UNIVERSITY of VIRGINIA | DARDEN Business Publishing

UV7617
Rev. Mar. 13, 2019

Darden Capital Management: The Cavalier Fund

In early April 2017, the Cavalier Fund management team (Cavalier) was in the midst of its first meeting of the new fiscal year. The team was part of the Darden Capital Management (DCM) program at the Darden School of Business, in which MBA students were entrusted with managing endowment capital for the school foundation. The program sought to prepare its participants for careers in investment analysis and portfolio management, with the recognition that hands-on experience in investment management was an important aspect of professional training. The total assets under management for the Darden Capital Management program were over $11 million, and were held in five funds: the Cavalier Fund, the Darden Fund, the Jefferson Fund, the Monticello Fund, and the Rotunda Fund. Each fund was managed independently by a small team of MBA students with some guidance from a student executive team, a faculty advisor, and a board of trustees.

Cavalier's investment strategy was to use fundamental analysis to identify and invest in companies that were undervalued relative to their long-term earning potential. The fund team looked for stocks that would generate above-normal returns over a one-to-four-year horizon. Using a bottom-up approach to stock selection, Cavalier held a diversified portfolio of about 25 stocks with current assets under management of $2.7 million. The fund also allowed some short positions for stocks expected to underperform. The new team of four first-year student portfolio managers (see **Exhibit 1**) was unified in its resolve to beat the fund's benchmark—the Standard and Poor's 500 index (S&P 500)—over the coming year. There was, however, a fierce debate on the stock selection strategy required to accomplish this goal.

The Portfolio Allocation Decision

Prior to the meeting, Cavalier's senior portfolio manager, Daniel Nickerson, solicited from the team a list of securities for consideration as investment candidates. This request resulted in a short list of four stocks: Delphi Automotive; Groupon, Inc.; Kellogg Company; and Kinross Gold Corp. The team collected a variety of historic and estimated data on the four stocks. **Exhibit 2** contains the monthly return performance of each of the four stocks over the previous five years. **Exhibit 3** details various firm characteristics and historical return statistics. The team had met to obtain a consensus view on the anticipated returns for each stock over the next three years. In this analysis, the team had developed a financial forecast and a terminal value estimate of the fair value of each company for 2020. Based on these figures, the team had calculated the following anticipated rates of return for the next few years (**Table 1**):

This case was prepared by Michael J. Schill, Professor of Business Administration, with the assistance of the 2017–18 management team at the Darden Capital Management Cavalier Fund. The case contains some fictional content and was written as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation. Copyright © 2018 by the University of Virginia Darden School Foundation, Charlottesville, VA. All rights reserved. *To order copies, send an email to* sales@dardenbusinesspublishing.com. *No part of this publication may be reproduced, stored in a retrieval system, used in a spreadsheet, or transmitted in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—without the permission of the Darden School Foundation.* Our goal is to publish materials of the highest quality, so please submit any errata to editorial@dardenbusinesspublishing.com.

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Table 1. Anticipated rates of return.

Stock	Anticipated annual return
Delphi	9.1%
Groupon	9.3%
Kellogg	4.6%
Kinross Gold	8.4%

Source: Author analysis.

Nickerson's suggestion that the team narrow the list to a single name generated a heated discussion. Tim Prey was a strong proponent for an investment in Groupon, which had fallen out of market favor over the past five years. Prey argued that its past price declines had now positioned it for a price rebound. While the team agreed that Groupon offered excellent return potential with an anticipated annual return of 9.3%, the team disagreed about the risk the stock would add to the fund.

Leadi Cole insisted that Groupon's risk level was far too great. He backed up his claim by comparing the standard deviations of past returns, and showed that both Groupon and Kinross Gold showed evidence of "wildly volatile" returns with annualized past standard deviations of returns of 67% and 65%, respectively (see **Exhibit 3**). "There is no way our fund can accept swings in returns of that magnitude," Cole contended. Rather than "swing for erratic home runs," he advocated exercising prudence. Cole suggested that stable food company Kellogg provided a smarter place for Cavalier's capital due to its positive return expectations (forecasted to be 4.6%) and drastically lower risk (the annualized standard deviation of returns for Kellogg was just 15%).

Nickerson acknowledged that the decision required an important trade-off between risk and return. To quantify this trade-off, he calculated the ratio of anticipated return to the historical standard deviation of returns, and found that Delphi maintained the best returns for the commensurate level of risk. Delphi's expected return was 9.1% and its historic annualized standard deviation of returns was 25%. Nickerson suggested that Delphi gave the best "bang for the buck."

