The Student Managed Investment Fund: Preparing Future

Oklahoma State University Finance Professionals

A Thesis

Presented to

The Honors College Faculty

Oklahoma State University

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Abstract

This study is intended to determine whether or not the Student Managed Investment Fund at Oklahoma State University properly prepares its students for a career in the financial industry. As part of my research, I have gathered data from former SMIF students that are now participating in various financial career paths. I asked each former student a series of questions that would help to determine the effectiveness of the course. The questions that were given covered topics such as improvement in business related skills, preparation for the financial industry, and testimonies regarding the effectiveness of the class. The hypothesis of this study was that, on average, students that participated in the SMIF course were positively impacted and better prepared for their current occupation in finance. The statistically significant results provided by the survey supported this hypothesis.

Introduction

Founded in 2018, the Student Managed Investment Fund or (SMIF) was established at Oklahoma State University with the purpose of giving students hands-on equity analysis and portfolio management experience. Students that enroll in this course take on the role of an equity analyst that is actively managing a $1.3 million stock portfolio. Using financial resources such as Bloomberg Terminals and public SEC filings, students work in collaborative teams to make public stock recommendations to improve the fund's current holdings. OSU students who decide to participate in the Student Managed Investment Fund tend to later pursue careers in the asset management or investment banking fields after graduation. As a former class member of SMIF that is about to graduate and enter the financial industry, I set out to determine the effectives of the SMIF program, and its ability to prepare students for their future careers. In this document I plan to outline how the Student Managed Investment Fund prepares finance graduates through in-depth qualitative and quantitative research conducted on former SMIF graduates. With the data I received from former students, I have enough information to logically suggest that the Student Managed Investment Fund is an extremely effective career readiness course for future finance professionals.

<u>About The Course</u>

Students enrolled in the Student Managed Investment Fund split up into teams of three to four students at the beginning of the course. From there, each individual team is assigned two sectors within the public stock market. For example, one team would be assigned to the Consumer Discretionary sector, whereas, another team would be fixated on stocks in the Energy sector. Altogether, each team in the class collectively will cover all major sectors within the market. Teams then dig deep into their assigned sectors, and strive to become quick experts in that field. Looking at industry analysis publications, reading wall street analyst findings, and sifting through resources such as the Wall Street Journal are just a handful of examples of ways students are expected to research their assigned sector. After a few weeks of research, teams then begin analysis on specific public stocks to add to the investment portfolio. Most teams in this case are encouraged to perform a top-down approach to their investment pitch – a strategy used heavily in the asset management field. After having just spent weeks researching their own industries, teams start to grasp the narrative within their industry. With an understanding of what is affecting their industry and where it could possibly be headed, teams start screening for well-built stocks that fall under their industry field. With provided materials of value investing versus growth investing, teams can decide how they would like to filter through and pick productive stocks. In my personal experience in the class, I found it interesting to dig for stocks that would be considered value stocks. Value stocks are a category of equities that are considered overlooked or even undervalued for the current valuation. They most likely will not produce high gains in the short-term, but if you can prove they are undervalued at the current share price, substantial long-term returns can be made. A team that is interested in picking a value stock would use resources such as the Bloomberg Terminal to narrow down value stock characteristics

within their industry. An example of this would be filtering to companies that have positive income, low P/E ratio, and have a strong balance sheet. Once a team finds a company that they believe would be a good fit for the portfolio, they are responsible for delivering a "shark tank style" pitch to the rest of the class. The pitch-style presentation is expected to cover key information about the company, along with a personal valuation of what the team thinks the stock price should be. The valuation portion of the presentation pushes students to truly understand how equity markets behave, and how companies are publicly valued. In addition, other members of the class are expected to come prepared for the presentation with already prepared questions. At the conclusion of a team's presentation, each student in the audience acts as a voting member of the fund, either approving or denying the act of purchasing said equity. If majority of the class approves, real shares of common stock will be purchased. As the fund grows and continues to hopefully perform well, capital gains received from the selling of stock will be put back into the OSU finance department through means such as scholarships. This policy serves as a win-win as it sets out to improve the careers of current and future students.

