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EDITOR'S LETTER

Welcome to the second issue of the **Journal of Student Managed Investment Funds®**. We have collected some great articles for you.

We hope you enjoy this issue and want to invite professors and students to contribute articles on the various aspects of investing, portfolio management, trading, and administration in student-managed portfolios. As part of the journal launch, the normal $350 submission fee will be waived until further notice.

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Brian Bruce
Editor
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STUDENT MANAGED INVESTMENT FUND CONSORTIUM

The journal is the official publication of the Student Managed Investment Fund Consortium. The consortium focuses on student-managed investment fund leadership and research. SMIFC currently has over 150 member universities. The consortium holds an annual SMIFC conference every Fall and a SMIFC-South conference in the Spring. The Consortium is led by the journal's Executive Editor, Tarek Zaher, a professor at Indiana State University.

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The journal is sponsored by the Center for Investment Research. The Center was founded in 1993 by a prominent group of academics, including Nobel Laureates Harry Markowitz and Larry Klein. The Center has funded research projects at academic institutions since its inception. As part of its program to support student-managed investment funds, the Center currently sponsors the only textbook for student-managed funds: Student-Managed Investment Funds: Organization, Policy, and Portfolio Management, 2nd Edition. Information on the book can be found at www.investmentresearch.org/initiatives/student-managed-investment-fund-textbook/. The Center also sponsors a student-managed fund ranking. This ranking is based on a survey of over four hundred student-managed investment funds. The Top 25 Rankings can be found at www.investmentresearch.org/studentmanaged-investment-funds-rankings/.

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Incorporating Angel Investing into a Student-Managed Investment Fund Program: A Case Study from Alaska

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ABSTRACT

This case study examines how and why the University of Alaska Fairbanks (UAF) Student Investment Fund (SIF) partnered with a local Angel Investment Program to offer students exposure to early-stage venture capital investing. We compare the due diligence, risk, and investment management processes between our publicly traded equities portfolio and angel investments to illustrate how this additional asset class can enhance student learning. Further, we offer considerations and guidance for other schools considering early-stage venture capital or investments structured through external partnerships as part of their portfolio.

Student-managed investment programs offer value to students by providing hands-on experience in high-demand skills such as selecting investments and assessing portfolio risk. Yet most student-managed funds invest exclusively in publicly traded equities and use a fundamentals-driven process for security selection. This stands in sharp contrast to professional practices in investment management, where algorithmic approaches have gained popularity. At the same time, alternative asset classes like private equity are growing in popularity and

becoming increasingly accessible to investors. To introduce new skills and adapt our existing investment program to align with financial services trends and regional employer needs, the University of Alaska Fairbanks (UAF) Student Investment Fund (SIF) launched a pilot angel investment program with an external partner. This article outlines our decision-making process in evaluating and undertaking this opportunity. We also compare the investment structure, screening, due diligence, risk, and investment management processes between our publicly-traded equities portfolio and angel investments to illustrate how this additional asset class and external partnerships can enhance student learning.

We used a case study design to examine the UAF Student Investment Fund's (SIF) decision-making in its real-world context (Yin 2009; Creswell 2018). Data collection included personal correspondence and notes from the three authors, who were instrumental in incorporating angel investment in the student-managed investment program; as well as interviews with student participants and Alaska Angel Conference organizers.

Background: UAF SIF

The University of Alaska Fairbanks (UAF) Student Investment Fund (SIF) was established in 1991 with the dual purpose of managing endowed funds to maximize risk-adjusted returns and providing experiential learning opportunities for students. As of December 2024, the SIF's long-only equities portfolio was valued at approximately $3 million, slightly larger than the $1.68 million average for U.S. Student-Managed Investment Funds documented by the Student Managed Investment Fund Consortium (SMIFC). Organized as an in-person, upper-division undergraduate business course, most SIF participants are accounting or business administration majors. With no dedicated finance degree or extracurricular finance club at UAF, the SIF also informally serves as the primary conduit between the University and the regional banking and finance community.

While the UAF SIF has operated continuously since its founding, in recent years it has faced headwinds in recruiting qualified students to the class. UAF's remote location in interior Alaska, declining enrollment, and shift toward online degree programs has contributed to a shrinking pool of interested and qualified students. Maintaining a minimum class size is important to reasonably monitor the SIF's 45-50 holdings across the 11 Global Industry Classification System (GICS) sectors, as well as to foster discussion and peer-to-peer learning in the classroom.

To maintain adequate enrollment, we have minimized barriers to entry for the SIF and adopted investment and risk management approaches that are appropriate for a small number

of students with modest to no prior training in finance. For example, the course prerequisites are limited to a single introductory accounting course, with an additional co-requisite in introductory financial management. Additionally, the SIF investment process emphasizes a holistic approach to security selection, relying on industry analysis and fundamental research skills covered in the standard business administration curriculum.

Shifting Industry Landscape

Feedback from the Alaskan banking and finance community suggested that while the SIF did a good job of fostering students' communication and critical thinking skills, students' technical capabilities and specific financial knowledge fell short of expectations for entry-level employees. An industry survey conducted by the University of Alaska system found that Alaskan employers find it difficult to find qualified individuals at all levels for finance and investment jobs (Alaska's Finance and Investment Sector, 2021). The survey revealed that both a broad understanding of financial markets and asset classes beyond equities, as well as enhanced information technology and computer science skills, were desired.

The changing needs expressed by regional financial sector employers also reflected national shifts in the talent market in investment management. The growing prominence of passive investing (Saban and Jackson, 2024; Buchheit, 2022) has resulted in the need for fewer "stock pickers." Increasing asset flows into alternative investment classes, such as real estate, private equity, and venture capital, requires workers with specific knowledge of the risks and characteristics of these asset classes (Saban and Jackson, 2024). Finally, a growing emphasis on algorithmic and quantitative investment strategies translates into a greater need for workers with computer science and data analytics training.

A Possibility Emerges: Angel Investing

In Fall 2022, the SIF was approached to become an investor participant in the Alaska Angel Conference (AAC). The AAC is a structured twelve-week long program that brings together new investors and startup companies to learn the fundamentals of angel investing— the practice of individual investors financing small business ventures in exchange for equity. During the AAC program, investor participants contribute $5,000 per share and are guided through the process of evaluating startups and conducting due diligence. At the conclusion of the AAC program, the

approximately $100,000 pooled contributions from investors are used to purchase an equity stake in a single startup selected by investor vote.

The SIF and its advisory board evaluated AAC participation against other possible options to modernize the SIF investment process and align curriculum with in-demand skills (Table 1).

Table 1
Evaluation Criteria

Category	Description	Quantitative Strategy	Fixed Income	Venture Capital/Private Equity	Alaska Angel Conference
Modernizes curriculum	Does this change update the SIF investment process/ experience to align with contemporary investment practices and financial sector talent needs? Does it build new skills for students that will lead to gainful employment?	High	High	High	High
Return potential	How attractive are returns in this asset class based on average historical returns?	High	Medium	High	Low
Student preparation	Are typical SIF students able to handle this change without adding additional prerequisite courses, or requiring significant additional taught material in the SIF class? If curricular changes are required, is the SIF advisor or other business faculty willing and able to oversee these changes?	No	No	Yes	Yes
Operations feasibility	What is the scope of the changes required for the current trade platform and risk management process? Can these changes be accommo-- dated given the limited number of SIF participants?	Medium	Medium	Low	Medium
Investment risk	What are the effects of this change in terms of volatility, liquidity, concentration, and default risk? Are measures of average risk-adjusted returns available?	Medium	Low	High	High
Investment required	Can we accommodate the typical investment size required?	Yes	Yes	No	Yes

We found that AAC was attractive for its small initial investment and modest requirement for student preparation. Given that AAC offered structured educational programming, the need to adapt the existing SIF curriculum was minimal. Participating in the AAC could complement the existing SIF equity analysis process. It would reinforce some skills, introduce new, marketable skills, and allow students to build relationships if they sought in-state employment after finishing their degree.

Another consideration was that the AAC offered an opportunity for collaboration with the Alaskan startup community. This both supported the University's strategic objectives (UAF Strategic Plan Goals 2027, n.d.) and ultimately could enhance the employability of student participants. Notably, Alaskan startups and early-stage businesses–defined as firms under five years old– are responsible for 89% of the private sector job growth in the state (UA Center For Economic Development, 2018). Alaska's angel investors play an important role in this ecosystem, offering a critical connection to capital and local expertise in a largely rural market like Alaska, where few financing alternatives exist (Center on Rural Innovation, 2020). Engaging with AAC, therefore, might address a real skill and labor market need in Alaska.

Participation also bore some potential downsides. First, angel investing requires a different investment philosophy and risk tolerance than overseeing our publicly-traded equities portfolio. Early-stage investors focus on investments with attractive growth potential and are willing to accept a higher likelihood of failure. For example, one survey of early-stage investors reported that 71.8% expect startups to achieve 100% annual growth (Right Side Capital, 2024); yet, as a rule of thumb, angel investors estimate they might make 10 to 20 investments before seeing any returns of significance. Second, as our participation took the form of a partnership with an external organization, we would be dependent on the Alaska Angel Conference and maintain less control over our investment choices. Therefore, an appropriate approach to screening, selecting, and managing investments for the AAC would need to vary from the existing SIF's processes (Table 2).

Getting Our Wings in Angel Investing

In the spring semester of 2023, SIF bylaws were amended to allow us to participate in the Alaska Angel Conference, and three SIF students were carefully selected to participate. All had successfully completed a semester of the SIF previously. After discussion with AAC organizers, we agreed to purchase two shares (for a total investment of $10,000, less than 0.4% of the SIF's

Table 2

Publicly-Traded Equities versus Angel Investing: Investment Process

	Publicly-Traded Equities	**Angel Investing**
Universe and Screening	Publicly traded companies on U.S. major exchanges, minimum market cap of $60MM. A single round of quantitative screening.	Early-stage companies. Screening is iterative; Based on network and referrals; Short pitches from founders/managers of potential target companies.
Due Diligence	Company description and strategy ● What does the company do? ● Who are its customers? ● Why does it stand out from competitors? ● What is new/different/changing for this company? ● Who is its management team and what are their qualifications? Valuation and financials ● Widely available historical data for revenues, expenses, and cash flow ● May use industry-specific non-GAAP measures to aid in future projections ● Relative valuation and discounted cash flow valuation techniques ● Assesses stock performance relative to its sector SPDR / S&P 500 Catalysts and risks ● Are there events that will cause stock price to converge with target price? ● What might happen that prevents your stock from performing as predicted? Information Sources ● Capital IQ database, financial filings, investor relations presentations, equity analyst reports	Company description and strategy ● What are the unique selling points of the product / business model? ● Does the company have intellectual property, and if so, how is it protected? ● How large is the addressable market for this product? ● What is the business model? ● Are the founders and key talent capable of overseeing this business and executing these plans? Valuation and financials ● Available financial information varies based on maturity of the business; company may not have positive cash flow or revenue ● Financial projections may be developed in concert with investors ● Relies on early-stage valuation techniques, including the venture capital method and Berkus method. Include qualitative considerations; considers equity returns and ownership structure for founders, key employees, and investors Catalysts and risks ● What might happen that prevents your stock from performing as predicted? Information Sources ● Interviews, pitches, and other
Structure and governance	Held in a retail account with the University's foundation; governed by by-laws. Fund has a high degree of autonomy.	Investment placed through an LLC, governed by operating and subscription agreements; specific deal terms negotiated for each investment. Low degree of autonomy. Must also consider specific deal terms. Deal terms and exit ● How will you structure your investment? ● How will you eventually realize a return on this investment? Who might potentially purchase your shares?

value at the time). Table 2 is a comparison of our initial experience participating in AAC in 2023 and the SIF's typical characteristics and stock selection process.