Sam Kramer shared the view that anticipated returns needed to be normalized by the associated risk of the stock, but he claimed that Kinross Gold was in fact the stock that provided the best overall risk-return impact. Prey disagreed strongly, claiming that "only a fool" would invest in a high-risk Canadian gold stock with an expected return of just 8%. Exercising some restraint, Kramer agreed with Prey that buying Kinross Gold in isolation did not make sense. But Kramer countered that the attractiveness of Kinross Gold lay primarily in its diversification effect with Cavalier's overall portfolio. Kramer made his point by inviting Prey to examine the risk characteristics of a 50-50 weighted portfolio of Groupon and Kinross Gold. He claimed that the standard deviation of returns for the 50-50 portfolio was actually lower than the standard deviation of returns of a pure position in either Groupon or Kinross Gold stock alone. Prey was intrigued by the idea of considering the portfolio impact of each stock rather than thinking of them in isolation.

Kramer went on to explain, "Regardless of your view on Kinross, we can agree that in order to fairly evaluate the anticipated returns of these stocks, we need a benchmark against which to compare them." The team concurred, and Cole emphasized that in order for a benchmark to be useful, it needed to be based on a model that incorporated risk. He reiterated that there was no way to know if Groupon's anticipated return of 9.3% (or the anticipated return for any stock) was high enough unless the team established a risk-adjusted benchmark against which the 9.3% expectation could be compared.

Kramer's proposal for such a benchmark was known as the Capital Asset Pricing Model (CAPM). The CAPM was widely used in practice and was grounded theoretically in the concept that some types of risk were more impactful to investors than other types of risk. For example, risk that was unique to a firm (i.e., idiosyncratic risk) could be eliminated by investors who maintained a diversified portfolio of securities. The

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idea was that random bad news in one stock would, on average, be offset by random good news in another stock in the portfolio. With lots of random firm-specific events going on in a diversified portfolio, idiosyncratic risk could be greatly reduced as opposing price shocks offset each other. Risk that was common across firms (i.e., systematic or market risk) could not be eliminated through portfolio diversification, and so was more impactful to diversified investors. Thus investors were better off not viewing all risk as equal, since some forms of risk were easily neutralized while other forms were not.

Based on this logic, the CAPM stipulated that the benchmark return, R_i, for any security i, could be estimated with **Equation 1**,

$$R_i = R_f + \beta_i \times MRP, \tag{1}$$

where R_f was the risk-free rate, β_i was the beta for security i, and MRP was the market-risk premium, or the risk premium associated with holding the risk of the market portfolio. Prevailing yields on long-term government or interbank borrowings were commonly used as a proxy for the risk-free rate. The market-risk premium was commonly estimated based on the difference between the average historical return on a broad portfolio of equities and the average historical return on government debt. The beta measure was estimated based on the correlation of a firm's stock returns with the returns of a broad market-wide portfolio. Stock returns that had high correlation with the market had high beta risk, and stock returns that had low correlation with the market had low beta risk. A beta estimate could be found by finding the slope of the line that best fit the relation between the returns of the broad market index and the returns of the individual stock (see **Exhibit 4** for an example of a beta estimate of 1.30 for Delphi). In capturing the correlation with the returns of a diversified portfolio, the beta term measured just the systematic risk associated with the stock rather than including the idiosyncratic risk.[1] Professional firms such as Value Line Investment Survey provided proprietary beta estimates.

The team finished the meeting uncertain about their stock-investment decision but convinced that estimating a risk-adjusted benchmark was important in their decision, and that the CAPM was a reasonable model to use.

Nickerson was due at a senior manager meeting the following week with DCM chief executive officer Peter Wilson. In that meeting, Nickerson needed to communicate a coherent portfolio strategy for the Cavalier Fund and provide some indication of near-term trades. Nickerson considered the recommendations of his team members and weighed their views with what he knew of capital markets. (**Exhibits 5** and **6** provide some data on current and historical capital market conditions.) Nickerson reflected on whether a risk-adjusted benchmark would provide any clarity for these decisions.

[1] The statistical formula for beta was $\beta_i = \rho_{iM} \times \sigma_i \,/\, \sigma_M$, where ρ_{iM} was the correlation between the returns of stock i and the market portfolio, σ_i was the standard deviation of returns for stock i, and σ_M was the standard deviation of returns for the market portfolio.

