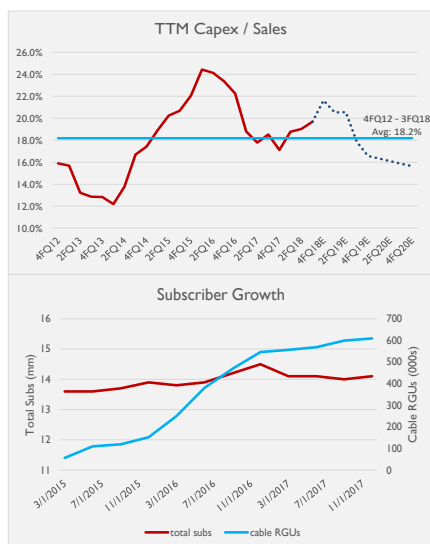
Bond Information			
Outstanding	\$2.0bn	Current Price	89.25
Priority	Sr. Unsecured	Yield-to-Maturity	13.50%
Rating	CCC+ / NR	Issuer	Digicel Group Limited
Maturity	9/30/2020	Ticker	DLLTD
Coupon	8.25%	Net Leverage	6.4x

### Business Description

Digicel Group offers telecommunications (wireless, cable, business services), media, and entertainment services to 14 million subscribers in 32 markets in the Caribbean and Central America. Largest markets include Haiti (16% of revenues), Jamaica (16%), Papua New Guinea (13%), and Trinidad & Tobago (6%). Over the past 13 years, Digicel has expanded from 8 markets to 32, while increasing revenue from <\$500mm to >\$2.5bn alongside a 10x increase in profitability and subscribers. Digicel's major markets are generally duopolies; competitors vary by market but include incumbent Cable & Wireless and state-owned operators. In 2014, C&W acquired Columbus, and under the new leadership of Liberty, has become a more competitive player. Digicel has responded by increasing investments into complementary services to its core wireless offering, including cable, media, and business services, to offer triple- and quad-play offerings to improve the value proposition to customers. Digicel is owned privately by billionaire Denis O'Brien.

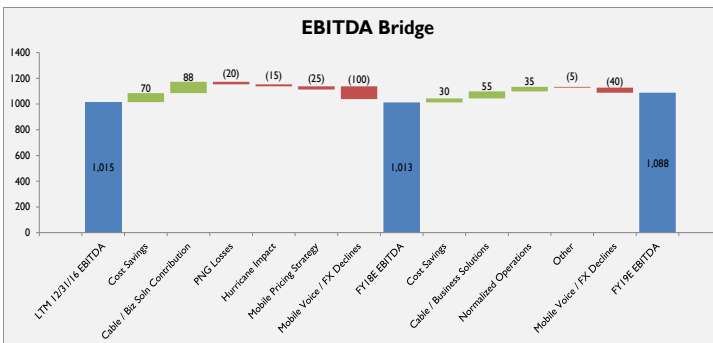
### Investment Thesis

**1) Growth in Wireless Data / Business Solutions / Cable**  
Digicel is coming off a heavy investment cycle to expand product offerings into cable and business services alongside wireless service improvements to LTE. The bulk of these investments are now complete and Digicel is reaping the benefits with significant growth in earnings and subscribers; these new product areas now represent 16% of revenue. In the wireless business, increased price competition, declining voice revenues, and lower wholesale revenues are being offset by continued growth in data usage (smartphone penetration across Digicel markets is 54%, versus 49% a year ago). As a result, earnings grow and FCF turns positive in FY18, excluding the impact of recent hurricanes which have had a \$15-20mm and \$10-15mm impact on revenue and EBITDA for the full year. Total damages (recoverable from insurance, but with a timing lag) are \$60-70mm.



### 2) Ongoing Improvements to Cost Base and FCF Generation

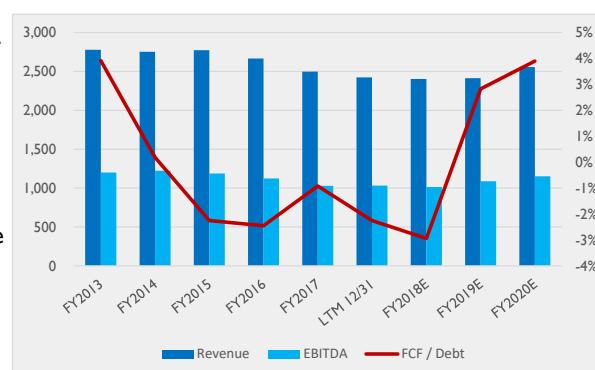
The Digicel 2030 Transformation plan launched at the end of 2016 aims to improve EBITDA margins by 2-4% by the end of 2018 by centralizing back office functions at regional hubs, renegotiating procurement contracts, eliminating redundant management layers, and investing LTE wireless networks to bolster subscriber growth. As of 3FQ18 (ended 12/31/2017), Digicel is well on track to achieving its target goals; 2,600+ headcount (25% of total) has been eliminated and LTE networks have been deployed in 17 markets, with another 9 expected to be rolled out shortly. As a result of these operational improvements, moderating capital expenditures, and organic growth, Digicel will improve its free cash flow generation thereby enabling debt and leverage reduction. Free cash flow is roughly breakeven currently but will rise to \$200-250mm (3-4% of debt) in FY2019 and FY2020.



## Digicel 8.25% 2020 - Long (Continued from previous page)

### 3) Rapid De-leveraging Potential

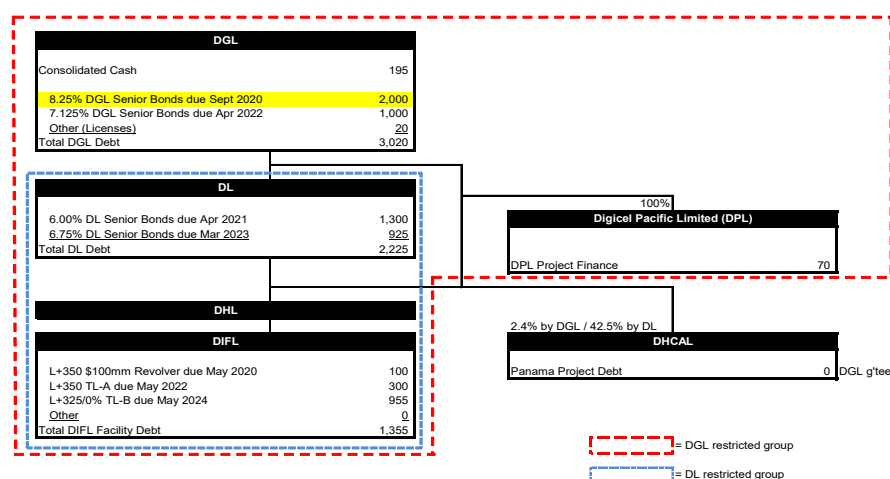
Recent financial results from 2015 onwards have been hampered from non-operational issues (FX, hurricanes, start-up business costs). Underlying operations and fundamentals remain solid, and should drive earnings and FCF improvement under normalized operations. The DLLTD 8.25% 2020 bonds, though a holdco bond, represent the first maturity in Digicel's capital structure following the refinancing of Digicel's near-term bank loans and bonds with a new \$100mm 3-year revolver, \$300mm L+350 5-year term loan A, and \$955mm L+375/1% 7-year term loan B. The bank loan has since been repriced 50bps tighter and upsized by \$100mm in March, with the proceeds used to repay a temporary drawdown on the revolver to finance network repairs given the uncertain timing around receipt of insurance proceeds. Further, the company was recently bolstered by a Paris court ruling that mandated Orange, a competing operator in certain territories, to pay €346mm to Digicel as reparations for anti-competitive practices. As a result, liquidity has improved, EBITDA should resume growth under normalized operations, and FCF is bolstered with declining capital expenditures and receipt of insurance and lawsuit payouts; net leverage will decline from 6.4x currently by ~0.5x each year, reaching 5.2x by the end of FY2020.