Universe and Screening

The universe of companies the UAF SIF considers has no overlap with the universe of companies under consideration for AAC. UAF SIF focuses on publicly traded securities with U.S. listings on major exchanges and a minimum market capitalization of $60 MM. AAC focuses on early-stage companies based in Alaska. Maturity varies: Some are pre-revenue, while others have successfully raised Series A capital and are looking to expand.

UAF SIF relies on a quantitative screening process for security selection, which allows a variety of metrics to serve as screening criteria as long as they are based on publicly available data, align with sector allocation guidance we set for the semester, and support our overall growth-at-a-reasonable-price philosophy. For example, looking to increase our position in the energy sector, a student-analyst specialized in the sector generated a value screen using several operational efficiency and value metrics, including return on assets and price-to-earnings. The student-analyst discussed the results of his screening process with the larger Student Investment Fund group, who debated which of the resulting companies best aligned with our portfolio criteria. From the five companies under consideration, the analyst was advised to consider one company for his stock pitch but had the autonomy to counter this guidance if needed.

By contrast, the Alaska Angel Conference relies on organizers' networks and referrals to identify potential investments and can span a diverse set of industries. In 2023, 18 startup participants were recruited. After two rounds of founder pitches and investor feedback, the initial set of companies was reduced to four by investor vote. SIF student participants engaged in discussions and voting alongside the other fourteen non-student investors. These sessions took place via Zoom, in hours outside of SIF class time. Students participated in the general management of the SIF during class time and reported on their progress as part of the AAC.

Founder pitches were evaluated on a loose rubric including product viability, market size, and growth potential, as well as the founder's ability to express his or her ideas convincingly. Through a deliberative process, investors were able to deviate from these criteria. In 2023, the four finalist companies included an entrepreneur launching a socially-oriented labor market app to connect the formerly incarcerated to employers, an industry-specific compliance platform for oil and gas pipeline operators, a gourmet granola manufacturer, and a service that translates books geared toward second-language acquisition.

Due Diligence

Investor participants were then assigned to due diligence teams to complete in-depth research on each of the four finalist companies, with SIF students on two of the due diligence teams. Compared to the SIF's existing investment process, evaluating these early-stage investments required less reliance on audited financial data and greater emphasis on evaluating business ideas, intellectual property, and leadership teams.

Research was conducted through interviews and primary source material rather than gathering publicly available information from a financial database. AAC investor participants were provided multiple "due diligence checklists" to provide rough guidance as they requested documentation from their target company, using their own judgment to decide whether certain items were relevant. Communication took the form of both emails and meetings. For example, one student reported that during the two-month due diligence period, they met weekly with their due diligence team. Additionally, the due diligence team typically scheduled a meeting every other week with the founder or other top management members of the target company to which they were assigned. This time commitment was in addition to class time for the SIF. These extracurricular meetings were often critical for assessing the soft skills of target company management, and allowed students to expand on skills they were not able to practice in the SIF: "While a professional equity analyst may get to speak with management for a company they cover, this isn't something that we get to do in the Student Investment Fund," explained one student participant. "Here we had direct access to founders."

Financial analysis and valuation for early-stage companies also required some additional flexibility. Student participants reported that they were able to use Excel modeling skills to analyze market potential and create pro forma financial statements, reinforcing their training in the SIF. "Many of the other investors were entrepreneurs and weren't necessarily wanting to build Excel models. It allowed me to really add value," stated one student. For valuation, students relied on a variant of the Berkus method to produce rough valuation ranges for their assigned companies (Babu and Chinmaya, 2023). This startup valuation includes both quantitative and qualitative assessments of return and risk.

In 2023, three of the finalist companies were operating businesses that generated revenue but were not yet sufficiently profitable that their financial statements provided an easy basis to develop future projections. Another criterion that was typically not relevant to our SIF investment process but was important in the AAC was how companies intended to use the funds they raised. For example, one finalist company proposed expanding its manufacturing facility to achieve

greater scale.

At the end of the AAC process, investor teams presented their due diligence reports, and founders made final pitches for their companies. Investors deliberated and selected the winning company: Prismatext, a language acquisition app that blends words and phrases from other languages into English texts.

Structure and Governance

At this point, the substantial differences in governance and structure between our SIF and our new angel investment became evident. The Student Investment Fund's funds are housed at the University system's Foundation and are traded on a retail trading platform. We are governed by a set of bylaws that dictate our general investment policy and require us to maintain an advisory board but are not legally binding. Selecting an investment does not require expertise in deal structuring, and we can execute investment decisions quickly.

By contrast, investment in the AAC took the form of membership in a dedicated limited liability company. An operating agreement and subscription agreement spelled out the terms of our participation, including our rights as investors and important information regarding fees, future capital distributions, and required updates from management. We conducted an internal legal review with the University counsel and developed an agreed-upon process within the University to ensure all interested parties receive regular updates. However, these agreements did not determine the actual structure and terms of financing with the AAC winner. Several financial instruments were under consideration, including equity, convertible notes, and KISS (Keep It Simple Securities).

This is another point where participating in a conference may differ significantly from angel investing outside the confines of a conference. While the "conference" culminated with the selection of Prismatext as a winner, this was not the end of the process. The form and terms of financing were finalized after a winner was selected.

Investment Management

The SIF's established process for monitoring investments includes assigning students to track news items and maintain up-to-date valuations for holdings in a single sector for the duration of the class. Our initial participation in AAC resulted in a single investment that was relatively illiquid, calling for a different approach to oversight.

After an investment is placed, it is common for an angel investor to maintain active and

sometimes informal communication with the target company. However, the turnover of students, the relatively small dollar amount invested, and the SIF's role as a single investor among multiple AAC participants meant in reality we have had little contact with the target company. Instead, we have settled on reassessing the value of our investment based on required biannual updates. We expect this process to evolve as our portfolio grows.

Making Year Two

After the first year's pilot, AAC organizers reported that the SIF angel investors provided a meaningful contribution to startup assessment and due diligence. Students provided feedback that the analytical and technical skills, including excel modeling, they had gained in SIF translated well to the AAC environment. Beyond the skills learned in the SIF, student participants reported gaining a deeper understanding of the human dimensions involved in angel investing. In particular, students considered how understanding the founders' vision and building rapport are critical elements beyond quantitative analysis.

From an advisor's perspective, the participation was beneficial for students. However, it required significant meeting time outside of class and did not always neatly integrate into the course's existing portfolio management processes or calendar. During the first year's pilot, we had yet to place an actual investment, and therefore did not have any investments to manage, so students focused exclusively on evaluating investments.

In the second year of the pilot, we structured participation in the AAC as a distinct graduate-level special topics course with a dedicated instructor and we had four student participants, including both graduate and undergraduate students. This transition provided students with additional support and material on venture finance. It allowed students with a more diverse skill set to participate, since a first semester of SIF was no longer required for participation. In effect, while funds were still coming from the Student Investment Fund, the course itself was distinct as we began building an angel fund. In the second iteration, we also encountered some challenges that illustrate another difference between publicly traded equities, where we are largely price takers operating in a public market, versus early-stage investment, where the terms of each transaction must be negotiated. Although the AAC process successfully selected an investment recipient, challenges related to both collecting on AAC investor participant committed funds and ongoing negotiation of deal terms meant no investment had been made six months after the close of the AAC process.

The quality of student participation and the student experience were largely consistent across both years, suggesting that either organizational model–keeping angel investment as part of a diversified SIF portfolio, or treating it as a separate course and separate fund–could be viable. By embedding angel investing activities in the Student Investment Fund, we can leverage the SIF's existing process to monitor our angel investment's performance and build on the capabilities SIF students already possess, and address some of the concerns around modernizing our investment processes. By operating separately, we can recruit more diverse talent to participate and tailor the experience to students with an interest in angel investing and entrepreneurship specifically.

Discussion

For two years, UAF's Student Investment Fund has piloted a partnership with a local angel investing program with the aim of deepening integration with local industry and enhancing student skills. We have run this partnership as part of the SIF course and as a distinct class dedicated to new venture financing and found that both organizational models offer engaging experiential learning opportunities for students. Schools with the resources to establish a separate course may prefer the focus a separate course offers. However, for a smaller school with limited resources, we believe the skill set is sufficiently complementary that angel investing can be incorporated effectively into a SMIF primarily focused on publicly traded investments.

The novel model we offer–a student-managed investment fund partnering with an external organization, such as the Alaska Angel Conference–may offer new insights for structuring experiential learning opportunities. We benchmarked academic venture capital and angel investment funds to understand how they manage similar investments but did not come across another example of a university partnering with an external angel investing network in the form of student-managed investment.

While this is a pasture for further research, we believe partnering with an external organization reinforces many of the same skills and knowledge areas as managing an in-house venture capital fund without requiring the manpower or financial resources needed for an in-house fund. By partnering with AAC, we were able to piggyback on an established angel investing network and training program, as well as existing legal expertise in structuring and protecting an angel investment. We placed angel investments without making significant capital outlays, enacting major curriculum changes, or recruiting a large additional class to manage a new fund.

There are, of course, downsides to investing via an external partnership, such as less

direct control over investments and limited ability to manage concentration or exposure at the portfolio level. Each year, the Alaska Angel Conference selects a single investment. We run the risk, after multiple years of participation, of ending with a portfolio concentrated in a small number of industries. However, we are not entirely without agency. As a repeat participant, and one of fewer than twenty investors from 2023, we can voice these concerns during the investment selection process.

For universities with law schools considering pursuing such a partnership, we would suggest enlisting law students as participants. Compared to investing in publicly traded companies, the terms of each angel investment are unique, and legal expertise would be highly complementary.

Our expectations of near-term investment returns are limited. The way we define success, therefore, may need to adapt as well. Our partnership with the Alaska Angel Conference has generated meaningful economic impact by allowing us to invest in a regional startup, which has continued to grow its customer base and generate economic activity in the state since our AAC investment was placed, but has not yet generated a positive return.

As this partnership matures, we hope to better understand the impact for both partners. For example, the allure of early-stage venture investing has helped to distinguish our fund and attract additional student participants. Both student inquiries about the AAC program and enrollment in the SIF have increased over the subsequent two years. Although anecdotal, this increase in course enrollment, bucking the overall university trend, has helped to ease the talent constraint faced by the SIF. Our participation has also increased predictability for AAC organizers, who must attract investors each year.