Research Introduction

To examine the effectiveness of SMIF's ability to prepare students for careers in the finance industry, I decided to conduct research on personal testimonies from Oklahoma State SMIF alumni. I was able to collect the names and contact information of all students that have taken the SMIF course, and are now active in their financial careers. To best organize the information that would be collected from these graduates, I decided to create an effective survey. In my survey to former students, I wanted to ask insightful questions that would best help me gauge the level of impact SMIF had on each individual. The questions I presented to OSU's former SMIF students are as follows:

What is your graduation year?

What is your current job field?

Current position title?

How would you rate your knowledge of Excel (before taking SMIF)?

How would you rate your knowledge of Excel (after taking SMIF)?

How would you rate your presentation/ public speaking skills (before taking SMIF)?

How would you rate your presentation/ public speaking skills (after taking SMIF)?

How would you rate your knowledge of company valuations (before taking SMIF)?

How would you rate your knowledge of company valuations (after taking SMIF)?

At what level did SMIF contribute to your educational experience?

Have you discussed your role in SMIF in a job interview?

Is there a specific skill/ method that you learned in SMIF that you use in your career?

Which part of SMIF was the most beneficial in preparing you for your current role/field?

Would you recommend taking SMIF to all Upper-Level Finance majors?

(Note: Rating questions were asked on a scale from 1-10, with 10 being most proficient)

Research Results

What is your current job field?

      With most of SMIF's alumni being a recent graduate - average graduating year was 2020 - there was an impressive sampling of career fields. Below is a pir chart representing the different career fields SMIF students entered into after graduation.
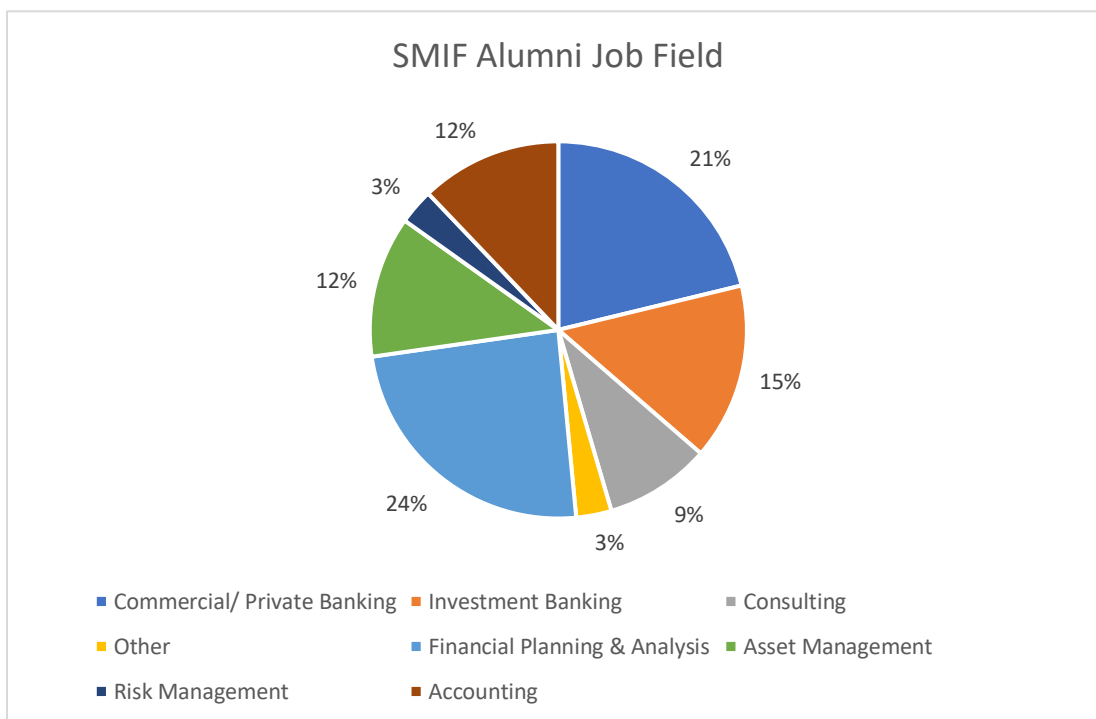
      As the results show, majority of the students surveyed come from a career in Private Banking, Financial Planning & Analysis, or Investment Banking. With majority of the surveyed alumni coming from some of the most sought-after jobs in the financial industry, it can be suggested that SMIF sets up its students for tremendous success in these demanding industries. In addition, having students serving in such highly accredited job fields adds substantial credibility to my course effectiveness and industry-related research questions.