FYE 3/31	FY2016	FY2017	LTM 12/31	FY2018E	FY2019E	FY2020E
Revenue	2,665	2,496	2,424	2,403	2,413	2,557
EBITDA	1,122	1,030	1,032	1,013	1,088	1,151
FCF / Debt	-2%	-1%	-2%	-3%	3%	4%
Leverage	5.6x	6.1x	6.3x	6.4x	5.8x	5.2x

### Capital Structure & Covenants

As of: 12/31/2017



#### Consolidated Digicel

		lev
Cash	195	
Secured / Project Debt	1,425	1.4x
DL Debt	2,225	3.5x
DGL / Panama Debt	3,020	
Total Debt	6,670	6.5x
Net Debt	6,475	6.3x

LTM EBITDA	1,032
L2QA EBITDA	

#### Digicel Limited Only

		lev
Cash	113	
Secured / Project Debt	1,355	1.5x
DL Debt	2,225	
Total Debt	3,580	4.1x
Net Debt	3,467	4.0x

LTM EBITDA	876
L2QA EBITDA	

The DLLTD 8.25% 2020 bonds reside at the holdco-level of Digicel's capital structure, which benefits from support from a broader restricted group. Based on debt incurrence covenants, \$1.2-1.3bn of additional secured debt could be raised to refinance these 2020 bonds at the operating company level (DIFL) where the current credit facility is issued. Payments out of the structure for dividends are currently restricted by leverage, though cash can flow freely from the opco to the holdco to service interest payments. The company has multiple options to refinance these 2020 bonds, including raising secured debt, equity infusion by Mr. O'Brien (he has hinted at this on calls), a future IPO (was attempted but pulled in 3Q15 due to market conditions), and asset sales (tower sale-leaseback, Panama asset sales).

### Key Risks and Mitigants

**1) Increased Pricing Pressures:** Liberty Global acquired Cable & Wireless in 2016; C&W has since become a much stronger competitor, after years of losing share to Digicel. C&W initially clawed back some market share through pricing promotions, though this has now stopped as the company seeks to improve its lagging technology and wireless networks. Still, irrational pricing pressures remain a risk.

**2) Macroeconomic and FX Risks:** Many of the markets Digicel operates in are small with volatile currencies. Hedging mis-matches can result in lower translational earnings, and market instability can impact operations (as is currently the case in Papua New Guinea).

	Valuation		
	Low	Mid	High
FY20E EBITDA	1,051	1,151	1,251
FY20E Multiple	6.0x	7.0x	8.0x
<b>EV</b>	<b>6,305</b>	<b>8,056</b>	<b>10,007</b>
+Cash	195	195	195
-Secured Debt	(1,425)	(1,425)	(1,425)
LTV (%)	20%	15%	12%
<b>Value to Unsec'd</b>	<b>5,076</b>	<b>6,827</b>	<b>8,777</b>
-Opco Debt	(2,225)	(2,225)	(2,225)
LTV (%)	55%	43%	35%
<b>Value to Holdco</b>	<b>2,851</b>	<b>4,602</b>	<b>6,552</b>
-Holdco Debt	(3,020)	(3,020)	(3,020)
LTV (%)	103%	80%	65%
<b>Equity Value</b>	<b>(169)</b>	<b>1,582</b>	<b>3,532</b>

FY20 ends 3/31/20 for Digicel

Comps (EV / '19E EBITDA)	
Cable & Wireless Takeout	11.2x
Columbus Intl Takeout	9.6x
AT&T	5.1x
America Movil	6.5x
Telefonica	5.9x
T-Mobile	6.5x
Orange	4.8x
<b>avg</b>	<b>7.1x</b>

## Trusting the Process: Michael Mauboussin & Tom Digenan

(Continued from page 1)



**Michael  
Mauboussin**

a packaged food industry analyst and was named Chief U.S. Investment Strategist in 1999.

Mr. Mauboussin is the author of three books, including *The Success Equation: Untangling Skill and Luck in Business, Sports, and Investing* and is also co-author, with Alfred Rappaport, of *Expectations Investing: Reading Stock Prices for Better Returns*.



**Tom  
Digenan, CFA**

Mr. Mauboussin has been an adjunct professor of finance at Columbia Business School since 1993 and is on the faculty of the Heilbrunn Center for Graham and Dodd Investing. He earned an A.B. from Georgetown University.

Tom Digenan is the head of the US Intrinsic Value Equity team at UBS Asset Management. In this role, he is responsible for U.S. equities portfolio construction and research. Prior to this role, Tom had been a Strategist with the team since 2001, where he participated in the analysis and development of U.S. equities portfolios, focusing on alpha generation and ensuring client investment objectives were met.

Prior to his role with the U.S. Intrinsic Value Equity team, Tom was president of the firm's mutual funds and relationship funds organization.

Prior to joining the UBS predecessor organization Brinson Partners in 1993,

Tom was a senior manager in the tax department of KPMG Peat Marwick, where he worked exclusively in the investment services industry.

Tom is a member of the CFA Institute and the American Institute of Certified Public Accountants, and he is on the board of CFA Society Chicago. He is currently Vice Chairman of the CFA Society Chicago.

Tom was an adjunct professor in the Marquette University Graduate School of Business from 2012-2016.

**Graham & Doddsville (G&D):** Can we get started with each of you discussing your background?

**Michael Mauboussin (MM):**

I was a liberal arts major in college so I never studied business. It's an interesting question whether that's an asset or a liability. I came to the business world knowing close to nothing. My father made me take principles of accounting when I was a senior in college and I got a C+ in the class, and only out of the generosity of the professor's heart.

I started at Drexel Burnham, which is now defunct but was an amazing place to learn about the business. I was in the training program and was confused for a very long time. I guess I still am confused to some degree, but the virtue of being a liberal arts major was that I was compelled to go back to first principles. I always

want to understand how things work from the ground up. While the world was and still is replete with rules of thumb and old wives' tales, we can decompose a lot of it.

For one of my first early projects, I remember thinking: what do the great investors do? I built files on Warren Buffett and Ben Graham and other great investors, just to study how these folks operate. There were some common threads. They seemed to be long-term oriented. They seemed to be focused on cash, not accounting numbers. They seemed to really value good businesses. Those are the sorts of things that stood out to me.

Then, in 1987, I had my professional epiphany. A guy in my training program handed me a copy of Al Rappaport's book, *Creating Shareholder Value*. It was awesome. There were three things in that book that have remained the bedrock of everything I do, and are things Tom and I have talked a lot about over the years. The first was: value is not about accounting numbers, it's about cash. This is a lesson that we relearn from time to time. The great analysts always focus on cash.

The second thing was that competitive strategy and valuation should be joined at the hip. It's interesting, even in business school we teach strategy and finance separately. The strategy professors will say, "well, you want your strategy to create value" but they don't really explain the financials. The finance guys say "well, it's good to have a competitive advantage," but don't quantify it. As an

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investor, you're operating at the intersection of those two fields. You can't do an intelligent valuation without understanding strategy. And the litmus test for a strategy is whether it creates value. Even though the book was written for corporate executives, the relevance for investors was obvious.

The third lesson came from chapter seven of the book, *Stock Market Signals to Managers*. The argument was that your stock price reflects an expectation about how you're going to perform as a company. You, as an executive, need to understand what the market expects, and exceeding those expectations will make your stock go up. The market may think you're going to create a lot of value, but if you don't create as much value as the market thinks, your stock is actually going to underperform. Again, executives were the audience but the implication for investors was also clear.

In the early 1990s, I was working for a senior analyst following consumer companies. One day, he said, "You work for me from 9 to 5, but if you want to do more on the weekends, you can write about whatever company you want. But my name will be on the top." The first company I wrote about was Ralston Purina. The CEO of Ralston at the time was Bill Stiritz. You may have read the book *The Outsiders* by Will Thorndike, which is awesome. There's a whole section on Bill Stiritz. He was considered the smartest guy in the food industry, kind of like the Warren Buffett of the industry.

So I write this report and my senior analyst's reaction is tepid. But he figures, nobody cares, let's just publish the piece anyway. The content was all Rappaport. It was all cash flow, why buybacks made sense in the context of what they were doing, and so forth.

One of the first phone calls I got after the report came out

***"This is a lesson that we relearn from time to time. The great analysts always focus on cash."***

was from Bill Stiritz's office. They said, "Bill really liked your report. Can you come out and talk to our senior executive team about how you think about valuation?" I'm a pretty young guy at the time, and so it was a very exciting imprimatur.

After that, I became a senior analyst at First Boston following the packaged food companies. I had other jobs there, which is now Credit Suisse, and it was around the time I joined First Boston that I started teaching at Columbia Business School.