While our experience is limited in generalizability, initial results, in terms of student employment and learning outcomes, are promising. Across both years, student participants cited the opportunity to network with motivated investors across Alaska as the largest benefit to AAC investing. Participants reported feeling better prepared for future careers in finance and investment and described the experience as “meaningful and impactful.” Multiple student participants have secured internships or full-time positions with participating startups or have earned competitive fellowships with UAF’s Center for Innovation, Commercialization, and Entrepreneurship, continuing work within the entrepreneurship and angel investing ecosystem.

Our ongoing pilot with AAC may serve as a possible model for other schools, especially smaller schools with strong ties to their local or regional economy but a weaker hiring pipeline for traditional investment management roles. By offering our experience in establishing a

partnership and a framework for considering how early-stage venture investing aligns with the processes and structures of our student-managed investment fund, we hope to seed additional interest in novel asset classes and structures.

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Create and Grow a Student Managed Investment Fund in a Liberal Arts College

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ABSTRACT

A SMIF is set up and has grown successfully. This study provides a road map for creating a SMIF as an experiential learning opportunity for students. The approach described herein may be reproduced at other institutions. How a SMIF course can be taught is demonstrated. Value Line and Excel spreadsheets are used extensively. Basic SAS programming is introduced. The approach to teaching the SMIF course presented in this article suggests that instructors can distribute course materials entirely digitally.

Introduction

The education literature supports the premise that student managed investment funds (SMIF) contribute positively to students' learning experiences, and there are many publications related to incorporating a SMIF as a learning component in finance pedagogy. Specific examples of such research include Belt (1975); Hirt (1977); Bear and Boyd (1984); Markese (1984); Tatar (1987); Block and French (1991); Bhattacharya and McClung (1994); Lawrence (1994); Johnson et al. (1996); Kahl (1997); Hocking et al. (2000); Neely and Cooley (2004); Lawrence (2008); Peng et al. (2009); Gradisher et al. (2016); and Carlston et al. (2018). However, very few research papers have discussed how a SMIF can be created and grown, let alone how a SMIF can be set up and taught in a liberal arts college. The aims of this paper are twofold: (1) The author discusses the pathway to the creation of a SMIF from scratch in a liberal arts college. (2) The author presents the performance of the SMIF since its inception and how various online technologies and Excel spreadsheets are applied to teaching the courses combined with the SMIF.

SMIF: A Form of Experiential Learning in the Finance Curriculum

What is a student managed investment fund (SMIF)? One definition is provided by Lawrence (1994, 47) as a fund "where university students have full discretion over the management of a real dollar portfolio." Grinder et al. (1999) and Timura (2024) provide an excellent overview of the theoretical foundations of offering a SMIF as a form of experiential learning in a classroom setting. There is an adage, "Experience is the best teacher." Experience is what a SMIF aims to provide by allowing students to manage real money in the real world before they enter the job market as financial professionals. Although the first SMIF was created at Gannon University in 1952 by Lawrence (1994), Peng et al. (2009) reported that more than half of the SMIFs did not exist until the second half of the 1990s. The persistent bull stock market in the U.S. since that time may have contributed to the rapid growth of the SMIFs nationwide.

The Process of Setting Up the SMIF

The Academic Structure of the SMIF

The liberal arts college mentioned in this paper is Pacific University Oregon, a small, private, four-year university founded more than one hundred years ago and located in the Pacific Northwest region of the U.S. The University has been offering business programs for more than 70 years. The SMIF is structured to be managed as part of the finance curriculum. In the fall semester, the SMIF is combined with FIN 320, Investments. In the following spring semester, it is combined with FIN 420, Principles of Portfolio Management. FIN 320 is an existing course, and FIN 420 has been developed by the author concurrently with the setup of the SMIF. FIN 320 is a required course for students in the finance concentration and is a prerequisite for FIN 420. FIN 420 is added to the finance curriculum as an elective course.

Shortly after the author joined the faculty of Pacific University Oregon in the 2018 Fall semester, he was requested by the administration to consider launching a SMIF, which was named the Boxer Opportunity Fund. After a couple of donors provided the initial seed money as direct gifts[1] of $25,000 to create the Fund[2], it became operational in October 2019. We did not choose to establish an investment club primarily

[1] See Gradisher et al. (2016) for an excellent discussion about the fiduciary and legal aspects of SMIFs.
[2] Peng et al. (2009) report that the smallest SMIF was about $25,000 in size; it is purely coincidental that the initial seed money of the Boxer Fund was $25,000 as well.

due to two reasons. (1) There has been a personal finance course in place, and it is offered to each student at the University. Per Grinder et al. (1999), a course in personal finance is a recommended alternative to establishing an investment club. (2) It is reported in Grinder et al. (1999, 212) that "Most investment clubs collect dues on a monthly or quarterly basis. These funds are then used to purchase securities for the club's portfolio."[3]

The faculty advisor of the Boxer Fund is the instructor of a regularly scheduled finance course. The Fund is set up to provide academic credit for students within a regular class. Although Investments was an existing course, it needed substantial revision to include the management of the Boxer Fund. Between the 2018 Fall semester and the 2019 Spring semester, it took the author approximately six months to do the following tasks simultaneously: (1) revising the extant Investment course to have it combined with the management of the Boxer Fund; (2) creating the new course, Principles of Portfolio Management; and (3) formulating the investment policy statement of the Fund. Due in part to the small size of the finance program at Pacific University Oregon, there is no vetting process for selecting a student to be a manager of the Boxer Fund. That is, each student is a student-manager of the Fund during the semester when the student is enrolled in either FIN 320 or FIN 420.

The Investment Policy of the Boxer Opportunity Fund

Bodie et al. (2024, 969)[4] state that the investment policy statement (IPS) of a fund is particularly important because it "serves as a strategic guide to the planning and implementation of an investment program." A sound IPS shall include the fund objectives as well as its target asset allocation policy. In addition, Bodie et al. (2024, 973) indicate that "by far the most important part of policy determination is asset allocation." It took the author approximately five months to complete the IPS for the Boxer Fund and obtain the approval of the administration. The key elements of the IPS are as follows.

Fund Objective. The main objective of the Fund is to deliver high quality practical education in securities analysis and portfolio management for business students at Pacific University Oregon. It is the Fund's responsibility to maximize the return on a portfolio subject to given constraints. The Fund's

[3] It is stated in the Investment Policy Statement of the Boxer Opportunity Fund that "The source of funding to date has been from individual donors to provide funds as a gift with the sole purpose of allowing business students of Pacific University to make security selections and portfolio management decisions. In the future we may also look for institutional and corporate gifts to supplement individual donations."
[4] For SMIF faculty advisors considering the quantamental approach to investing, see Ma (2020) and Ma (2025).

investment goal is to maximize the long-term rate of return consistent with prudent risk limits.

Nature of the Fund. During the semester, a student will perform the functions of a security analyst as a student-manager of the Fund with the responsibility of selecting securities and managing a portfolio. As a manager of the Fund, each student will function as part of a team whose accountability is to only select the best securities.

Approach to Managing the Fund (1) Students read periodicals to prepare for class discussions on the economy and financial markets, and recent developments pertaining thereto, to be fully ready for class participation (attendance is required). Any deficiencies identified should be eliminated. The Fund will determine any action to be taken. All students are expected to participate in each presentation review. Students assigned as economists are responsible for economic updates. (2) Each student will have responsibility for the securities selected and their industry/sector. The security/industry/sector selected will be monitored, and changes will be reported to the Fund. Justification for inclusion of any security should be given careful consideration. (3) Stocks held in the portfolio will be followed by students. "Short" reports will be made on all stocks held. Short reports will be made early in the semester, with all students participating in this process. Any unusual market activity impacting the stocks followed must be reported to the class for a decision. Action points will be set, at which time a review of the stock will be made. A sharp drop, greater than the market move, or an unusual increase, greater than the market move, will cause a review to be made so the class has an opportunity to sell, hold or buy more. In FIN 420, each student, as a team member, will complete a "long" report to analyze at least one new stock not included in the portfolio and make a class presentation on the stock. The purpose of the presentation is to provide the class with sufficient information on which to base a decision. Each stock presented in the long report should have the potential to be purchased for a long-term holding. Additionally, each stock presentation should include high and low trigger points for reviews and be sufficiently in depth to provide all necessary and desirable data.

Database Requirements[5]. (1) Unlimited access to the online Value Line Research Center, which is available through the University library. (2) The Wall Street Journal, available through the library as well. The financial market conditions and the structure of the U. S. financial system are constantly changing. The Journal is, therefore, an important part of the class, as it describes and discusses many of these changes.

[5] It is reported in Peng et al. (2009) that Value Line and the Wall Street Journal are the two most widely used information sources by SMIFs.

Student-managers of the Fund need to have daily access to the Journal, so they can keep current regarding the changing and evolving financial landscape.

Asset Allocation. The Fund is entirely equity-based and allowed to invest in any U.S. exchange-traded securities of established firms. The Fund will be managed in a manner generally consistent with the socially responsible parameters. Stocks to be included in the Boxer Fund will need to have an ESG rating of Medium ESG Risk or lower, determined by the Morningstar Sustainalytics' Company ESG Risk Ratings[6].

Responsibility for Decisions on the Fund. Student-managers are responsible for all management decisions, but the faculty advisor or university officials have veto powers over the decisions.

The Performance of the Fund. It is reviewed twice per year at the end of the fall semester and spring semester, respectively, and compared with the performance of the S&P 500 (the benchmark portfolio). Each semi-annual review is submitted to the University's Office of Development.

The Distribution Requirement of the Fund. Given the small amount of the seed capital, any returns of the Fund, e.g., dividends or capital gains, shall be reinvested into the Fund until the market value of the portfolio exceeds $250,000.

Faculty Advisor's Liabilities. The Fund is an experiential learning environment for educating students in a for-credit finance course. The nature of this experiential learning exempts the faculty advisor from responsibility for losses or gains of fund performance.

The Fiscal Constraints of the Boxer Opportunity Fund

The Boxer Fund has had several fiscal constraints. Firstly, the relatively small seed capital would not permit the SMIF to achieve economies of scale in trading and diversification. Secondly, although many SMIFs at larger universities may be riding the crest of the technology wave, e.g., using online connections to Bloomberg Financial Services, due to the funding constraints, the Boxer Fund does not subscribe to any financial database except Value Line's online access. Thirdly, SMIFs of many schools use either donor or university funds to build or renovate space into professional trading rooms. The trading room of a SMIF typically contains sophisticated hardware and software, large computer screens, and electronic monitoring devices such as stock tickers or data walls. Due again to the funding constraint, the Boxer Fund does not have a trading room.

[6] The website address of the link is https://www.sustainalytics.com/esg-ratings.

How the Two SMIF Classes Are Taught

The Management of the SMIF in Two Courses: Similarities and Differences

Due to the small size of the finance program at Pacific University Oregon, it is not fiscally feasible to develop a separate SMIF class. Table 1 contains various SMIF components in each of these two courses.