How would you rate your knowledge of Excel?

The first proficiency-based survey question asked to the former SMIF alumni was about

Excel knowledge. Excel plays a very large part in the every day process of the financial industry.

From financial modeling to data entry, those than enter a job in finance will be required to use

this power tool every day in their careers. To best determine if the Student Managed Investment

Fund prepares graduates for a financial career path, improvement in Excel would be the first and

most important metric to consider. I asked each former student how they would rate their

proficiency in excel before and after taking SMIF on a scale of one to ten.

Excel (After)		Excel (Before)	
Mean	7.76	Mean	6.09
Standard Error	0.20	Standard Error	0.31
Median	8.00	Median	6.00
Mode	8.00	Mode	6.00
Standard Deviation	1.15	Standard Deviation	1.81
Sample Variance	1.31	Sample Variance	3.27
Kurtosis	3.24	Kurtosis	(0.01)
Skewness	(1.21)	Skewness	0.06
Range	6.00	Range	8.00
Minimum	4.00	Minimum	2.00
Maximum	10.00	Maximum	10.00
Sum	256.00	Sum	201.00
Count	33.00	Count	33.00

t-Test: Two-Sample Assuming Equal Variances

|	Excel (After)	Excel (Before)
Mean	7.76	6.09
Variance	1.31	3.27
Observations	33.00	33.00
Pooled Variance	2.29	
Hypothesized Mean I	-	
df	64.00	
t Stat	4.47	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.67	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.00	

(Above are results from a Difference of Means Data Analysis Test)

As the data shows above, thirty-three students had an average proficiency in Excel of 6.09 before taking the Student Managed Investment Fund. After taking the course, that average raised to 7.76 out of 10. The SMIF course was able to raise the average proficiency in Excel by over 27 percent. To make sure the data was significant, I conducted a two-sample t-test with the assumption of equal variances. The stress level of "Excel After" (M=7.76) was hypothesized to be greater than the stress level of "Excel Before" (M=6.09). This difference was suggested to be significant because, t(64) = 4.47, p = 0.0 (1 tail). To further explain, with a t stat score of 4.47, and a t critical value at a lower value of 1.67, the data is significant under the difference in means analysis. With students having to present over metrics such as stock price over time, profitability ratios, and valuation models, SMIF puts a heavy emphasis on familiarity with Excel. Since originality is required for stock presentations, students must learn to make all data graphs themselves. This sink or swim approach engages students into learning how to quickly create professional charts and graphs. With students building price charts and discounted cash flow models – a method used to predict stock price – their Excel knowledge ramps up significantly. One former student stated in their survey response, "building valuations and charts for each presentation helped me get in the rhythm of quickly putting data into a visual view." As a financial analyst or wealth manager, being able to visualize data efficiently is an imperative career skill. The research conducted suggests that majority of SMIF students saw a dramatic improvement in Excel proficiency after taking the class.

How would you rate your presentation skills?

The next proficiency that was surveyed was public speaking and presentation skills. In all areas of business, having excellent presentation skills are a crucial skill. Whether it is presenting