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Exhibit 1

Darden Capital Management: The Cavalier Fund

Portfolio Manager Bios

Daniel Nickerson—Senior Portfolio Manager

Prior to his MBA candidacy, Nickerson worked at the Baupost Group as an analyst in its pricing and valuation group. He valued securities across asset classes including public equities, structured products, derivatives, real estate (e.g., hotel or mixed use), private equity, and venture capital. Prior to the Baupost Group, he worked at State Street as a senior associate in the Structured Products group, focusing on the stable value product. He received a bachelor of science in business administration with a concentration in finance and a minor in economics from the Boston University Questrom School of Business. After his first year at Darden, Nickerson was to spend the summer working at WEDGE Capital Management, a long-only mutual fund.

Leadi Cole—Portfolio Manager

Prior to Darden, Cole spent five years at Bank of America in various corporate finance roles supporting the consumer banking and wealth management lines of businesses, and three years at PPG Industries in its financial development program. He received a bachelor of science in business administration with a concentration in accounting from the University of Pittsburgh. Following his first year at Darden, Cole was to spend his summer in Washington, DC, at Johnson Development Associates as part of the real estate team.

Sam Kramer—Portfolio Manager

Prior to Darden, Kramer spent two and a half years at Ralph Lauren in the Capital Management group, a team responsible for evaluating capital investment opportunities. He also spent three years in a data analytics role at Goldman Sachs, building internal web applications to automate and analyze firm data. Kramer graduated from Fairleigh Dickinson University with a bachelor of science in finance and economics. Following his first year at Darden, Kramer was to spend his summer in New York City at Goldman Sachs as an investment banking associate within the Technology, Media, & Telecom group.

Tim Prey—Portfolio Manager

Prey came to Darden with a background in litigation consulting after spending four years in Washington, DC, as a senior consultant in Navigant Consulting's Disputes and Investigations group. At Navigant, Prey's work focused primarily on legal actions emanating from the subprime mortgage crisis, including evaluating allegations of underwriting malpractice levied against issuers of residential mortgage-backed securities. Prey received a bachelor of science in business and enterprise management from Wake Forest University. After his first year at Darden, Kramer was to spend the summer in Atlanta as a summer associate at Bain & Company.

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Exhibit 2

Darden Capital Management: The Cavalier Fund

Monthly Returns for Proposed Stocks (2012–17)

	Delphi	Groupon	Kellogg	Kinross Gold	S&P 500
Jan-12	19%	-3%	7%	-2%	4%
Feb-12	-1%	-7%	2%	-11%	3%
Mar-12	-3%	-42%	-6%	-9%	-1%
Apr-12	-5%	-1%	-3%	-11%	-6%
May-12	-12%	0%	1%	2%	4%
Jun-12	11%	-37%	-3%	2%	1%
Jul-12	7%	-38%	7%	7%	3%
Aug-12	2%	15%	2%	16%	3%
Sep-12	1%	-14%	1%	-2%	-2%
Oct-12	8%	1%	7%	1%	1%
Nov-12	13%	17%	1%	-4%	1%
Dec-12	1%	14%	5%	-15%	5%
Jan-13	8%	-18%	4%	-7%	1%
Feb-13	7%	35%	6%	5%	4%
Mar-13	4%	0%	1%	-31%	2%
Apr-13	6%	26%	-4%	18%	2%
May-13	4%	11%	4%	-20%	-1%
Jun-13	6%	4%	3%	3%	5%
Jul-13	3%	15%	-8%	5%	-3%
Aug-13	6%	10%	-3%	-8%	3%
Sep-13	-2%	-18%	8%	0%	5%
Oct-13	3%	-1%	-3%	-7%	3%
Nov-13	3%	30%	1%	-7%	3%
Dec-13	1%	-11%	-5%	5%	-4%
Jan-14	10%	-21%	5%	14%	5%
Feb-14	2%	-6%	4%	-21%	1%
Mar-14	-2%	-11%	7%	-2%	1%
Apr-14	4%	-16%	4%	-7%	2%
May-14	0%	13%	-5%	10%	2%
Jun-14	-3%	-2%	-9%	-4%	-1%
Jul-14	5%	5%	9%	-1%	4%
Aug-14	-12%	-2%	-5%	-16%	-1%

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Exhibit 2 (continued)

Monthly Returns for Proposed Stocks (2012–17)