Table 1: SMIF Components in Each Course

SMIF components in the course	Proportional weight to the final grade in FIN 320	Proportional weight to the final grade in FIN 420
Weekly update of the stocks	4%	3%
Monthly presentations of the stocks	3%	3%
The written assignment of the short report	8%	6%
The oral presentation of the short report	8%	6%
The written assignment of the long report	N/A	8%
The oral presentation of the long report	N/A	8%
Boxer Fund summary report	6%	5%
Total weights of the SMIF components to the final grade	**29%**	**39%**

The Similarities of Managing the SMIF in These Two Courses. The class will be divided into teams of about four students each. Every student will be assigned to a team.[7] Stocks held in the portfolio will be followed by team members. Students' work as analysts (industry and security) will be done to include monitoring the firms in the selected industry/sector and making buy/sell

[7] Using the following Excel functions, i.e., Rand(), Rank.Eq(number, ref, [order]), and Ceiling.Math(number, [significance], [mode]), along with other built-in features of Excel, each student is randomly assigned to a team.

recommendations, according to the guidelines listed in the Investment Policy Statement. Each team will be responsible for completing a "short" report for each stock assigned. "Short" report format will be specified as follows: 1) Title page; 2) Profile of the company; 3) The firm's required rate of return[8]; 4) Valuation[9]; and 5) Conclusions. Short reports will be made early in the semester with all students participating. Each team is responsible for planning its own meeting times and dividing the work. Any individual member of the same team may receive the same grade on each group assignment; however, the instructor may make changes to this grading policy if warranted.

Providing a weekly update of the stocks included in the Fund is, in some ways, a treasure hunt. The report involves reasoning, creativity, and persistence. Students will need to analyze the industry in which the company operates to get some idea of issues that may be affecting the company. The following steps are provided to students for their consideration in completing a weekly update report.

1. Provide the following information about the stock: (a) The two-digit Global Industry Classification Standard (GICS) sector code and the name of the sector; (b) The eight-digit GICS sub-industry code and the name of the sub-industry.

2. What are your assessments of the outlook of the GICS sector and the GICS sub-industry of which the company is a part?

3. Provide a summary of the information contained in the section of Market Daily Updates of Value Line on the day when your report is to be completed.

4. Include the following pieces of information in your weekly update.
   A. Current Stock Price (at the time when the report is to be completed)
   B. 52 Week High
   C. 52 Week Low
   D. Purchase Price(s)
   E. P/E Ratio
   F. Beta
   G. Dividend Yield

[8] It is estimated by the CAPM, and the beta value is obtained by Value Line.
[9] Each team computes the intrinsic value of every stock that the team monitors.

H. The Most Recent Ex-Dividend Date
I. The Upcoming Ex-Dividend Date (if available)
J. Relative P/E (relative to S&P 500 or another index)
K. The Most Recent Market-value/Book-value Ratio
L. Value Line Rankings
* Report Value Line's Safety and Timeliness Rankings of the Stock.
* Report Value Line's Financial Strength Grade Rating.
* As Part of Value Line Data, Show the Stock's Score Ratings: 1) Price Stability, 2) Price Growth Persistence, and 3) Earnings Predictability.
M. Market Cap - (# of shares × per share price)
N. High Target Price
O. Low Target Price
P. PEG Ratio (The P/E over the projected EPS growth rate)
Q. Value Line's Projected Total Return Range

5. Search for any other pertinent pieces of information of the stock by reading Value Line, news contents contained in other information sources such as journal and/or newspaper articles, e.g., Wall Street Journal articles. Also, you may look for articles on the industry of which the company is a part.

6. Please comment on how the company performs regarding socially responsible parameters, e.g., Environmental, Human Rights, Corporate Governance and Ethics, and Community Involvement. Report the company's ESG rating score, per the guidance contained in the Investment Policy Statement.

Each team's weekly update report is graded in Moodle, the University's course management system, within a couple of days of submission. Students also receive feedback on each weekly update in Moodle. Based upon the information garnered in each weekly update, there will be a total of three monthly stock presentations in the semester. All pertinent files for a monthly presentation, e.g., a PowerPoint (PPT) file and/or any other files such as Excel files, need to be submitted through Moodle by 11:45 pm the previous day. Each team will be responsible for presenting the stocks that the team follows.

In addition to weekly update reports, at the end of the semester, each team will complete

the semi-annual Boxer Fund Report. This report is about producing a PowerPoint file that summarizes how the Boxer Opportunity Fund has been managed. This PPT file will not need to be presented.

The Differences in Managing the SMIF Between These Two Courses. In the second SMIF course, the newly established course of FIN 420, Portfolio Management, each student-team will analyze a new stock as a sell-side analyst, with the recommendation for a buy decision. Justification for inclusion of any security should be given careful consideration. Each team's stock pick must be approved prior to working on the long report. In completing the long report as a team, students will analyze the new stock not currently included in the Boxer Fund and make a presentation on the stock. The purpose of the presentation is to provide the class with sufficient information on which to base a decision. The stock presentation should have the potential to be purchased for a long-term holding. Each team needs to select the stock of a company that is covered by the Value Line Investment Survey, Standard Edition. The stock's Value Line rating must be considered. The stock presentation should include high and low trigger points for reviews and be sufficiently in depth to provide all necessary and desirable data. The selected stock must have an available pricing history of at least five years. The stock needs to pay dividends and have the timeliness rank of Value Line available. Recommendations by the CFRA, Value Line and others should be reported on the stock.[10] Each team will be responsible for the stock selected and its industry/sector. The security/industry/sector selected will be monitored, with changes reported to the class. A report turned in or written for a different class is not acceptable.

Integrating Various Technologies in Teaching These Two SMIF Courses

The rapid growth of the Internet is creating almost limitless opportunities for improving financial education. Thus, finance faculty members are increasingly encouraged to use Internet-based technologies in teaching. Innovative and integrative teaching should be valued. Both courses are delivered through traditional face-to-face (F2F) instruction. All course materials will be online, with multifaceted applications of Internet-based technologies, while no seat time is reduced. In a finance class delivered using this method, all pedagogical advantages of a F2F course are retained, e.g., Peng (2011). Although the professor has spent extra time and effort delivering a course in this way, in addition to incorporating the SMIF components into the teaching of these two courses, students have benefited in maximum from the instructor's willingness and

[10]After each team's stock pick is approved, the author will provide pertinent CFRA reports and post them in Moodle for students' perusals.

ability to constantly adopt pedagogically accepted instructional technologies. Table 2 contains various online technological teaching tools applied.

Table 2: A List of Technological Teaching Tools Applied

Purposes of using the technology	Technologies used
Real-world practices of the course content	Value Line Research Center Online
Course design	Excel, Adobe Acrobat, Moodle, Apple Pencil, iPad, Zoom, Goodnotes, SAS OnDemand for Academics, Online Wall Street Journal, and ExamView Assessment Suite
Instructional delivery	

Let us elaborate on how these tools are used in teaching these two courses.

Value Line. Given the nature of the experiential learning approach of the Fund, it dictates that students be up-to-date and well-informed about current market conditions. Value Line is best known for its *Investment Survey*, one of the most widely read investment services. Value Line unveiled its digital platform, The Value Line Research Center Online, in March 2012. The Value Line's digital platform has been used in class daily.

Excel Spreadsheets. There is consensus among researchers that Excel is an essential and useful tool for financial analysis. It is recognized that a financial analysis is, by its very nature, quantitative, and spreadsheets are used to analyze most problems in the author's classes. Students learn a great deal by working through the Excel models, examining their structure, looking at the formulas and functions, and considering the implications of the models' output. Excel spreadsheets are used extensively to cover each major topic of these two courses. Except for the coverage of Chapter 1 by Bodie et al. (2021), which is an overview of investment management, a partially completed Excel file of each subsequent chapter is posted to Moodle prior to the discussions of the topics. This file is used in class to solve a set of selected end-of-chapter problems that are pertinent to the topics discussed in the chapter. The updated Excel file is posted to Moodle every day after the class session ends. The author also imports data from either the Wall Street Journal (WSJ) or the Value Line to Excel, and this data is analyzed as applications of the concepts that have been discussed in class. For example, the author uses the Treasury Bill and Bond data from the WSJ to

compute a T-bill's bond equivalent yield and a T-bond's invoice price by utilizing various built-in functions of Excel. Another instance is that by importing the historical pricing and dividend data available in the Value Line into an Excel spreadsheet, the author demonstrates in class how to compute the geometric mean of a stock's return.

Moodle. Moodle is the University's learning management system (LMS). It is fully utilized in the author's teaching of both courses. These utilizations include the following aspects: (1) making all course materials available through Moodle; (2) giving each homework assignment, quiz or examination online, i.e., the teaching mode of "face-to-face instructions plus online assessments" is implemented successfully; (3) using the full functions of grades, e.g., each student's score of a homework assignment, a quiz or an examination is posted to Moodle timely and securely (usually within two hours after an assessment is given). In addition, the assessment key is posted in PDF format and the detailed solution of the assessment is posted in Excel format.

Apple Pencil, iPad, Goodnotes, Zoom, and MacBook. Internet-based instructional technologies are constantly being updated and integrated. iPad is a line of tablet computers that are developed and marketed by Apple Inc. Goodnotes is a digital note-taking app that allows a user to handwrite or type notes on virtual paper using an Apple Pencil on iPads. Zoom is a communications platform that allows users to connect with video, audio, phone, and chat. In particular, Zoom on a MacBook allows an instructor to share the screen of an iPad during the seat time with the face-to-face teaching mode[11]. This enables the instructor to write his lecture notes with the Apple Pencil in Goodnotes on the iPad as a whiteboard that students can see in the classroom[12]. The pedagogical benefits of applying these educational technologies can be summarized as follows. (1) Making an additional effort in the digitalization of financial education[13]. As college professors, by opting to distribute course materials digitally, we can drastically reduce our carbon footprint. (2) Facing the students when the instructor is writing his lecture notes. Students have said that it helps them to be more engaged with the topics discussed in class. (3) Making the handwritten lecture notes of each class session available in PDF format in Moodle so that students can review them at any time during the semester. For example, when the introduction to asset pricing models is covered during the seat time,

[11] Each undergraduate course offered at Pacific University Oregon is expected to be taught with the face-to-face instructional mode.
[12] During the seat time, the instructor's iPad and MacBook are both connected wirelessly to the same Wi-Fi network of the university, and the MacBook is connected to the podium system via an HDMI cable.
[13] Since the 2004 Spring semester, the author has not distributed any paper handouts, e.g., a paper copy of a syllabus or a paper copy of a homework assignment, in any course that he has been teaching.

the derivation of Equation (7.13) in Bodie et al. (2021, 205) is provided in class. The handwritten derivation is contained in Appendix 1.