From there I went to Legg Mason Capital Management for nine years, implementing a lot of these same ideas on the buy-side. Then I went back to Credit Suisse for a short stint, and now I'm back on the buy-side. So I've been back and forth between sell-side and buy-side, but really thinking about the investment process the

whole time.

**Tom Digenan (TD):** I didn't go out into the world knowing I was going to be an investor. I worked at the Chicago Mercantile Exchange in college as a runner. That's not investing. The one investment concept I got from that is that the futures business, unlike the equities business, is a zero-sum game, and it's also mark-to-market. If you invest in cattle futures and they go up today, you can run up to the office and pull money out of your account. If they go down, you've got to run up to the office and put money into your account. You don't think about yesterday. One thing that surprised me when I got into the investment business is how focused people are on what happened yesterday.

I'd be driving in to work and somebody calls in these stock shows on the radio and they ask, "should I sell XYZ?" And the host asks, "well what did you buy it at?" And I'm almost going off the road saying, "it doesn't matter what you bought it at!"

I was an accounting major in college because I wanted that stability and I liked having an answer. And I've got to tell you, this is a business where you don't get an answer. In accounting, you get an answer. In the early 90s, I had an opportunity to join Brinson Partners and work with Gary Brinson and Jeff Diermeier. They were my two most significant mentors from an investment perspective. They followed a pure discounted cash flow approach. If you stick to it, it helps you avoid bubbles, but you must have

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faith in it, and your faith will get tested. For you young guys going into the business, I would say you will be wrong a lot — even when you follow your process — but be ready to be right and have the world temporarily think you're wrong. In the end, you're only wrong if you don't stick to your process.

**G&D:** Michael, a lot of your research reports focus on broad investment themes, for example the “Base Rate Book.” How did you go from being a sell-side research analyst covering a single sector to the very broad, multi-disciplinary perspective you're now known for?

**MM:** When I was an analyst, I was very influenced by Al Rappaport and his work on valuation. I was also very interested in value investing. When I was an analyst, it was increasingly the case that I would go out to talk to clients and they would ask me about specific stocks, but they'd also say, “tell us more about your valuation approach.” So I ended up spending a lot of time just talking about how to do valuation. It was a natural evolution because that's what people were asking about.

If I were to break down my approach, the first really important thing to think about is why stocks are mispriced. Every day, you have to ask the question, “what is the market not getting that I think I know?” That's a nontrivial problem. The second component is valuation and how to do it properly.

What's interesting about valuation is if you use

heuristics like P/E or Enterprise Value to EBITDA, you don't blow yourself up because the markets are smarter than you are, so your heuristics don't really make that big a difference.

You mentioned the “Base Rate Book.” If you asked me what I wish I knew when I was a 22-

***“I'd be driving in to work and somebody calls in these stock shows on the radio and they ask, ‘Should I sell XYZ?’ And the host asks, ‘Well what did you buy it at?’ And I'm almost going off the road saying, ‘It doesn't matter what you bought it at!’”***

year-old analyst starting out, I would say without hesitation, it's on the idea of base rates. Danny Kahneman, the renowned psychologist, calls this the inside versus outside view. The idea is to integrate historical corporate performance into my bottoms-up model.

We wrote about Tesla in 2015 when Elon Musk laid out the path for Tesla to get to a \$700 billion market capitalization. That was Apple's market cap at the time, so it was a very ambitious plan. He said, “we're going to do six billion in revenues in 2015,” — which

they didn't do — but also added, “we're going to grow 50% a year for ten years with an eventual net margin of 10% and a P/E multiple of 20x.” If you work out the math, it gets to \$700 billion. By the way, if someone gave that problem to me, I would do what you guys would do. I would open an Excel spreadsheet, then figure out how big the auto market is, what percent would be electric, and what percent would be Tesla. And then I'd ask, “does this seem reasonable or not?”

The outside view, the base rate, would say, “has any company with six billion in revenues ever grown 50% a year for 10 years?” The answer is that it's never been done, not even close. Might it happen? Yeah, it might happen, but it certainly wouldn't be your base case, and it's certainly a very low probability. Something like that's a sobriety check right away.

Back in March, there was a feature story in *The Economist* about Amazon. An analyst projected them growing 15% a year off a \$100 billion revenue base. Has that ever been done before? No. Might Amazon be the first? Of course. Is it your base case? It would seem optimistic for that to be your base case. You might assign it some modest probability, but it's certainly not the most likely outcome.

The outside view is incredibly powerful, and gives you a practical way to integrate concepts such as regression toward the mean. Everyone knows that regression toward the mean is important,

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especially if you're a value investor, and the "Base Rate Book" tells you how to operationalize it. It's not just that you understand there's this thing called regression toward the mean, you now know how to do it quantitatively, which is really helpful.

**G&D:** Speaking of base rates, Tom, do you and your team utilize these types of frameworks?

**TD:** Yes, quite often. Michael wrote a great piece called "Managing the Man Overboard Moment." Last summer, Kroger took a rapid nosedive and I pulled out Michael's analysis and used it to frame the situation.

We ended up selling Kroger. It was a good sell. The reason I say it was a good sell is that this was a stock where we had two signposts relevant to our long position: one, we will see a return of food inflation in the U.S. which will improve margins in the grocery business, and two, Amazon will have less than 1% market share in groceries.

In a span of two days, both signposts were debunked. On a Thursday, they announced earnings and lowered guidance because they weren't seeing any signs of food inflation. Then literally the following day, Amazon announced the Whole Foods acquisition. We had an analyst who is incredibly smart, very well-educated. The natural analyst bias is to maintain the position. Cognitive dissonance impairs our ability to immediately incorporate evidence refuting your current hypothesis. In

addition, there is a value trap element in play where you can justify maintaining the position by saying, "but it's really cheap now."

It was the appropriate sale for the portfolio I manage and based on other opportunities available to me at the time. We own this stock in our Global Equity portfolio, managed by one of my colleagues. That team, after analyzing the situation, felt there was enough downside protection to maintain a position in the stock.

My advantage and disadvantage as an investor is that I'm not an

***"I think most managers stray from their process more often than they don't."***

analyst. I don't know more than the analysts do about these companies. I have faith in our process. I realize that if you don't formalize the process, you won't follow it, because when you get to that event, there will be some emotional reason to stray from your process. I think most managers stray from their process more often than they don't. I'll use a baseball analogy *Moneyball* by Michael Lewis came out in 2003. In 2005, if you asked general managers in Major League Baseball if they had read *Moneyball*, over half of them hadn't read it. Can you imagine that? You're one of 30 competitors in the world, and one of them is telling you exactly how he does things.

These are the people you trade with. It's ridiculous. People get set in their ways. I don't think most organizations have an actual process that pushes you toward continuous improvement and it's something that you've got to be adamant about because it's not comfortable. I have one person at my firm who said, "but that would be overriding analyst judgment." I said, "that's exactly right." There are times when you must override an analyst's judgment because it's the process, and you have to follow the process.

**MM:** I'd like to just talk a little bit about the story behind "managing the man overboard moment." Decision making is difficult in all environments, but it's particularly difficult at emotional extremes. For example, if you're feeling really good or really bad, it's very difficult to have a clear head about anything. Having been on the buy-side, there were these unfortunate incidents where we'd have a stock go down more than 10% versus the market. As an analyst, you're disappointed, you're frustrated, and maybe you're even angry.

**TD:** You're defensive.

**MM:** You're defensive. No one's happy. We created this analysis going back to 1990, just looking at thousands of instances of stocks going down 10% versus the S&P. Then we introduced factors including momentum, valuation, and quality. As you introduce the factors, you increase your specificity but you reduce your sample size. We then asked, "how did the stocks do in subsequent periods?"

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That analysis does two things. First, it gives you a naïve default. If you know nothing about the situation and the stock has bad momentum, good valuation, and high quality, it will say: buy, sell, or hold. Now you have the default. It's not an answer. It's a part of a distribution, but at least something to hold onto. Second, I think because you have that naïve default in your back pocket, you can have a calmer conversation. You have this sort of backdrop behind it and you can say, "all right, let's think about this properly."