	Delphi	Groupon	Kellogg	Kinross Gold	S&P 500
Sep-14	12%	9%	4%	-35%	2%
Oct-14	6%	3%	4%	30%	3%
Nov-14	0%	10%	-1%	1%	0%
Dec-14	-5%	-13%	0%	20%	-3%
Jan-15	15%	14%	-2%	-16%	6%
Feb-15	1%	-12%	3%	-21%	-2%
Mar-15	4%	-4%	-4%	8%	1%
Apr-15	5%	-8%	0%	-3%	1%
May-15	-2%	-21%	0%	-1%	-2%
Jun-15	-8%	-4%	6%	-22%	2%
Jul-15	-3%	-7%	1%	-2%	-6%
Aug-15	1%	-28%	0%	-4%	-3%
Sep-15	9%	14%	6%	17%	9%
Oct-15	6%	-22%	-2%	-4%	0%
Nov-15	-2%	6%	5%	-5%	-2%
Dec-15	-24%	-11%	2%	-10%	-5%
Jan-16	3%	76%	1%	79%	0%
Feb-16	13%	-17%	3%	16%	7%
Mar-16	-2%	-9%	0%	68%	0%
Apr-16	-7%	-2%	-3%	-25%	2%
May-16	-8%	-8%	10%	15%	0%
Jun-16	8%	48%	1%	6%	4%
Jul-16	5%	11%	0%	-23%	0%
Aug-16	1%	-3%	-6%	6%	0%
Sep-16	-9%	-23%	-3%	-8%	-2%
Oct-16	-1%	-1%	-3%	-15%	4%
Nov-16	5%	-16%	2%	-5%	2%
Dec-16	4%	4%	-1%	25%	2%
Jan-17	9%	23%	3%	-9%	4%
Feb-17	6%	-7%	-2%	-1%	0%
Mar-17	-3%	-1%	0%	8%	0%

Data source: Yahoo! Finance.

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Exhibit 3

Darden Capital Management: The Cavalier Fund

Stock Characteristics and Return Statistics

Company Name	Industry	Historical Returns 2012–17						Beta Estimate[6]	
		Annual Average[1]	Annualized Std. Dev.[2]	Dividend Yield[3]	Safety Rating[4]	P/E Ratio[5]	Bond Rating	OLS	Value Line
Delphi	Auto parts	24.8%	24.8%	1.52%	3	13.6	Baa2	1.29	1.30
Groupon	Internet information	-9.8%	67.3%	0.00%	5	NMF	NA	1.44	1.45
Kellogg	Processed and packaged foods	11.4%	14.6%	2.75%	1	19.3	Baa2	0.54	0.70
Kinross Gold	Gold	-2.0%	65.0%	0.00%	5	24.6	Ba1	0.31	0.80

NMF = Not meaningful; NA = Not available.

[1] Calculated as the average monthly return since 2012, multiplied by 12.

[2] Calculated as the standard deviation of monthly returns since 2012, multiplied by the square root of 12.

[3] Calculated as the total dividends per share over the past 12 months, divided by the current stock price.

[4] The safety rating is obtained from Value Line and measures the price stability and financial strength of a firm. Safety ranks range from 1 (highest) to 5 (lowest).

[5] The P/E ratio is defined here as the current price divided by earnings for the past 12 months.

[6] The ordinary least squares (OLS) beta is estimated as the slope coefficient of firm monthly stock returns since 2012, regressed on past monthly S&P 500 returns. The Value Line beta is an alternative beta estimate provided by a professional equity research team and published in the Value Line Investment Survey.

Sources: Yahoo! Finance, Value Line Investment Survey, Moody's, author analysis.