SAS onDemand for Academics (ODA).[14]. SAS is a leader in data analytics, data management, data integration, customer analytics, and risk management. *Since 1976, SAS has provided analytics, business intelligence, and data management software and services to help customers across the globe make sense of massive amounts of data*. Knowledge of SAS sets up undergraduate finance students for tremendous success in graduate school and/or the professional world, e.g., Boehmer et al. (2002). SAS *OnDemand for Academics* provides a no-cost online delivery model to professors for teaching and to students for learning data management and analytics. In both SMIF classes, there is a bonus question regarding data analytics in each quiz and examination. The bonus question can be solved by using either an Excel spreadsheet or SAS codes[15]. The SAS codes for the bonus question are contained in the Excel-solution file of the assessment. As an example, Table 3 presents the SAS codes of the bonus question contained in an assessment.

Table 3: The SAS Codes of the Bonus Question of FIN 420 Quiz 2 in the 2024 Spring Semester

```
OPTIONS NOOVP NODATE NONUMBER LS=70 PS=50;

LIBNAME X xlsx '/home/.../.../Spring 2024 FIN 420/Book2.xlsx';

DATA Weekly;
   SET X.Sheet1;

PROC FREQ DATA=Weekly order=data;
    BY Observation;
    TABLES Depositor/BINOMIAL(p=0.3 level='Paid_Weekly' wald exact) alpha=0.1;

RUN;
```

ExamView Assessment Suite. ExamView is a test generator program. The author has been using the program to prepare for every test in his teaching for more than 20 years. A test generated by the program can be readily exported to various learning management systems, such as Moodle. The author

[14] The ODA is free for students, instructors, and independent learners, and it is a cloud-based version of SAS that allows users to access SAS Studio through a web browser.

[15] R will be useful for finance students as well. R is a free, open-source programming language used for statistical computing and data analysis. In the literature, it appears that there is a consensus that knowledge in both SAS and R is necessary, e.g., Lofland and Ottesen (2013), Zhang (2017), and Ozgur et al. (2018).

believes that it is much more efficient to create a test in ExamView and export it to a course learning management system (LMS) rather than creating it directly in the LMS itself.

Two Examples of Experiential Learning Activities in the SMIF Class

Costco's Special Cash Dividend of 2024. On 12/14/2023, Costco announced that its Board of Directors had declared a special cash dividend on its common stock of $15 per share, payable on 1/12/2024, to shareholders of record as of the close of business on 12/28/2023. The aggregate amount of this special cash dividend was approximately $6.7 billion[16]. One of the stocks owned by the Boxer Fund is Costco. In the portfolio class of spring semester, we discussed this corporate event of the company.

If a company is considering distributing excess cash to its shareholders, it can use one of the following three methods or use either two or three methods simultaneously: stock repurchases, regular cash dividends, and special cash dividends.[17] Baker et al. (2005) contend that having strong earnings is a major reason for a company to consider paying special cash dividends. Meanwhile, Baker et al. (2005, 112) argue that "special dividends are distributions to investors of large, non-recurring cash inflows, as opposed to regular cash dividends, which firms tend to fund with recurring earnings. Thus, specials allow managers to make temporary increases in cash payouts without necessarily committing to continue the higher distribution in future years." This argument explains why Costco issued the special cash dividend in 2024. According to the Value Line data, Costco's annual earnings per share (EPS) growth rate of the past five years has been 16%, which is impressive. The $15 per share special cash dividend distributed in 2024 is the fifth-ever special dividend paid by Costco. Previously, Costco paid out in 2012, 2015, 2017, and 2020, for the sums of $7, $5, $7, and $10 per share, respectively. Meanwhile, DeAngelo et al. (2000) report that there exists a significant negative correlation between the level of institutional ownership of a publicly traded company and the probability that the firm continues to pay special cash dividends. DeAngelo et al. (2000) contend that if institutional investors have a higher degree of financial sophistication than retail investors, they should more easily infer the lack of a substantive difference between regular cash dividends and special cash dividends. Thus, a higher level of institutional ownership should encourage firms to stop paying special cash dividends. Although DeAngelo et al. (2000) examine the evolution of special cash dividends paid by

[16] Costco declared on 1/18/2024 that a regular quarterly cash dividend on its common stock of $1.02 per share would be payable on 2/16/2024 to shareholders of record at the close of business on 2/2/2024.
[17] On 1/19/2023, Costco announced that it has reauthorized a common stock repurchase program of up to $4 billion, and the program will expire in January 2027.

U.S. firms between 1926 and 1994, their conclusion may not be applied to the continuous issuance of special cash dividends by Costco. According to the CFRA report, the institutional ownership of Costco's stock as of 12/15/2023 is 68%. Value Line reports that the largest two institutional investors of Costco are: Vanguard, 9.0% and BlackRock, 6.8%. The mean and the median of institutional ownership of U.S. firms reported in Simeth and Wehreim (2024) are 46.2% and 48.7%, respectively[18].

If this were not a SMIF course, the topic of special cash dividends, which is a sub-category of *Distribution Policy*, would not have been covered in an investments course at all. A SMIF class allows students to have full discretion over the management of a real-dollar portfolio. By managing the Boxer Fund, students encountered the topic of the special cash dividends issued by Costco. It is important for SMIF faculty advisors to demonstrate real-world practices of various financial topics encountered while teaching SMIFs. In addition, using examples from the real business world helps students realize that various finance knowledge is essential for the success in their future career.

Humane AI Pin Released on April 11, 2024. Humane Inc. started to market its AI Pin, the world's first wearable artificial intelligence (AI) computer, on April 11, 2024. The market reaction to the AI Pin is generally negative primarily due to the below-par performance of the product. The company was launched by two former Apple employees in 2018. The product, AI Pin, was considered a potential iPhone killer.

The SMIF class in the 2024 spring semester was on Monday, Wednesday, Friday (MWF) schedule. Since the Boxer Fund owns Apple shares, the sale of Humane AI Pin was discussed in class on Friday, April 12, 2024. One feature of the AI Pin is that a clip on the device can project images or texts onto a user's palm with laser. However, the design and interface of this AI Pin may be inherently flawed due in part to the laser display consuming tremendous power that causes the device to overheat. The consumer response of this AI Pin has been overwhelmingly underwhelming. Mickle and Griffith (2024) reported that "On April 11, reviews in The New York Times, The Wall Street Journal and The Verge blasted the AI Pin's shortcomings. Marques Brownlee, a tech reviewer on YouTube with nineteen million subscribers, headlined his review "The Worst Product I've Ever Reviewed…for Now."

Students appeared interested in the discussions of why the Humane AI Pin cannot replace an iPhone. Besides the problem of the device overheating, the following reasons were mentioned: (1) it lacks a full screen; (2) it lacks the ability to run apps; (3) it does not support mobile payments,

[18] The standard deviation of the mean is reported as 22.7% by Simeth and Wehrheim (2024).

and (4) it has very limited functionality compared to an iPhone despite its AI capabilities, making it unsuitable for most everyday tasks that people rely on their iPhones for, e.g., browsing the Internet, playing games, watching videos, or accessing a wide range of applications. In addition, one student mentioned Apple's reaction to the release of this Humane AI Pin: Apple was amping up its AI game by simply adding a new AI platform to its existing device line-up. As stated in the Investment Policy Statement of the Boxer Fund, "The security/industry/sector selected will be monitored and changes reported to the Fund." This in-class discussion on the release of the Humane AI Pin demonstrated the value of the experiential learning environment provided by the SMIF.

The Data Analyses of the SMIF

The Fund Characteristics

Similar to the format of the table contained in Lawrence (2008, 72), the profile of the Boxer Opportunity Fund is given in Table 4.

The Performance of the SMIF

The five-year geometric average of the annual holding period returns between 2020 and 2024 is estimated at 24.71%.[19] Meanwhile, the annual geometric average of the S&P 500 total returns is estimated at 14.53%. The test statistic of the Wilcoxon signed rank test is estimated as 7.50 with a p-value of 0.03. Therefore, the better performance of the Boxer Opportunity Fund than that of the overall stock market during the same time period appears to be statistically significant. The annual return data are presented in Table 5 below.

Table 4: The Characteristics of the Boxer Opportunity Fund

Date Established	October 2019
Size in December 2024	$39,000
Annual student participation	35
Funding source	Small private donations
Faculty member	Full-time regular

[19] The first stock purchase of the Boxer Fund occurred in October 2019. As such, the 2019 data is excluded from the computations of the Fund's performance.

Credit hours per semester	4 credit hours[20]
Maximum credit hours	8 credit hours[21]
Student level	Undergraduate
Application	None
Decision process	Majority vote of students

Table 5: The Annual Holding Period Returns of the Boxer Opportunity Fund and the S&P 500

Year	Boxer Opportunity Fund	S&P 500
2019	13.87%	31.49%
2020	18.96%	18.40%
2021	67.37%	28.71%
2022	-14.22%	-18.11%
2023	32.25%	26.29%
2024	33.53%	25.02%

Conclusions

SMIFs provide an effective experiential learning venue for business students to manage a real portfolio with real money. Despite the relatively small amount of seed capital and the lack of more advanced technological arrangements, e.g., no Bloomberg terminal and no trading room, this study demonstrates that a SMIF set up in a liberal arts college can grow successfully. With the five-year return data after the inception of the SMIF, the fund has been delivering a satisfactory performance. Meanwhile, this study provides a road map for creating and operating a SMIF as an experiential learning opportunity for finance students. Examples of experiential learning are also discussed. The paper outlines the necessary steps for starting a SMIF, e.g., formulating the investment policy statement. The approach to establishing a SMIF described in this article may be reproduced at other institutions, e.g., at another liberal arts college.

[20] The majority of undergraduate courses offered at Pacific University Oregon are worth 4 credit hours.
[21] Students can take Fin 320, Investments, in the fall semester and FIN 420, Portfolio Management , in the following spring semester.

This article demonstrates how a SMIF course can be taught using various educational technologies. Value Line and Excel spreadsheets are used extensively throughout the course. Basic SAS programming is introduced. The instructor's handwritten lecture notes are available to students on the same day that the seat time is completed. There is no paper handout of the course throughout the semester, and students submit each assignment and take each assessment online. To significantly reduce the carbon footprint as college educators, the pedagogical approach to teaching the SMIF course presented in this article suggests that we can drastically cut down on paper use by opting to distribute course materials in an entire digital way, eliminating the need for any paper handouts throughout the semester, thereby minimizing the environmental impact associated with paper production and waste in teaching finance courses.

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A Bloomberg Playbook for the Student Managed Investment Fund Analyst

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ABSTRACT

The objective of the Student Managed Investment Fund (SMIF) experience is to be a bridge between the traditional lecture classroom and the real-world application of portfolio management concepts. Students are immersed in the actual management of a real portfolio, which prepares them for a portfolio management career, and many SMIF programs also provide the tools that real managers use every day. This combination of real money, real markets and real tools gives SMIF graduates a marketable edge as they pursue a career in portfolio management. The most relevant and valuable tool they receive experience with is Bloomberg, which can be an intimidating database. This paper presents a playbook featuring the functions an analyst would utilize in preparing a deep dive financial analysis leading to a buy-side report.