We wrote two pieces. The first was "Managing the Man Overboard Moment," and the other was "Celebrating the Summit," which dealt with situations in which stocks had outperformed. I don't know if this is true, but apparently most mountaineering accidents happen on the descent, not on the ascent. Partly it's because descents can be more technically difficult, but it's also because people are more excited at the top of the mountain. They're high-fiving, taking pictures, and they let their guard down. I don't want to stretch the analogy too far, but in investing too, we were trying to say, "let's address process at emotional extremes, when you've made a lot of money or you've lost a lot of money."

**G&D:** Would you say in your opinion, an important difference between a good versus a great investor is that ability to manage the behavioral side?

**MM:** That's why I evolved that part of my course because knowing the mechanics of

valuation, or knowing how to do the strategy analysis is almost the ante to the game. If you can't do that, you're not even in the game. Everyone has to be able to do that. If you distinguish the great investors from the average investors, it's not because their cost of capital calculation is more accurate. It almost always has to do with the fact that they're able to make good decisions and be correctly contrarian in adversity.

Seth Klarman's got this line that I love: "value investing is, at its core, the marriage of a contrarian streak and a calculator." The contrarian streak means if everyone thinks one thing, I'm going to at least examine the other side. But the consensus is often right. Being a contrarian for the sake of being a contrarian is a bad idea.

The second part, the calculator, is really crucial. It's really the combination of being willing to take the other side when expectations are mispriced. There's another interesting question, which is, how much of this is just your natural personality? How many value investors are born that way, and how many can be trained? I think a lot of this is based on people's natural proclivities, and we can add on some tools to help people get better at it, but guys like Warren Buffett, Charlie Munger, and Gary Brinson seem to be that way naturally.

**TD:** Yeah, I think that's true. Both a good investor and a great investor will be wrong 45% of the time. But a great investor will admit when he's wrong. I think that's the

hardest part of the business. If you can be right 55% of the time, you'll be good. If you can admit when you're wrong, then you will be great.

**MM:** There's a famous quote from John Maynard Keynes, "worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally." If I'm short retail, and everybody else is short retail and it goes up, yeah, it's too bad, but everybody else had the same view. We're all together, right? That's where it becomes really difficult. A lot of the great investors I've been around, somehow they don't care much about what other people think. It's actually a phenomenally good trait as an investor and a phenomenally not good trait as a human being.

**G&D:** Can you each talk about your specific strategies and process?

**TD:** My flagship strategy is a core U.S. equity fund. It has about 70 names. There are periods when we have pretty high tracking error, and periods when it's not as high. I tend not to be sensitive to sector allocations. I think there's some opportunities out there right now. We find both semiconductors and financials really attractive, which is great because they are low correlation, kind of like energy and airlines.

My newest strategy is a U.S. sustainable portfolio. That one's going to be really interesting. It's about two years old. It's a concentrated strategy. I think investors more and more want concentrated

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Greg Doger de Speville '19, Neethling McGrath '19, and Arthur Brousseau '19 deliver their HVN pitch

strategies, which I think is a secular shift and not a trend. There is also growing sensitivity to sustainability, like Environmental, Social, and Governance, or ESG. What we've been trying to do is incorporate some ESG metrics into our valuation methodology. If you're a pure investor trying to figure out the cash flows that are going to accrue to the owner of a business, you should always have been incorporating that, right? You've always cared about governance. You always care about environmental impact. You produce something that has a need for water and you're not near a water supply, things like that. But right now, we're starting to see a lot of interest from clients in some of the ESG stuff.

**G&D:** Can you talk a bit about GEVS, and why you guys have set the system up that way?

**TD:** So Gary Brinson, Jeff Diermeier, and Bob Moore built this thing in 1980. Back then we called it EVS, Equity Valuation System. They threw a 'G' on there at some point, for Global. I'm surprised Gary did, because when I started with the firm, our 401(k) had four options: equity, fixed-income, balanced and cash. Those were the names. They were all global. Gary didn't even put global because he said, "how else would you invest?"

The valuation system for us is basically a means of incorporating all of the analyst's ideas and insights into something where I can use the calculated part for my contrarian analysis and

compare price to pure value. Then we get a ranking of stocks. I can print out a histogram. I can rank it by analyst, by sector, and by country. The other thing that's

***"I think one of the biggest mistakes you see in the investment business is people fail to distinguish between what's priced in and what's going to happen fundamentally."***

nice is that we don't have just all of our outputs, but we have all of our inputs. We have all of our inputs for the last 35 years for every company that we've been covering.

The nice thing is, if you come in and say, "IBM looks cheap," I can see if it looks look cheap relative to our history. How have we modeled this historically? Have we tended to be right on IBM? No, we've been wrong. Since I have all of the inputs, I can basically look at it and say, "well, if our analysis is correct now, what are our assumptions?"

Where it helps me the most is when you go through that period when you underperform. We measure the standard deviation of the alphas, because the alpha from our valuation system is expected excess return, and if the alphas are really tight, that means the market's pretty

efficient. When the standard deviation of the alphas widens, and I can tell you that when the distribution goes from narrow to wide, we will underperform in that area, during that period. It means the expensive stocks are getting more expensive and the cheaper stocks are getting cheaper. We'll underperform when this widening occurs because we tend to own more of the cheaper stocks that are getting cheaper.

Think back to the end of 1999 when the market was exploding. That's the tricky part of this business, and when your clients become really important. When the standard deviation of the alphas widens, that means two things. One, you will have just underperformed by a lot, and two, you will also have the greatest opportunity. That's when you want to sit in front of your clients and say, "this is what we've been waiting for. This is probably the only thing you'll purchase in your life that you don't get excited about when it goes on sale." If you wanted some new Nike shoes, and you see they're on sale, you get all excited. When the stock goes on sale, you say, "uh, I'm not sure."

I know so many people — I call them the dry-powder brigade — who have lived their whole life with dry powder. Most of them were not investing in March 2009. These investors need some kind of "true North" that will tell them when the opportunity set is wide and when the world is expensive or cheap. At the moment, it's not that exciting. The spread's about average, which is okay.

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You can make money during average periods. Also, I don't think the world is as expensive as most people think it is.

**G&D:** Michael, do you feel comfortable talking about the strategy?

**MM:** Well, BlueMountain has multiple strategies. We do a lot: anywhere from credit to systematic and discretionary equity, to distressed, to volatility trading. As a consequence, the processes range from quantitative and systematic strategies to fundamental analysis, credit, and parts of discretionary equity. It runs the gamut. The unifying theme is ultimately decision making, which is thinking about probabilistic bets.

What's interesting is that there's an opportunity in a firm like this to really collaborate across asset classes. As an equity analyst, is it helpful to talk to a credit analyst, or even someone who trades volatility? My job as Director of Research is basically to work on all aspects of the investment process.

**G&D:** What are the biggest challenges you face as a Director of Research, overseeing that many different types of strategies and so many different types of people?

**MM:** There's a great essay that I learned about from Atul Gawande, who wrote *The Checklist Manifesto*. It was an essay written back in the 1970s by, of all things, two philosophers about medicine. The question was, "why do doctors fail?" They said it basically comes down to two

things. The first is ignorance, meaning you just don't know what you're doing. You don't know how to do this particular operation or whatever it is. The second way doctors fail is execution. People just don't do what they know they should be doing. When you read *The Checklist Manifesto*, it's much more about the latter than the former.

**TD:** They weren't washing their hands.

**MM:** He's getting people to wash their hands. Now, by the way, I wouldn't want to be too critical, because if I'm a physician, and I'm trying to treat a patient, I'm interested in the patient's well-being. That becomes the most important thing. These other things become, I don't want to say that they're sidebars but they don't seem to be the most pressing things at the moment.

When I think about investing, it's really trying to bring both of those things to bear. Are there tools that we can provide people with to make them even more effective at what they do?

The second part is we make sure people are very methodical in their decision-making. Every time we make a decision, are we thinking about things properly and considering all the different alternatives? Why do investment committees exist? Why are there committees at all? Why do people work in teams? The answer is that a team, if done properly, surfaces and considers more alternatives than you might consider by yourself. It offsets some of the biases that we all bring to the

job every day.

To me, those are the two big areas: just getting better and executing effectively day in and day out. I think Gawande's major contribution to the world is really recognizing that there's huge upside to just executing what we already know how to do. It's remarkable how often people deviate from their process.

**TD:** On our team, adding a name to the portfolio requires two out of three votes. So, if I vote yes and the other two vote no, it's not going in the portfolio, even though I'm the head of our team.