company earnings, discussing new investment opportunities, or simply discussing ideas to a coworker or boss, having the ability to communicate effectively is important in the workplace. For many students, they enter into the Student Managed Investment Fund having only done short presentations for other classes in their education. Students then realize, they must quickly improve their public speaking ability if they are going to make it through an hour presentation and practice beforehand. For other students, they may struggle to reach presenting for an hour, but the act of doing so improves their ability over the course of the semester. In order for the SMIF program to be considered an effective career preparation, I determined it must improve students' business communication skills alongside technical skills such as Excel. Together, improvement in both categories would setup an individual for greater success in their career journey. Much like the Excel question, I asked students to rate their presentation abilities before and after taking SMIF on a scale of one to ten. Below are the quantitative results from my gatherings.
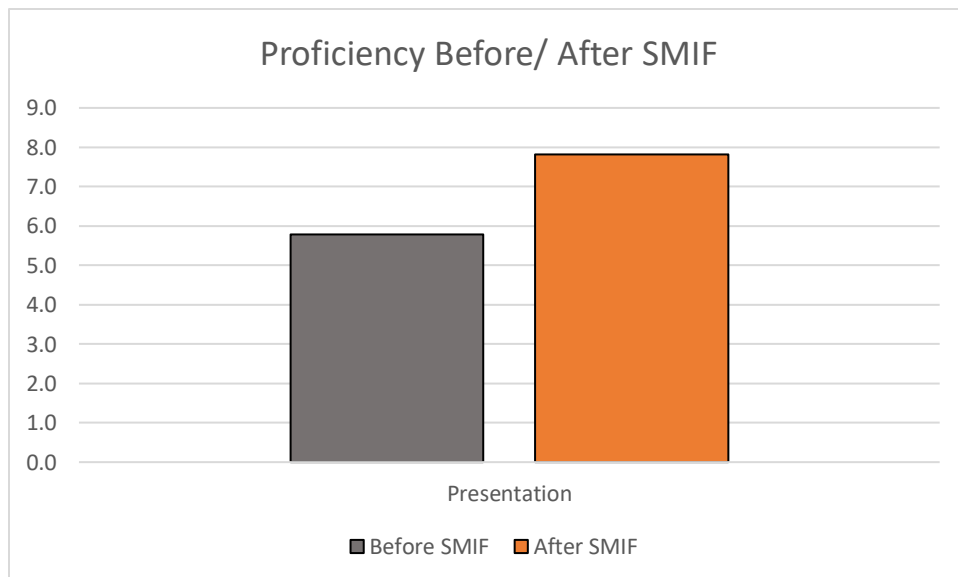
(Above are results from surveyed Average Presentation Proficiency)

Presentation (After)		Presentation (Before)	
	▼		▼
Mean	7.82	Mean	5.79
Standard Error	0.19	Standard Error	0.23
Median	8.00	Median	6.00
Mode	8.00	Mode	6.00
Standard Deviation	1.07	Standard Deviation	1.32
Sample Variance	1.15	Sample Variance	1.73
Kurtosis	0.55	Kurtosis	(0.02)
Skewness	(0.10)	Skewness	0.07
Range	5.00	Range	6.00
Minimum	5.00	Minimum	3.00
Maximum	10.00	Maximum	9.00
Sum	258.00	Sum	191.00
Count	33.00	Count	33.00

t-Test: Two-Sample Assuming Equal Variances

	Presentation (After)	Presentation (Before)
Mean	7.82	5.79
Variance	1.15	1.73
Observations	33.00	33.00
Pooled Variance	1.44	
Hypothesized Mean I	-	
df	64.00	
t Stat	6.86	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.67	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.00	

(Above are results from a Difference of Means Data Analysis Test)

When comparing presentation skills for students before being enrolled to SMIF to after on a scale of 1-10, the average proficiency increased by 35 percent. When looking at the difference of means analysis of the data, I found that the difference was suggested to be significant because of the calculated t stat (6.86) being higher that the calculated t critical value (1.67). With the course putting such a heavy emphasis on extended duration presentations, students' presentation abilities dramatically improved over the course of the semester as hypothesized. In the portion of the survey that asked students to discuss a specific skill they learned during SMIF, many brought up learning to give adequate presentations. One former student mentioned their biggest takeaway was, "having the confidence to pitch an idea that

you've done your due diligence on and standing your ground when you think there's a good opportunity." Preparing for such in-depth presentations improved many students' confidence in their work and made them feel like they could answer any question about their company. When asked about specific duties in their current role that SMIF strengthened, one student stated, "[SMIF] gave me the ability to communicate with coworkers and present to clients that have been in their field for 20-30 years." Due to SMIF alumni personal testimonies and data suggesting overall improvement in presentation proficiencies, it is supported that SMIF prepares students for workplace dialogue.

How would you rate your knowledge of valuations?