Introduction

One of the distinctive features of a Student Managed Investment Fund (SMIF) is that it provides students with a real-life experience as portfolio managers, beyond what they might read about in a textbook or hear in a lecture. The process of managing real money, being accountable to a client – usually the Foundation Investment Committee at the institution – identifying potential alpha-producing securities, preparing a buy-side report and convincingly pitching it to the class or a panel, greatly enhances the students' marketability on graduation. Furthermore, many SMIFs have subscriptions to databases and tools – the same ones used daily by professional money

managers – making the student experience even more realistic. One of these databases is Bloomberg which, to many, can be intimidating to learn. Increasing attention has been given to the integration of real data, particularly Bloomberg, into the classroom (Athavale, M., J. Edwards, and K. J. Kemper 2016, Bruce, B. 2020, Coe, T. S. 2007, Holowczak, R. D. 2005, Munenzon 2024, Lei, A. Y., and H. Li. 2012, Schmutz, B. P. 2017, Scott III, R. H. 2010).

Bloomberg provides access to real-time financial data. Finance professionals depend on Bloomberg daily for researching and analyzing different publicly traded securities. It is the state of the industry tool for equity analysts and portfolio managers. Accessing this database requires a significant investment of at least $24,000 annually. Although many schools subscribe to Bloomberg and make it available to the general student population, many students new to investing know very little about it. With the growth of SMIFs, many schools have acquired Bloomberg just for those students managing money in the program. Learning to navigate this database can still be overwhelming, even for those aspiring to a career in money management. Becoming comfortable using Bloomberg, however, strengthens the marketable skills of the student analyst. Not only do they gain experience managing real money for a real client, but they utilize the database that the professionals use throughout their management time. This real experience gives these students a marketable edge upon graduation. The purpose of this paper is to acclimate the SMIF analysts to Bloomberg with special attention given to the features professional analysts incorporate into their analysis.

Getting Started

Bloomberg Terminals are easily recognized by their colorful keyboards. Most Terminals have at least two monitors. Once the user has signed in to a computer with Bloomberg installed, you double-click on the green Bloomberg icon to launch the software.

Bloomberg Keyboard

Users are shown a login page (see right) after accessing the software. New users can create a Bloomberg account directly on the Terminal at no cost by selecting the "**Create a New Login**" button. The Terminal will ask a series of general registration questions, as well as requesting the new username and password you would like to use. After completing the registration process, you will have full access to the Bloomberg Terminal and all of its capabilities. Depending on the settings, multiple tabs may open. If an IB or Launchpad window opens, feel free to exit out. The main window of the Terminal should look similar to an internet browser.

Functions and Securities

Functions: These are the applications that are designed to provide information on financial markets and securities. Each function has a mnemonic that is used to identify and access them quickly, similar to a stock ticker symbol. To find a function, type a related keyword or mnemonic into the command line (search bar). A list of suggested matches will appear in a pop-up tab directly under the command line. Example: WIRP is the World Interest Rate Probability function.

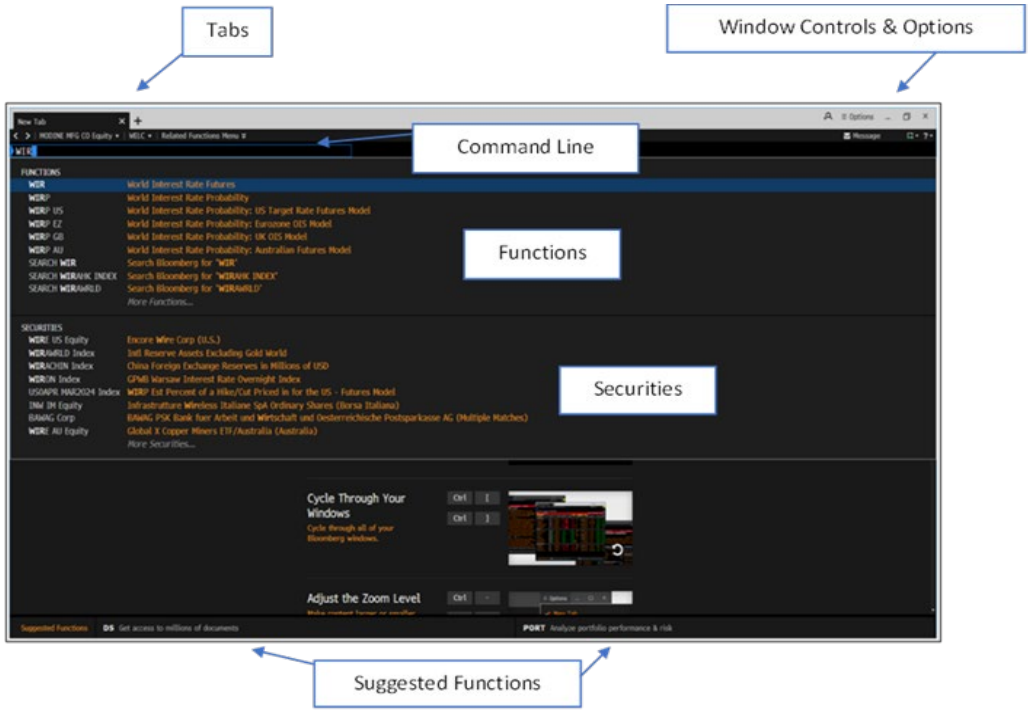
Securities: These are the individual financial instruments users can analyze using functions. There are many different securities in Bloomberg's database that are organized by type and ticker. If you do not know the ticker of the security you are looking for, try typing in a keyword or name. For example, **Bloomberg Global Aggregate Bond Index** (security name) is typed into the command line and then **LEGATRUU** (the ticker) is shown as a security.

There are two different function classifications: **Non-Security functions** and **Security-Specific functions**. Non-Security functions are used to research financial information unrelated to individual securities. These functions are used to conduct research on the broader financial markets. Security-Specific functions are used to gather information used for researching

individual securities. This paper is divided into two sections covering different Non-Security and Security-Specific functions.

General Interface

The home page of a Bloomberg Terminal (below) works much like a regular web browser. The upper part of the home screen window shows the different tabs that are open, the command line, and an options menu to modify window settings. To access a specific function, users must type the name or mnemonic into the command line. It will show up in the upper half of the results under **"functions"**. When looking for a specific security, type the name or ticker symbol in the command line. The security will pop up in the lower half of the results under **"securities"**. If help is



needed navigating the general interface of the Terminal, type **HELP** in the command line and select the Bloomberg Help Page function.

Non-Security Functions

This section discusses functions that provide information on an entire market. They are not specific to any single security, but they are useful for researching broad topics and areas of the market. There are also a few functions in this section not directly related to finance and investing but are still worth covering.

ICS: Classification Browser

This function is useful for learning how the equity market is organized into different sectors and industries. When initially launching the ICS function, the default classification system is Bloomberg Industry Classification Standard (BICS), however we recommend changing this to Global Industry Classification Standard (GICS) because it is the most common classification system. Under GICS, there are 11 sectors, split up into industry groups, industries, and sub-industries. Each sector has different characteristics and sizes, and they tend to perform differently as economic cycles change.

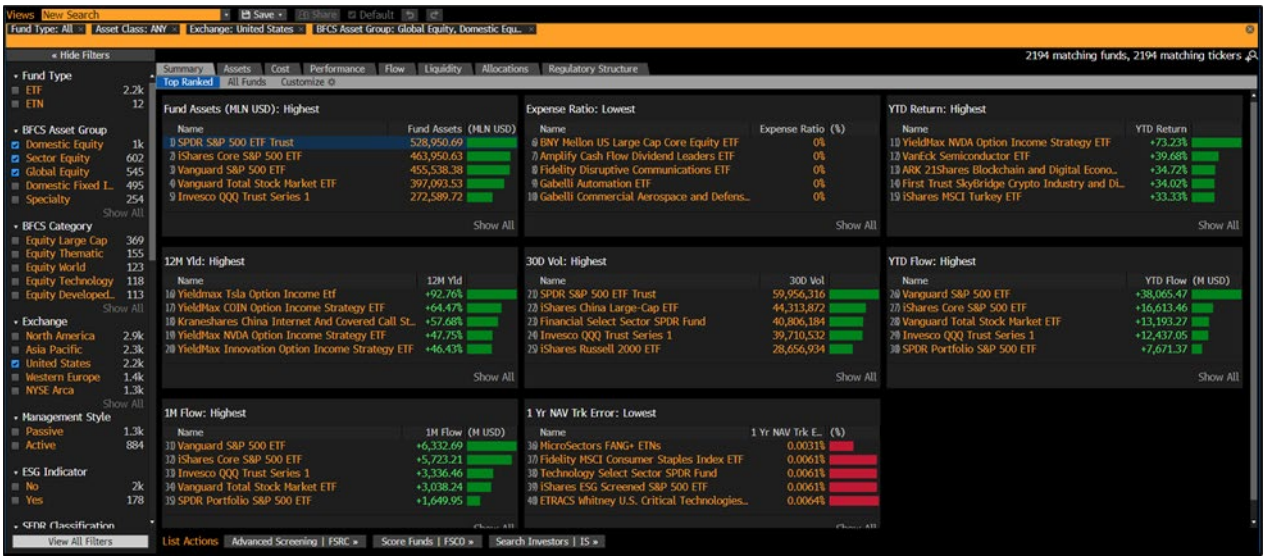
Global Industry Classification Standard Page

Each classification hierarchy has a related security that can be tracked on the Terminal. For example, if you want to find a security that tracks the performance of the entire Household Durables industry, you can type "**Household Durables**" into the command line and the suggested "**S5HODU Index**" will appear. You can use security specific functions on this for further analysis.

ETF: Exchange Traded Funds

This function allows users to browse and compare different ETFs to meet various needs. An ETF can be seen as a basket of securities that trades similarly as a single stock. ETFs generally have different characteristics that set them apart from one another. Some ETFs may focus on specific sectors/industries (XHB tracks the performance of the Homebuilders sub-industry), while other ETFs are broader in scope and cover entire markets (AGG tracks the U.S. investment grade bond market).

Exchange Traded Funds Screener



There are thousands of different ETFs to consider. This function allows users to narrow down the options to find the ETF that meet their criteria. Note that some ETFs have much less volume than others. Buying ETFs with wide bid/ask spreads may result in higher transaction costs due to lower liquidity.

MRR: Member Ranked Returns

This function allows users to view and compare the performance of different stocks held in an index or ETF within a given time period. This helps analysts visualize which stocks have been contributing the most to the performance of the overall index or ETF (see below). For additional information about the weight of each individual security within an index/ETF, users

can access the **HLDR** (Holder Ownership) function.

Member Ranked Returns

EQS: Equity Screening

This is Bloomberg's all-in-one equity screener that allows analysts to screen for securities that meet their customized investment criteria. Many different screening filters can be used to narrow the search such as market cap, country, industry, growth, and short interest. Refine your search by adding different filters that you believe are relevant to what you are looking for. Once you are satisfied with your criteria and number of matches, click "**See Results**" to pull up the securities your screener returned. This will launch the **WATC** (Watchlist Analytics) function, which provides a number of different metrics you can use to compare the securities the screener returned to help compare results.