I know a boss who wasn't happy with this structure. He said, "you're the decision maker. You should have the final say." I replied with, "no, I want the process to be the final decision maker." If us getting it right depends on me being smarter than the next guy, we're not going to win. Once you have a well-developed process, it's easier when you bring people in. And it's easier with the current team, if they understand and appreciate it. It's like parenting, in that you need to be consistent. If you start deviating, then there are no rules. In the investment process it's important that you have tight guidelines and rules.

**MM:** I want to say a couple more things about investment process. One is to have a clearly stated thesis and some sort of identifiable edge when entering into a position. The phrase I really like is "linchpin issues." What are the key things that this story's going to pivot on? Usually as an analyst,

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you're looking at a lot of information, but for the most part you're looking at two or three key things. Tom mentioned with Kroger the food inflation and Amazon participation, but it could be whatever is relevant in that particular case.

The second thing that is extremely relevant is "sign-posts," which is, if my thesis unfolds as I anticipate it is going to unfold, here's what we should see happen. If it doesn't, this gets to one of the most difficult things we have to do as investors, which is to update your view. The fancy term is Bayesian reasoning. Every day, we all wake up with prior views of how the world works. Then we walk into the world and things confirm or disconfirm what we believe. The question becomes, how good are you at updating your views when new information comes in?

That's incredibly difficult, and part of it is overconfidence. Another huge component is confirmation bias. Even if you struggle to invest in something you've done a lot of work on, once you've made the decision and it's in the portfolio, your reputation is on the line. You will tend to seek information that confirms your view. You're going to dismiss information that disconfirms your view. It's incredibly difficult to overcome.

**G&D:** What are the pros and cons of working in investment teams?

**MM:** We've also done a lot of work on teams in general, and I have some thoughts on that. The first thing I'll say is that

the investment industry has changed radically in the past 30 years. It used to be the case that almost all portfolios were run by individual PMs, and a very small minority was run by teams, but now it's the opposite. Something like three-quarters of all mutual funds in the United States are run in

***"I think the weak players at the poker table used to play and lose. Now, they're indexed. They show up at your house Friday night and they drink your beer, but they don't actually play poker."***

teams, which is an interesting thing.

For teams to be successful, there are sort of three key elements to get right. The first is the size of the team. Tom mentioned this, but the empirical research shows that the ideal team size, the team size that creates the most excess return relative to an individual management portfolio, is three. The second best is five.

Why three and five? The answer is odd numbers. To reinforce what Tom just said, you can get situations where it's two-to-one and you can proceed, which is really interesting. People talk about decision making like it's all about consensus. This is not an industry where there's going

to be consensus because there's just too much stuff going on.

The second component is team composition. The ideal here is to have what social scientists call cognitive diversity, people with different training, experience, personality, and background, and who are willing and able to surface different points of view. Every analyst who walks in has their own distribution of potential outcomes. Cognitive diversity makes sure that we're thinking about things that we may not have thought about otherwise, or we're placing greater weight on it than we otherwise would have. So cognitive diversity is important. If everyone's thinking the same way, it does you no good.

The third component is how you manage the team. If you're the head PM, the key is to methodically draw out different points of view. If you walk into the meeting and you're the head guy and you sort of indicate that you like it or don't like it, people will tend to fall in line for social reasons, whereas if you truly are managing the process correctly, you're soliciting views openly, getting them on the table, and properly vetting them. You're even conducting your voting with secret ballots. By the way, when I talk to investors about this, they always nod knowingly because opinions are often suppressed in real meetings because of seniority or whatever it is.

**G&D:** Tom, you mentioned the importance of admitting when you're wrong, and Michael you mentioned sign-posts. How do you marry the

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two of those? If you see a stock go down, do you have a mechanical process that says get out or do you allow yourself to re-evaluate?

**TD:** There are three things that could put the stock on our radar screen. One is that man overboard moment when the stock's down 10% and we run Michael's screen. The second is if a stock has underperformed its sector by 25% since the date we initiated our last review, we do what we call a "stop look." The analyst comes back in to pitch the stock.

The third scenario we look at is if a stock that we've held for two years has underperformed its sector. We identified that holding onto old losers was hurting our performance. When you think about it, if our thesis hasn't played out in two years, maybe we were just wrong in the first place. We owned Teva a couple years back and our linchpin was that they're not going to lose the Copaxone patent. Well, they didn't, and it was still a horrible stock. This was in our old losers' bucket and this is one where I went to the analysts and said, "You know what, unless this is the most compelling idea we have, we're getting this out of the portfolio."

**G&D:** Do you want to talk about your relationship, how it started, and how it's evolved?

**MM:** It goes back to Brinson, just the discipline of the Brinson approach. That's something I've always admired about Tom is his disciplined process. We've also done some interesting things in

implementation, like Brier scores (which measure the accuracy of probabilistic predictions). We put these ideas out there, and very few people follow up, but Tom is one of them.

**TD:** Do you keep Brier scores here?

**MM:** We're working on it. When you go through memos, it's obvious that most people are not used to thinking about things like Brier scores. They're much more comfortable with vague language.

**TD:** My guess is they don't like it.

**MM:** Yeah, well, the key is to not frame it as a scoreboard or as a way to embarrass people. It can be personalized; I just give it to you one-on-one and it's here to make you better. We know that everywhere that Brier scores have been kept and the feedback's been shared on a timely basis, people get better at making probabilistic forecasts.

Another thing we've been doing a lot of work on lately is portfolio construction. It's a thing that seems to be remarkably underdiscussed. When you read books about blackjack like *Beat the Dealer*, there are only two things that are really important. One is gaining an edge, and the second is how much you bet, given the edge you have. We spend a ton of time thinking about this. Many people spend almost no time thinking about this. I've talked to a lot of portfolio managers and a lot of different organizations that are

very heuristic-based in their portfolio construction.

**G&D:** On the topic of value versus growth, do you think there's room for actually having a preference, in the same way that someone might prefer chocolate to vanilla, other than simply recognizing that historically, value has quantitatively outperformed?

**TD:** Think about it as though you're fishing on a big lake, and you're going to go in one segment of the lake. Well, sometimes the fish aren't there. Sometimes they're at the other side of the lake. If you're a quality guy, you're basically limiting yourself to this segment of the lake. Maybe you're a good stock picker, but your opportunities have been minimized just by putting yourself in that box.

**MM:** To me, I would translate value investing into an expectations model, so that what you're trying to do is buy low expectations and sell high expectations. Everything else follows from that. Value investing to me is just buying low expectations. In the Fama-French model, value is statistically cheap stuff, which is a proxy for low expectations, but sometimes it's just bad stuff. That said you might ask, "what does quality mean?" Let's decompose that. You might come up with a little checklist. You might say well, quality means high return on capital, which is often associated with low leverage because you can finance your growth internally and reasonably readily.

High quality might be "sustainable competitive

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advantage,” so some kind of moat. We have to figure out what that moat is and whether it’s going to stick around. High quality might imply management that’s really judicious with capital allocation. So this all becomes part of the analysis of fundamentals versus expectations. I say this all the time, but I’ll say it again right now: I think one of the biggest mistakes you see in the investment business is people fail to distinguish between what’s priced in and what’s going to happen fundamentally.

These are two different mindsets. It’s the difference between the odds at the horse race and how fast you expect the horse to run. Those are fundamentally different things. An interesting experiment would be to break your research department into two groups. One group looks at just expectations. If Cisco’s at \$45 a share, what has to happen for that price to make sense?

Then the second group looks just at fundamentals. They’re basically consultants. They just look at businesses and profit paths and so on. Then, bring them together at the very last second. This is the starkest way how to combine the two parts of the analysis and have a truthful discussion.

Everybody has the same person doing both of those things, but they’re very different. The great investors always separate those in their head. Just because things are going well doesn’t mean the stock is good. Just because things are going badly doesn’t mean the stock is not

attractive. The quality thing is only an input to a broader construct.

**TD:** People like to say, “it’s different this time,” but that’s the one thing that can never be different. “It’s different this time” implies finding a new way to value companies because it’s the only way to make them look attractive. That’s when you should run.

**G&D:** Is the future of investing going to consist solely of algorithms and artificial intelligence or will humans have a role?