The final proficiency question I surveyed was over valuations. Creating a valuation of a company and their future cash flows was a crucial learning piece of the SMIF course. Many colleges educate the basic foundations of company valuations, but getting hands-on experience of digging through a company's annual reports and creating the muscle memory of what goes in to valuations itself is a great understanding to have. Many first-year analysts in the investment banking industry are taught valuations on the job for the very first time. Getting a semester worth of experience in valuations sets up OSU students for tremendous success, and the data suggests that. Below is a snapshot of the calculated data from students before and after answers regarding valuations.

Valuations (After)		Valuations (Before	
Mean	7.42	Mean	3.64
Standard Error	0.19	Standard Error	0.34
Median	8.00	Median	3.00
Mode	8.00	Mode	2.00
Standard Deviation	1.12	Standard Deviation	1.95
Sample Variance	1.25	Sample Variance	3.80
Kurtosis	0.17	Kurtosis	(0.60)
Skewness	(0.65)	Skewness	0.63
Range	4.00	Range	7.00
Minimum	5.00	Minimum	1.00
Maximum	9.00	Maximum	8.00
Sum	245.00	Sum	120.00
Count	33.00	Count	33.00

t-Test: Two-Sample Assuming Equal Variances

	Valuations (After)	Valuations (Before
Mean	7.42	3.64
Variance	1.25	3.80
Observations	33.00	33.00
Pooled Variance	2.53	
Hypothesized Mean I	-	
df	64.00	
t Stat	9.68	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.67	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.00	

(Above are results from a Difference of Means Data Analysis Test)

Coming in to the SMIF program, many students have not ever conducted a company valuation, let alone known much information about them. That is very evident in the date with the average proficiency in valuations prior to SMIF being 3.64. The impressive thing, however, is the major jump in efficiency to an average of 7.42 – a larger margin than any other improved skill mentioned. This is a very important piece of information to the case that SMIF prepares finance graduates exceptionally well. There are other classes that can teach Excel, and there are always other college courses that will require student presentations. However, SMIF well-rounds its students by improving their technical finance skills as well. Along with the data for Excel and presenting, the collected data here is suggested to be significant by the difference of means

analysis. With an above t Critical one-tail t Stat value of 9.68, the jump in average proficiency is supported. When asked of a specific skill developed during SMIF, many survey respondents pointed towards valuation abilities. When referring to his/her own experience, one student explained the biggest thing they learned was, "various valuation models that built the framework for how we select securities in my career." Without taking SMIF, that student would have not have had as large of a grasp of valuations before starting their job. Instead, SMIF gave that student the background needed to understand their job responsibilities, and may have even opened the door to their specific career destination in the first place.

Contributing to Educational Experience & Job Interviews

In the question asked to alumni "At what level did SMIF contribute to your educational experience?", the average rating was a 9.1 out of 10. Many former students shared testimonies that the program was the perfect capstone to their financial education, and solidified many of the concepts they had learned during their undergraduate or master's education. In terms of interviewing with future employers, 94 percent of students surveyed said they have brought up SMIF to recruiters. This goes to show that not only have finance students learned substantially from this course, but they are also eager to reference it to employers. One student mentioned in their survey that their interviewer was impressed with the amount of analyst-like experience they already had while still in college, and that their experience in SMIF helped to land their current job. Other students shared why they decided to take the course twice. Some because they enjoyed the structure of the course and wanted to learn more, and other to further sharpen their valuation skills before graduation. This goes to show the level of impact SMIF has had in a short amount of time for recent business graduates.

Conclusion

Although the Student Managed Investment Fund has only been taught at Oklahoma State University for a short four years, it has made a lifetime of impact on many student's careers. This engaging program pushes its students to learn at a rapid pace, while simultaneously building a strong foundation in financial analysis. Any Oklahoma State University student that has an interest in a finance or accounting career after college should greatly consider enrolling in the SMIF program. When surveyed, 97 percent of former SMIF students said they would recommend the SMIF program to all graduating finance students. Given the personal testimonies mentioned, and the quantitative data to support student's improvement while enrolled in SMIF; it is evident that the Student Managed Investment Fund at Oklahoma State University is a highly effective career readiness program for future finance professionals.

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