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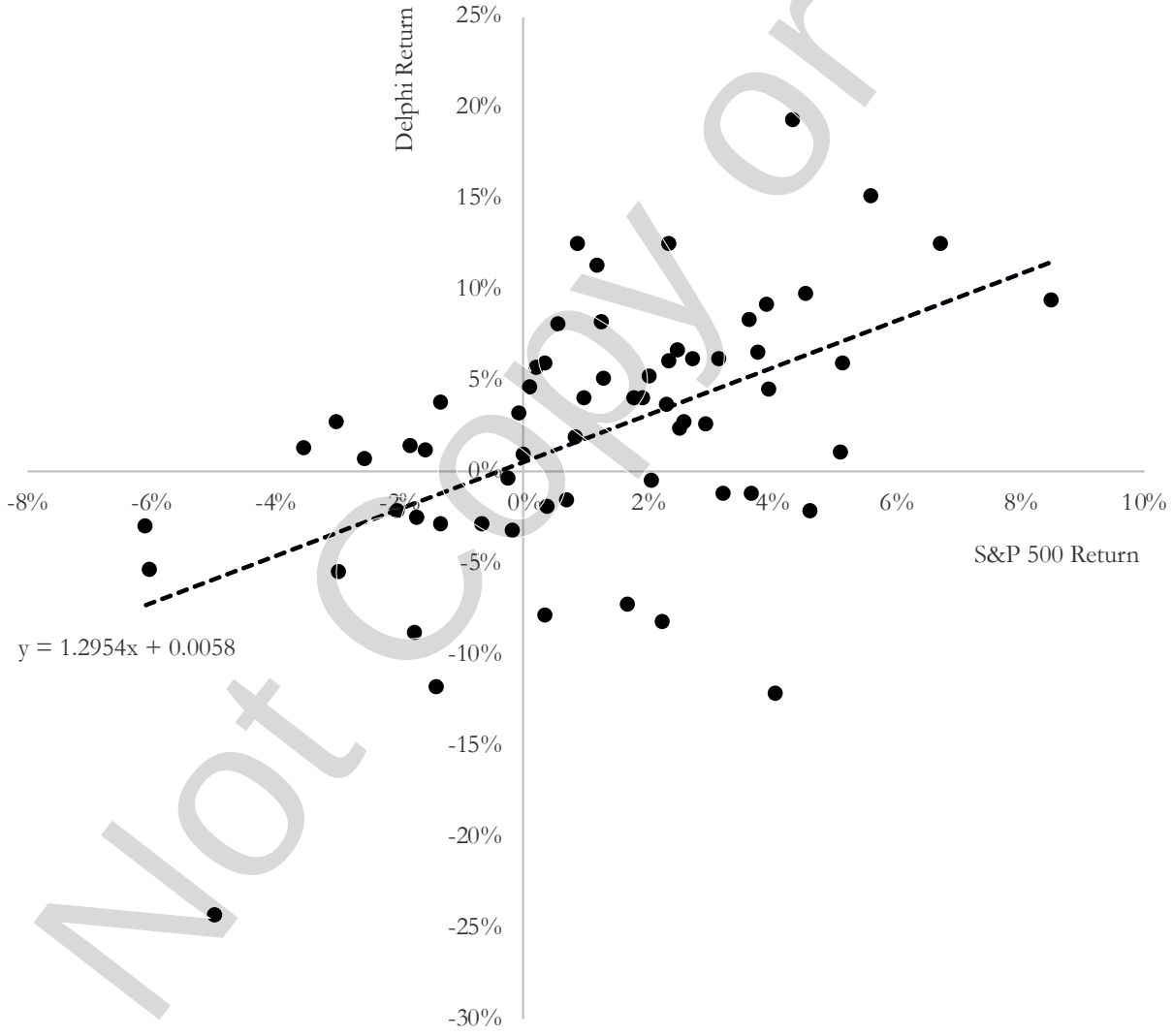
Exhibit 4

Darden Capital Management: The Cavalier Fund

Regression Estimate for Delphi Automotive
(monthly returns, January 2012 through March 2017, with ordinary least squares regression line)



Data source: Author analysis, Yahoo! Finance.

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Exhibit 5

Darden Capital Management: The Cavalier Fund

Summary Statistics of Annual Returns for Various Classes of Securities
(1926 to 2016)

Series	Geometric mean[1]	Arithmetic mean[2]	Std. deviation
Inflation (consumer price index)	2.9%	3.0%	4.1%
US Treasury bills (30 day)	3.4%	3.4%	3.1%
Long-term government bonds	5.5%	6.0%	9.9%
Long-term high-grade corporate bonds	6.0%	6.3%	8.4%
Large company stocks (S&P 500 index)	10.1%	12.0%	19.9%

Data source: Ibbotson Associates, "Stocks, Bonds, Bills, and Inflation, 2017 Yearbook."

[1] The geometric mean is the compound rate of return over the 91-year sample period defined as

$R_{Geometric}=(V_{2016}/V_{1926})^{\frac{1}{91}}-1$, where V_t is the value of the series in the respective year.

[2] The arithmetic mean is the simple average of the 91 annual returns.

Source: Ibbotson Associates, "Stocks, Bonds, Bills, and Inflation," 2017 Yearbook.

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Exhibit 6

Darden Capital Management: The Cavalier Fund

US Capital Market Bond Yields

Security	Dec 30, 2016	Jan 31, 2017	Feb 28, 2017	Mar 31, 2017	Apr 6, 2017
Treasury constant maturities					
1-month	0.44%	0.50%	0.40%	0.74%	0.78%
1-year	0.85	0.84	0.88	1.03	1.05
10-year	2.45	2.45	2.36	2.40	2.34
Corporate industrial bonds (Moody's seasoned)					
Aaa	4.06				
Baa	4.83				

Data source: Federal Reserve Statistical Release (www.federalreserve.gov/releases/h15/update), Mergent Bond Survey, January 2017.

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