**MM:** This is an interesting question. I think Ben Graham talked about this. What is consistent in the last 500 years of markets? The answer is

***“If you get the wrong [mentor], move. The move might not be upward, it might be lateral, but you want to make sure you’re at a company with the right culture. It’s really important.”***

human behavior. Humans oscillate between periods of euphoria and periods of despondence.

Can that ultimately get arbitrated out by a machine? I think that’s an open question. Bitcoin is evidence that’s not the case. An idea that’s important in the finance

literature is limits to arbitrage. Even if there are amazing arbitrage opportunities, if you can’t execute, it doesn’t make any difference. I think bitcoin is a big limit to arbitrage. I think tons of people would love to go short, but it’s just not really viable to go short.

These are just markets. There are many other aspects of interaction where I’m sure human emotions will continue to play a big role. These are interesting questions, even for you guys who are thinking about going into the investment world. How do I think about where my opportunities are?

**G&D:** The last few years have been tough on the long/short space with many high-profile funds reducing AUM or shuttering altogether. How do you see the long-short space evolving over the next five, or 10 years? Do you think recent trends are cyclical or secular?

**MM:** One of the most interesting departure points for thinking about that problem is a paper Sandy Grossman and Joe Stiglitz wrote in 1980 called *On the Impossibility of Informationally Efficient Markets*.

Now, if you’re a bit of a historian, you know that the 1970s were probably the peak of enthusiasm for the efficient market hypothesis. In 1978, Michael Jensen, a prominent finance professor, proclaimed, “I believe there is no other proposition in economics which has more solid empirical evidence supporting it than the Efficient Market Hypothesis.” The argument in Grossman-Stiglitz is pretty

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straightforward. They say that if there is a cost to gathering information that determines asset prices, there should be a requisite benefit in the form of excess returns. Lasse Pederson has this catchy phrase, “markets have to be efficiently inefficient.” Enough inefficiency to get you to do it, but not so much inefficiency that you avoid markets altogether.

So, if the amount of available alpha has been coming down, the amount you should be wanting to pay to capture the alpha should also be coming down. I think that’s a rough cartoon version of what we’ve actually seen: people flipping from active to passive in order to reduce their fees. If you look at the standard deviation of excess returns from mutual funds on an alpha basis, you see that alpha used to have a big, fat distribution. There was lots of positive alpha and lots of negative alpha. Smart guys win, dumb guys lose. Today, that distribution has shrunk. Very little positive alpha, very little negative alpha.

That partly relates to the lack of volatility in the market. It’s very difficult to distinguish yourself when realized volatility is around 6-7%. Is this volatility decline secular or cyclical? I don’t know the answer. Having been around for a long time, I don’t know what the mechanism is to make volatility go up, but I’d be willing to bet that the current low volatility environment is not going to stay here forever. We’ll see a reintroduction of volatility at some point. That’s going to freak out a lot of people, I think, when that occurs.

**TD:** Especially if the things that lead to mispricing or dramatic movements are human beings. Humans haven’t evolved that much in the last 50 years.

**MM:** The 2008 financial crisis, which started in housing before spilling over into other sectors, was more leverage related. Today, the concern isn’t leverage. I think the banks and regulators are taking care of that, for the most part. I think the concern is more liquidity.

Envision this scenario. Pick an ETF with a bad liquidity profile — high yield is probably the best example. You trade your high yield ETF all day, but the underlying liquidity is not as good as you’d expect. Today, the authorized participants are okay, but if there was a wave of sellers, there isn’t the underlying liquidity, so they might have some problems.

**TD:** They’ll have a run on the bank.

**MM:** They’ll have a bit of a run on the bank, and then what will happen is, all the newspapers will write, “ETFs are bad.” Mom and pop will see that, and they won’t distinguish between high yield ETFs and everything else, and the thing just cascades. You might initially say, “I own SPDRs,” or “I own the financials ETF. I’m cool.” The problem is, if it cascades, you’re not going to be cool. That to me would be the way the disaster scenario might propagate. I’m not predicting it, but I’m saying that’s not an implausible scenario to consider. I think very few people are really totally

prepared.

**TD:** That would create a great opportunity because none of that impacts value.

**MM:** Right. When you sell the ETF, you’re selling stuff in proportion without regard for value, so everything goes up or everything goes down. It reintroduces the question: we’re humans, will things change? It’s very important to understand that the ecosystems are very different today. It will be a different path.

**TD:** The growth of passive has been very tough on active management. It has really changed the business. The investment opportunity would be if Michael and I were the only two investors in the world and we’re both trying to make money. I’m trying to beat the market and he’s trying to beat the market. Then, one day, you enter and say, “Yeah, I’m going to do this too, but I’m just going to buy and sell based on market cap.” The two of us would look at each other and say, “Finally!” It’s like you’re playing poker. You want something you can make money at, right? You don’t want to sit down with world-class poker players.

**MM:** I think the weak players at the poker table used to play and lose. Now, they’re indexed. They show up at your house Friday night and they drink your beer, but they don’t play poker. I think it’s actually gotten harder to generate alpha, even though intuitively you might think fewer participants should make the game easier.

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**G&D:** We talked a lot about changes in the industry. Do you have any advice for students interested in investment management on how they should be spending their time?

**TD:** Michael talked earlier about the man versus the machine. You need to know how to use the machine. Be familiar with the machine. I can stick my head in the sand and say, "Oh, it's not going to make any difference," but it is real, and understanding the ability to code, things like that, I think are important.

The other thing is to not assume life is a straight line. I'm tapping into hindsight bias here, but I actually think it's good, whether it's in your life or your career, for your path to be jagged. Sometimes you're on the elevator and sometimes you've got to take the stairs.

Earlier, Michael and I were talking about the value of mentors. I feel very lucky in my career because you don't always get to pick who your mentor is or who you work with. If you get the wrong one, move. The move might not be upward, it might be lateral, but you want to make sure you're at a company with the right culture. It's really important.

**MM:** I think it's important for people who want to go into the investment management industry to do it for the right reasons. A lot of it is about passion for what you're doing. I'm not sure everyone who goes into it is passionate about it, but it's important that you really love it. It can be really challenging, it can be really humbling, but it's an amazing

field for learning with amazing people.

Opportunities are a big deal. Think about stepping back and saying, "If I want to generate excess returns, where is that likely to happen?" Being the 500th large-cap US manager is probably a tough way to distinguish yourself. However, there might be other markets where that could be the case.

The last thing I'll say is this is a fabulous business for constant learning. You can never rest. You have to learn every day, knowing you're never going to whip this game. I think it's a huge commitment. The best investors I know are really big readers. They are very thoughtful and they're deeply committed. That's not for everybody.

**G&D:** Do you have a favorite non-investment book that's shaped the way you view the markets?

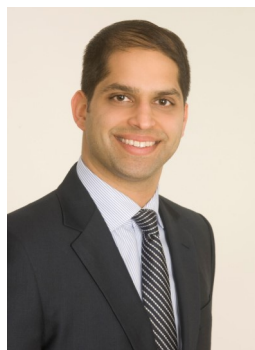
**MM:** I usually recommend three books: *Consilience* by E. O. Wilson, *How the Mind Works* by Steven Pinker, and *Complexity* by Mitchell Waldrop.

**TD:** My three to bring on an island would be: *Atlas Shrugged* by Ayn Rand, *The Baseball Abstract* by Bill James (historical or early 80s annual edition) and one I am reading right now, *Thinking in Bets* by Annie Duke. A great read and also a great way of improving your decision-making ability when dealing with uncertainty, which is what we do every day.

**G&D:** Thank you so much for your time.

## ROAM Global Management

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**Rishi Renjen**

**Renjen has been an Adjunct Assistant Professor in the Value Investing Program at Columbia Business School since 2012 and continues to teach year-round. He is also on the Board of Trustees of the Excellence Community Schools, a charter school management organization, and on the liaison committee to the DREAM Charter School and Washington Heights Expeditionary Learning Schools (WHEELS) as a Board Member of the Maverick Capital Foundation.**

**Graham and Doddsville (G&D):** Can you talk about your background and what led you to this point of launching your own fund?

**Rishi Renjen (RR):** I grew up in the Northeast and had an interest in finance from an early age, which led to my undergraduate path at Wharton and four investment banking internships during my four summers in college. After college I joined Citigroup and then Warburg Pincus, working in private equity from 2005 to 2007 which was the peak of the buyout boom. Early on, I was taught to take the long view in my career, and I consider those first eight years my foundation in investing where I developed critical analytical and business skills.