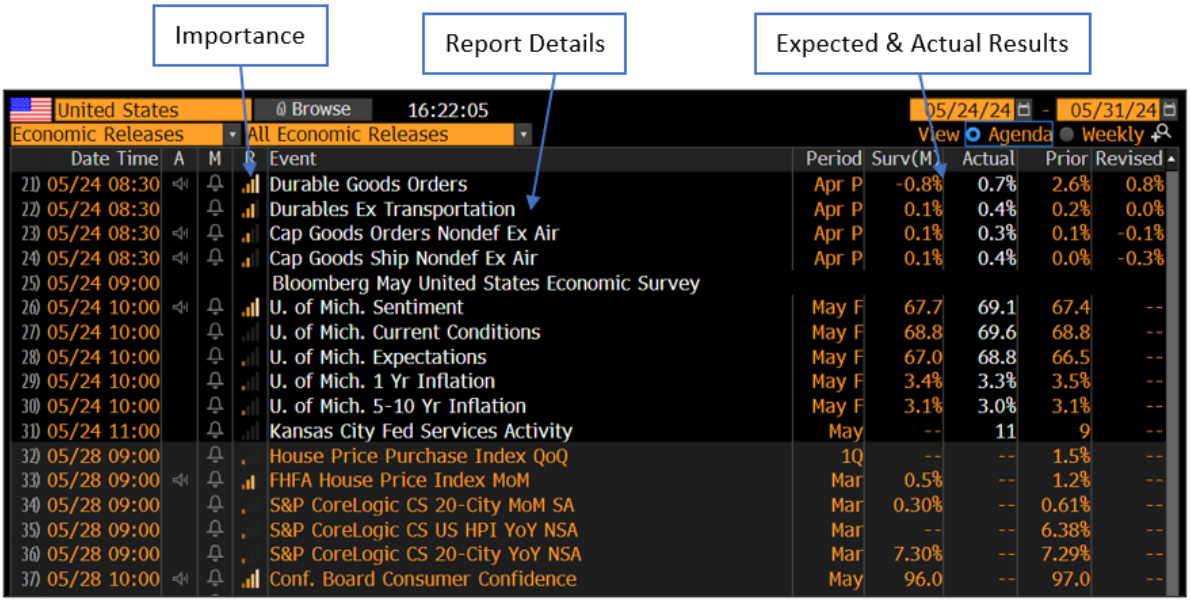
Equity Screener Results

Equity Screener Results

ECO: Economic Calendars

This function presents the economic data reports related to your selected country that are scheduled to be released in the future (see below). Median analyst/economist predictions can be seen for the results of the report. Significant surprises that differ from expectations will move the markets. For example, **Housing Starts** is a report that is released monthly, and it is a key indicator for where the housing market is going and how much demand the home building industry is facing. Hypothetically, if the Housing Starts figure gets released, and it is significantly lower than what analysts believe it should have been, it may negatively impact the home building industry

and the stocks within it.



ECST: World Economic Statistics

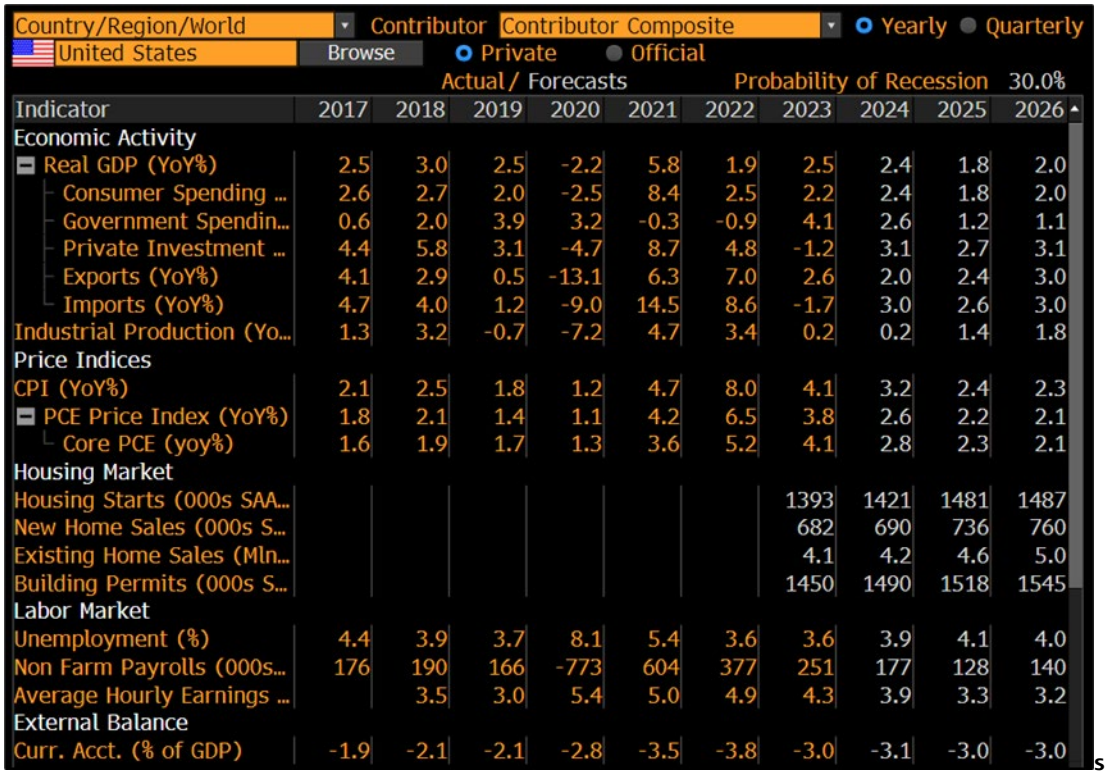
ECST displays current and historical economic data for your selected country using different official sources. These statistics are released by various government sources on a regular schedule. They are useful for researching the state of the economy and learning more about important economic statistics for each country that the SMIF economists are analyzing. All of the data has a related security ticker that can be plotted on a graph. Selecting the "**Custom View**" tab allows users to choose what economic data is included in their table for further customizable analysis. All economic data and reports can be viewed and filtered in the "**Economic Reports**" tab.

United States Economic Data Menu

ECFC: Economic Forecasts

The **ECFC** function helps users identify future expectations that different financial institutions have on where the economy is headed. It gives yearly and quarterly projections on key statistics such as GDP, CPI, Labor Markets, and Housing Markets. Clicking on the individual values will display additional statistics and the individual firm projections. By default, users view the "**Contributor Composite**" projections, meaning you are viewing the median projections of all the contributing financial institutions. If users want to view a certain firm's projections, the results can be filtered in the "**Contributor**" section. Additionally, this function provides a "**Probability of Recession**" statistic, which takes the median probability of recession occurring in the future that each financial institution provides. This statistic constantly changes as new economic data is released.

United States Economic Forecast



Country/Region/World | Contributor | Contributor Composite | Yearly | Quarterly
United States | Browse | Private | Official
Actual / Forecasts | Probability of Recession 30.0%

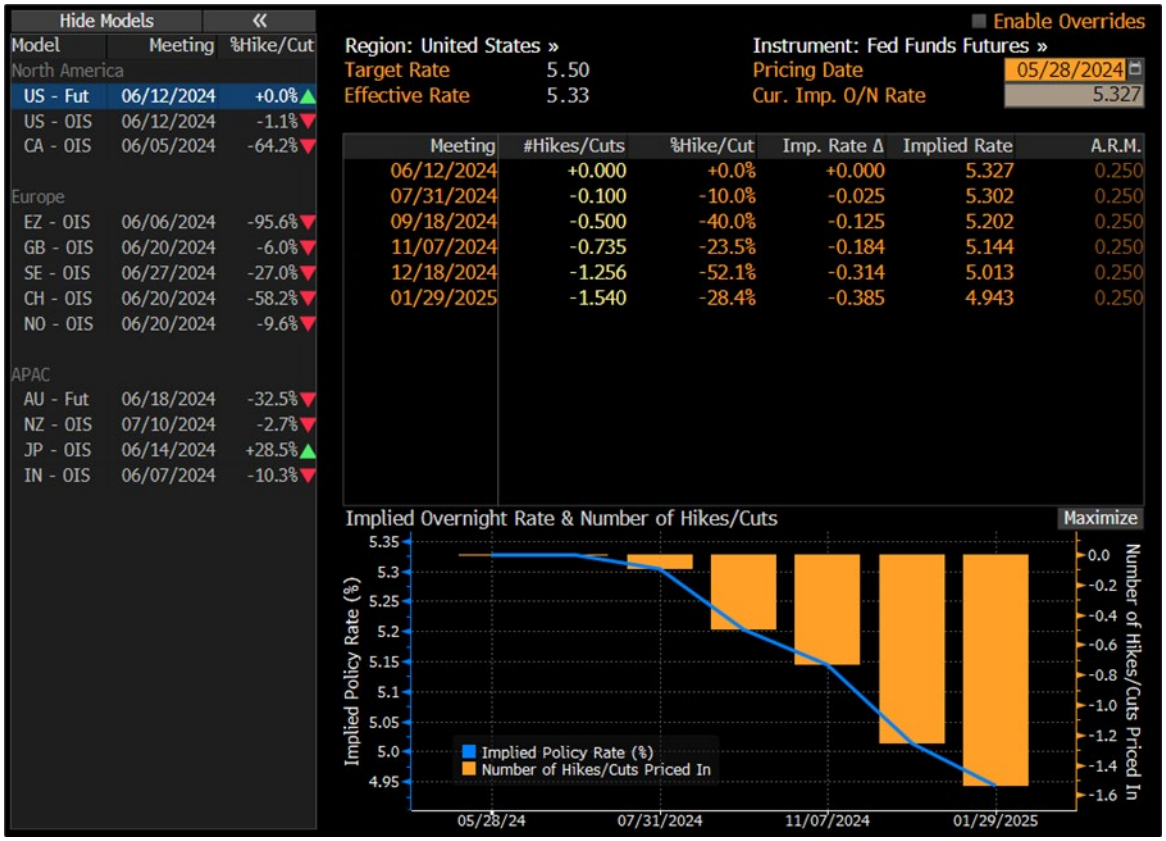
Indicator	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Economic Activity										
Real GDP (YoY%)	2.5	3.0	2.5	-2.2	5.8	1.9	2.5	2.4	1.8	2.0
Consumer Spending …	2.6	2.7	2.0	-2.5	8.4	2.5	2.2	2.4	1.8	2.0
Government Spendin…	0.6	2.0	3.9	3.2	-0.3	-0.9	4.1	2.6	1.2	1.1
Private Investment …	4.4	5.8	3.1	-4.7	8.7	4.8	-1.2	3.1	2.7	3.1
Exports (YoY%)	4.1	2.9	0.5	-13.1	6.3	7.0	2.6	2.0	2.4	3.0
Imports (YoY%)	4.7	4.0	1.2	-9.0	14.5	8.6	-1.7	3.0	2.6	3.0
Industrial Production (Yo…	1.3	3.2	-0.7	-7.2	4.7	3.4	0.2	0.2	1.4	1.8
Price Indices										
CPI (YoY%)	2.1	2.5	1.8	1.2	4.7	8.0	4.1	3.2	2.4	2.3
PCE Price Index (YoY%)	1.8	2.1	1.4	1.1	4.2	6.5	3.8	2.6	2.2	2.1
Core PCE (yoy%)	1.6	1.9	1.7	1.3	3.6	5.2	4.1	2.8	2.3	2.1
Housing Market										
Housing Starts (000s SAA…							1393	1421	1481	1487
New Home Sales (000s S…							682	690	736	760
Existing Home Sales (Mln…							4.1	4.2	4.6	5.0
Building Permits (000s S…							1450	1490	1518	1545
Labor Market										
Unemployment (%)	4.4	3.9	3.7	8.1	5.4	3.6	3.6	3.9	4.1	4.0
Non Farm Payrolls (000s…	176	190	166	-773	604	377	251	177	128	140
Average Hourly Earnings …		3.5	3.0	5.4	5.0	4.9	4.3	3.9	3.3	3.2
External Balance										
Curr. Acct. (% of GDP)	-1.9	-2.1	-2.1	-2.8	-3.5	-3.8	-3.0	-3.1	-3.0	-3.0