I spent the next ten years in global, equity long/short investment management. My early days as an analyst at Glenview are still very present for me, as Larry Robbins instills in you to be “the

smartest person on your name” and holds each member of his team to a high standard of detail with investment write-ups, financial models and deep fundamental research. I often say that Glenview is one of the best places on Wall Street to train—the analytical rigor is tremendous. At Glenview, I observed first-hand how to manage volatility within a concentrated portfolio as well as how to motivate a team through a challenging period. Glenview left a strong mark on me and my career.

In 2009, I joined TPG-Axon in London as I wanted to truly understand the global component of investing, and Dinakar Singh was at the forefront of that. I spent a third of my time in Asia covering a range of industries and dove into investing in India as that market grew. I had a range of experiences in India, from visiting IT parks to assessing land banks while sitting on the board of a private real estate company.

TPG-Axon gave me a deep appreciation for the nuances of global investing as well as for managing risk, which was a core component of that firm. Returning to the U.S. as a Partner in 2011, I felt I had made the jump from an analyst covering a single position to an investor driving portfolio-level decisions – I credit Dinakar for that. I also began to hone in on my own investing style, which was rooted in my experiences at Glenview and TPG-Axon but clearly moving in a different direction.

**G&D:** Is that what led you to Maverick Capital?

**RR:** Yes, exactly. I was introduced to Lee Ainslie in 2011 and we spent a year getting to know each other. At that point in my career, my thought process focused not only on investing but also leadership and culture.

I was fortunate to join Maverick Capital in 2012 as a sector head and, over my five years there, I ran a number of sectors—business services, consumer, and media and telecom. What was critical to my decision is the one-portfolio approach of Maverick, where capital flows to the best ideas. I believe strongly in this investment approach, and during my time there was asked to join the Stock Committee and Advisory Committee as part of the leadership team at the firm.

Working at Maverick, I was very cognizant of the legacy I was a part of. Few funds have built a twenty-five year track record at that level across multiple businesses, from fundamental investing to venture capital to quant. I have even more appreciation for this legacy now that I am starting my own fund, ROAM Global Management. Lee is in a league of his own. Sitting next to him for five years—my office was right next to his—was one of the most remarkable things to happen in my career, not just for investing but also from a business and leadership perspective.

**G&D:** What will you bring to ROAM Global from working with three such notable investors in your career?

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## *ROAM Global Management*

**RR:** Mentoring is critical to the business of investing, and I have been very fortunate to learn from three pioneering investors. From Larry Robbins, I learned that you should have an extraordinary level of knowledge on a name before underwriting it, so that you have pre-built the conviction when the market goes against you. Working for Larry is where I gained the perspective and confidence to run a concentrated portfolio.

From Dinakar Singh, I learned about investing on a global basis, which is a defining component of our strategy at ROAM Global. And from Lee Ainslie, I learned about culture, vision and risk management. I believe culture is what has kept Maverick in the top-tier of a hyper-competitive industry for more than two decades. I still sit on the Board of the Maverick Capital Foundation for this reason.

Beyond those investors, the other noteworthy mentor in my life is my uncle, Rana Kapoor, who is one of the founders of Yes Bank, one of the leading private-sector banks in India. My uncle has been hugely influential in driving my entrepreneurial spirit from an early age.

**G&D:** What is ROAM Global's strategy?

**RR:** ROAM Global Management is a global, equity long/short fund with an emphasis on single-name shorts. It is an extension of the strategy I ran at Maverick Capital, but with a higher degree of concentration. Our approach is entirely fundamental and bottoms-up

and we focus on four sectors of expertise where I have managed portfolios in the past—consumer, media and telecom, business services, and select cyclicals. I believe our four-sector focus provides enough breadth to be opportunistic and flexible, yet is targeted enough to allow us to develop deep expertise—an ideal balance.

Given that we run a concentrated portfolio, our

***“Mentoring is critical to the business of investing, and I have been very fortunate to learn from three pioneering investors.”***

maximum position sizes are 20% on the long side and up to 10% on the short side, if the opportunity presents itself. We offset this level of concentration by running a lower level of gross exposure, typically between 75% and 150% of the fund's capital, which we believe is critical to managing a portfolio in an increasingly volatile environment. I firmly believe gross exposure is the best risk management lever, in part because I have seen the adverse effects of portfolio leverage during key points in my career.

**G&D:** What kind of companies make for a core long holding? And what about a core short?

**RR:** An attractive long position is one where business quality and management value

creation strategy align with our investing principals. That's critical for concentrated portfolio investing and we have no flexibility on that mandate. Beyond that, a certain degree of analytical rigor and a variant perception, be it quantitative or qualitative, are requisite for us to initiate a position. Lastly, margin of safety is key, since we will size positions based on the asymmetry of return outcomes.

On the other side, an attractive short is not about where a stock price will be in 90 days but rather a business model that is undifferentiated, and where moats are eroding at a greater speed than the market appreciates. I often find myself shorting businesses that are operating at near-peak fundamentals where one variable or one line item in the P&L is driving our variant perception.

Single-name, alpha shorts are where we spend a significant amount of our time at ROAM Global, and how we will drive a lot of our differentiation over the long term.

**G&D:** What is the duration of a typical long?

**RR:** Although I have been teaching the Applied Value Investing class at Columbia for six years, I am not a traditional value investor. While margin of safety is a governing principle for my investing philosophy—we are constantly questioning “How much money can we lose from here?”—we ideally like to compound earnings with our core holdings, assuming the reward-risk merits capital and the market hasn't fully realized our view of

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## ROAM Global Management

intrinsic value. In that context, we tend to think about long positions on a one-to-three-year basis. We have a private-equity approach to investing given my background, but we will let risk-reward drive the portfolio.

### G&D: And shorts?

**RR:** On average, we underwrite shorts to a one-to-two year time horizon. We are compelled to short more as those names go up because we have high conviction in our fundamental analysis—tying back to my learning from Glenview. On a max short, I am focused on take-out risk and more broadly risk management. We are now in a world where organic growth remains challenged, debt is still cheap by historical standards, and private equity firms have significant dry powder—so even take-outs that seemed inconceivable in the past may happen. It also means companies can extend their lifelines longer than we anticipate.

Western Union is a great example. I was short the stock for five years and the stock price hadn't changed during that time even as the broader market has gone up. It was at \$18.50 five years ago, and is at \$19.00 today.

**G&D:** Isn't that situation a win? As long as the short was flat, you can fund long investments with that capital, correct?

**RR:** Yes, and our measurement of success is the long/short spread that we generate. Given the market has more than doubled over that

time period, I find that short to be an extremely huge win because of the spread we generated against it. Still, I have to ask in my post-mortem, which is critical to our investment process: If I thought fair value for that name was \$12.00, then what changed and was I "right" in my assessment of fair value?

**G&D:** You mentioned margin of safety. Most people can define that on the long side, but how do you define it on the short side?

**RR:** It is much harder on the short side, and often comes down to judgment and

***"We are now in a world where organic growth remains challenged, debt is still cheap by historical standards and private equity firms have significant dry powder—so even take-outs that seemed inconceivable in the past may happen."***

experience as an investor. I often find that a stock with a high multiple is probably the one that has the greatest continued upside as people are conceptualizing new markets or growth not apparent in the near-term cash flows. Tesla is a great example. Autos investors assess units sold, track global SAAR trends and apply peak/

trough margin frameworks to names like Tesla, as I have in the past, but in their assessment of intrinsic value may not be considering the possibility that Elon Musk is one of the greatest technologists of our generation since Steve Jobs. There is no margin of safety in the latter.

**G&D:** Is there any significance to the name ROAM Global?

**RR:** There is. I wanted to have "global" in the firm name because it speaks to my experience and is core to our investing mandate. One of my colleagues who joined early asked me, "So what do you do when you go to a new city?" I said, "I usually grab my iPhone, put in my ear buds, and roam the streets." She said, "Why don't we name the firm ROAM Global?" I love it because "roaming" also signifies being freethinking—remaining independent of the crowd. Internally, our tagline is "we are roaming globally" which captures the spirit of how we invest, and our mindset.

**G&D:** Can you talk about the global aspects of ROAM Global?

**RR:** Being truly global is a critical way to differentiate. Fact-pattern recognition helps us find compelling investments. For example, one of the most fruitful opportunity sets in my career has been connecting patterns from developed markets to emerging markets. We look for markets rebounding off cyclical troughs with accelerating fundamentals, like in Latin America, or markets where political realignment is complementing economic recovery to create a

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large new fishing pond, like in India. I have been investing globally my entire career, have lived and worked abroad, and have deep family and business roots in India. All of this lends to unique perspective. That said, we are not making top-down calls.

**G&D:** How have you built the rest of your team?

**RR:** The ROAM Global team comprises six professionals today who will be the team at launch and for the foreseeable future. Point to point, it will be a year from when I left Maverick to when I launch ROAM Global because I wanted to spend the time investing in the build-out of the business and in finding the right people. Talent development and setting a culture upfront is core to differentiation and therefore core to ROAM Global. It is the “X factor” that people can’t directly analyze when assessing a fund’s returns.

Very few businesses have such clear and frequent dynamics of being right and wrong as the investing business. When you’re wrong, not only are you wrong, but you are wrong with extremely talented people on the opposite side and in an extremely public manner. There are flashing lights in front of you daily signaling whether you are right or wrong. For me, what cuts through this intensity and pressure is culture.

**G&D:** How did you specifically set the culture upfront?

**RR:** Every person who joined the firm from day one is a partner, so our success will be

collective, which I believe is critical to concentrated investing and a one-portfolio approach. I have experienced various compensation schemes and cultures across the institutions I worked for, which allowed me to think about how I wanted to approach these topics at ROAM Global. I want everyone to feel that we are in this together.

The other important cultural component is our physical space. We have a large, open trading floor—no separate offices. I have a small office without a computer in it for a reason. If you want to discuss something, just stand up. There is no need to wait for the team meeting because we don’t have those. The debate is continuous, always happening. There is a clear, documented process for how we do our research, but the debate is iterative and organic in the office.

**G&D:** How does the team bring up ideas, conduct research, and put them into the portfolio?

**RR:** Our analyst-first mentality and analytical rigor will differentiate us. How do we get to a name? We start with themes that we come up with collectively. Our view is if we get the themes right, we will make money, and if we get the right one or two names within a theme right, we will truly differentiate returns. Beyond that, our defined stages of our investment process help us cycle through names in an efficient manner.

In terms of how we work together, everyone’s opinion is

required but it is never about building consensus. It is about the debate and constantly challenging the thesis, something I very much enjoy. That is why we come into work every day. In my classes at Columbia, I ask students “What do you think?” Sometimes they start with “Well, the market is...” To which I say: “No! What do you think?” This is a job where everyone’s opinion matters. It is then incumbent upon me, as the portfolio manager, to weigh the viewpoints as appropriate.

**G&D:** You talked about post-mortems earlier. Can you elaborate how and why you conduct them?

**RR:** You can make money without being right. For example, a stock may appreciate from a takeout offer, but was a takeout anywhere in your thesis? If not, then it is a failure in your investment process. Or, if you assessed fair value at \$175 to \$200 a share but the management team is choosing to sell out in an all-stock deal at \$150, then where was your understanding of management’s alignment of incentives? This type of reflection is why post-mortems are important—you have to make sure your process is strong. Reflecting on your wins and losses can help build a repeatable process that is constantly improving.

**G&D:** What have you looked for so far in analyst candidates?

**RR:** I look for passion for investing and intellectual curiosity—a desire to learn combined with a work ethic.

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Brad Headley '19, Ryan Darrohn '19, and John White '19 are short CHRW at the 2018 Pershing Square Challenge

Zach Rieger '17, my first analyst hire, has these qualities and also understands my investment process from being a student in my class at Columbia. We have other similarities as well—the University of Pennsylvania, investing banking, private equity—but beyond this I was drawn to his sound business judgment and his deep appreciation of analytics. I think one of the primary reasons he wanted to join ROAM Global was that he knew my commitment to talent development.

Across the team, passion is key because we are communicating all the time, even on weekends, about stocks and investing. You have to really love this business to be successful.

**G&D:** Some people may have expected you to launch your own fund sooner. Why now?

**RR:** It is not about age but about being at a certain stage in your career and your life, when you can sit credibly in front of your team and potential investors. You only get one shot at this, and I wanted to be prepared and methodical. And a decade of global investment management experience gives me great confidence at ROAM. Launching an investment management firm is about building an institution that instills confidence in the firm's business operations and its clearly defined investment process.

**G&D:** When analyzing an investment, what kind of conversations do you have with management, and how do

you incorporate that into your process?

**RR:** A dialogue with management is important, but not the single variable driving an investment decision. We are fortunate to have a long list of management teams we have invested behind, and the frameworks we have taken from those case studies are

*“Teaching means a great deal to me—the classroom is a seamless extension of what I do at work. When people ask, “How do you have time for teaching?” I say, “It’s the best thing I’ve ever done.”*

applied in our investment decisions. We are focused on management incentives and alignment, and with that comes a history of value creation that we can study.

**G&D:** If you were to summarize in one phrase the biggest differentiating factor at ROAM Global, what would that be?

**RR:** I believe it is the combination of our investing DNA and my teaching DNA. You need a sustainable, repeatable process combined with the intangible quality of understanding and managing talented people to invest in today's challenging markets. I believe that has resonated with

everyone who interacts with ROAM Global.

**G&D:** Teaching at Columbia seems to have been an integral part of the last seven years of your career. Students have talked about how you challenge them in class. What do you get out of it?

**RR:** Teaching means a great deal to me—the classroom is a seamless extension of what I do at work. When people ask, “How do you have time for teaching?” I say, “It’s the best thing I’ve ever done.” You have to be passionate about investing. You have to live and breathe it. I teach application of theory, so for me teaching is like replicating my workplace environment—the sense of responsibility and accountability, the idea that your voice really matters and that it’s incredibly important to calibrate what you know and don’t know. My students keep me honest and in tune with the world, which I deeply appreciate.

**G&D:** Since you’ve worked with so many students and young analysts, what are the biggest mistakes you see them make?

**RR:** The most common mistake I see in all analysts, not just the younger ones, is underappreciating the range of possible outcomes. Often, it is difficult to analyze that range and realize things can be very different from where they were six months ago. I see analysts account for 30% upside and 30% downside all too often, but I promise you there is a broader range of outcomes for every business, even the boring, stable ones.

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**G&D:** Any other advice for students?

**RR:** First, identify the work you can do on your own early in your career. This is a business that requires you to be a self-starter. Second, find your own authentic voice. We all can have the same information, but how we choose to refine it can be very different. You may think long, I may think short—ultimately, it comes down to judgment. Work towards synthesizing what the information means to you to find your own voice. This is how you build your own investing DNA.

**G&D:** Thank you.

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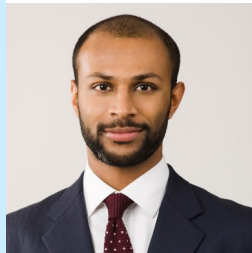
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### Graham & Doddsville Editors 2017-2018

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Abheek is a second-year MBA student and a member of the Heilbrunn Center's Value Investing Program. He spent last fall interning at Firefly Value Partners, and worked for Davis Selected Advisers in the summer of 2017. He's done stints previously with Indus Capital and Hound Partners. Prior to Columbia, he wrote for the Wall Street Journal in Hong Kong, most recently for its flagship Heard on the Street investment column. He studied philosophy at Yale University. He can be reached at ABhattacharya18@gsb.columbia.edu.

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Matthew is a second-year MBA student and a member of Columbia Business School's Private Equity Fellows Program. During the summer, he worked in the Investment Banking Division at Goldman Sachs & Co. LLC. Prior to Columbia, he was a Portfolio Manager at ClearArc Capital, Inc. focused on foreign currency and emerging market debt. Matthew studied finance at Grand Valley State University. He is a CFA Charterholder and a 2018 McGowan Fellow. He can be reached at MMann18@gsb.columbia.edu.

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Adam is a second-year MBA student and a member of the Heilbrunn Center's Value Investing Program. During the summer, he worked for the Intrinsic Value Team at UBS Asset Management. Prior to Columbia, he worked for T. Rowe Price and Lincoln International. Adam graduated from the University of Illinois at Urbana-Champaign with a BS in Finance. He is also a CFA Charterholder. He can be reached at ASchloss18@gsb.columbia.edu.