s

WIRP: World Interest Rate Probability

This function uses derivative market instruments, such as futures and swaps, to calculate what the market is currently pricing in short-term overnight interest rates to be in the future. These projections are subject to change as the market alters its expectations when new economic data gets released. For example, in February 2024, the market was pricing in a total of over ~4 rate cuts for the Fed Funds Rate by 2025. As CPI data continued to show inflation was remaining high, the market changed its projection to ~1.5 rate cuts by 2025 as of May 2024.

Implied Future Fed Funds Rate Changes



FED: Federal Reserve

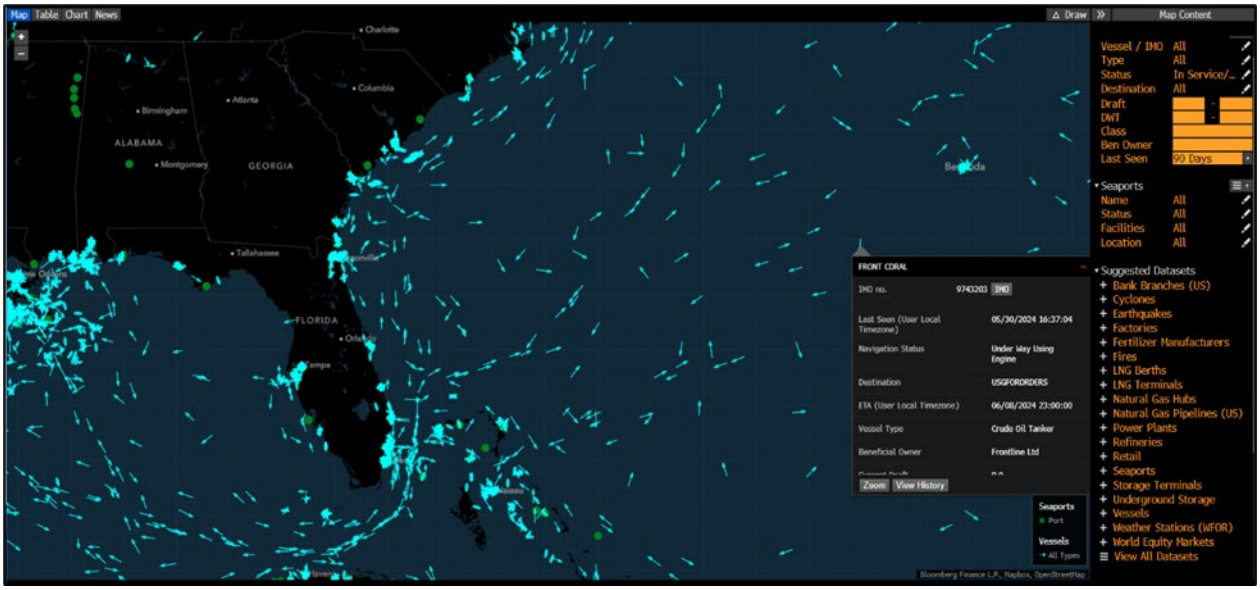
With FED, analysts access a large amount of public information about the Federal Reserve's policies, rates, news, and forecasts. Almost any information that the Fed releases is available through this function, including additional details on each branch of the Fed. Additional information about FOMC statements can be found using the FOMS function. It gives users side by side comparisons of statements the Fed releases when the FOMC meets eight times a year in order to gauge how their tone is shifting from meeting to meeting.

Federal Reserve Policy Menu

MAP: Custom Map

This function offers a large real-time database of different datasets that analysts can track on a map. Users can customize their map to show various datasets such as seaports, earthquakes, power plants, pipelines, and weather events. These datasets can be stacked on top of each other, and users can use filters to find the specific item they are looking for on the map. This is an excellent tool to use for event-based. For example, mapping oil refineries and superimposing a tropical storm can identify the possible refineries that will have disrupted production if the tropical storm grows to a damaging hurricane. For a portfolio manager, a disruption could have economic ramifications. Student analysts can use MAP to anticipate such impacting events and position the portfolio accordingly.

Map of Real-Time Shipping Vessels Around Southeast United States



In the example above, the seaport and vessels datasets are being displayed on the map. The blue arrows on the map represent individual vessels and the green dots represent seaports. Clicking on any markers will display additional information about the seaport/vessel users have selected. Additional datasets and filters can be added directly from the right side of the map.

MA: Mergers & Acquisitions

This function allows users to access historical and real-time information on M&A deal activity taking place in the market. Deal type can be sorted by "**M&A**" (the acquisition or sale of control in a company), "**Investment**" (activity involving the minority purchase of a company), and "**Other**" (joint ventures, buybacks, and spin-offs). Launching this function will place users in the overview tab where they can begin filtering and refining searches and analyzing data.

M&A Toolbar for Apple (AAPL)

The red toolbar (above) can be seen at the top of this dashboard. Users can perform a security search to find deal activity related to a specific company by clicking in the orange search bar and entering a company's ticker symbol. Users can also conduct a more refined search by clicking the "**Edit Search**" button in the red toolbar. A new screening dashboard will appear. Users have dozens of filters they can apply when searching for specific deals including industry, geography, deal size, and deal type. Users even have the ability to filter by the M&A advisors who were a part of certain deals. Once you are satisfied with the selected filters and number of matches, click the "**Results**" button in the lower right corner to view the output.

M&A Deals Search Screen

PRTU: Portfolio Administration

This function allows users to create and manage portfolios within the Terminal, while also using various tools to analyze their holdings using Bloomberg's portfolio management and risk functions, such as **PORT**. "**Portfolio Administration**" is the default dashboard related to this function. This dashboard allows users to create, manage, and share their different portfolios saved in the Terminal.

Saved Portfolio Screen

After creating a brand-new portfolio, users can click into it from the Portfolio Administration dashboard to launch the **Portfolio Display** view. This view allows users to alter and manage their portfolio's holdings. Information on the data grid related to individual holdings can be manually entered or imported from Excel. Once the data is filled in, users can track the portfolio's performance over time.

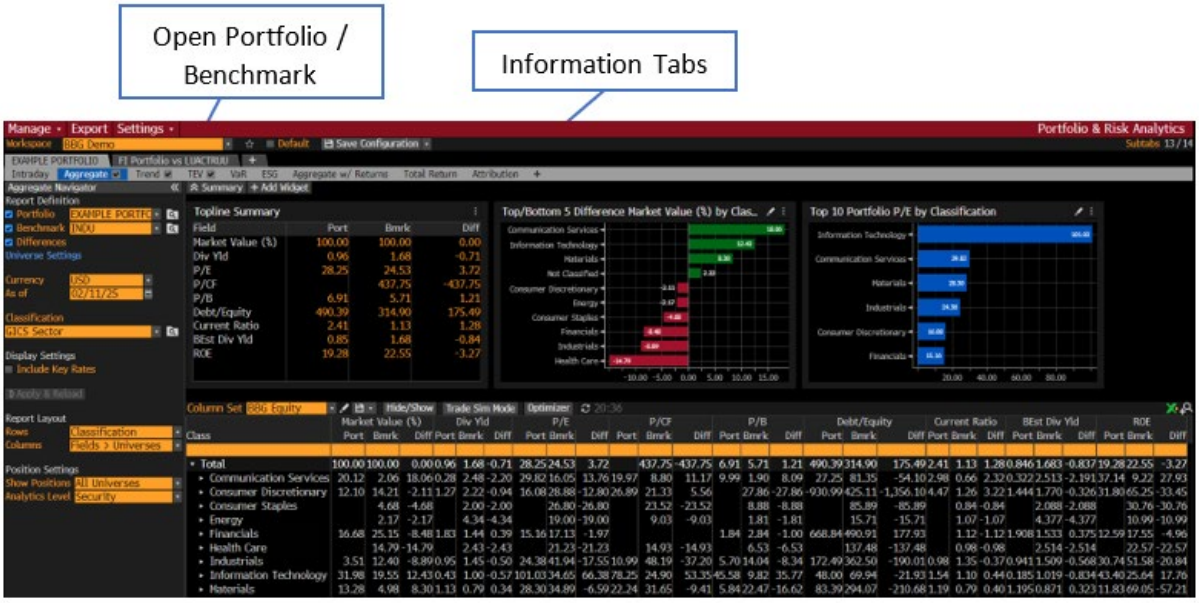
Saved Portfolio Example

Instead of creating portfolios directly in Bloomberg using PRTU, users can also use the **BBU (Bloomberg Uploader)** function to upload portfolios from other sources. This function allows users to upload large amounts of data into the Terminal. This function is commonly used by large institutional investors managing complex portfolios composed of different types of securities.

PORT: Portfolio & Risk Analytics

After creating/uploading a portfolio of securities, users can use the **PORT** function for in-depth analytics focused on portfolio construction, risk management, and performance measurement. Once the user opens the portfolio they would like to analyze, they can navigate the available tabs to view statistics, ratios, and risk metrics associated with their portfolio and benchmark (if applicable). Analysts can use this information to determine if their portfolio is properly allocated from a risk and return perspective and determine if they need to rethink specific positions.

Portfolio Analytics Screen



POSH: Classifieds

This function is not related to the typical financial markets; however, it does allow users to browse the secondhand markets for various luxury goods, merchandise, and real estate. Think of this as Facebook Marketplace or a Craigslist for millionaires. Users can filter by the type of item they are looking for and the location where the item is being sold. Once you click onto a post that seems interesting, you will be given the price, description, and a method of contacting the seller.

Luxury Automobile Classified Page

JOBS: Career Center

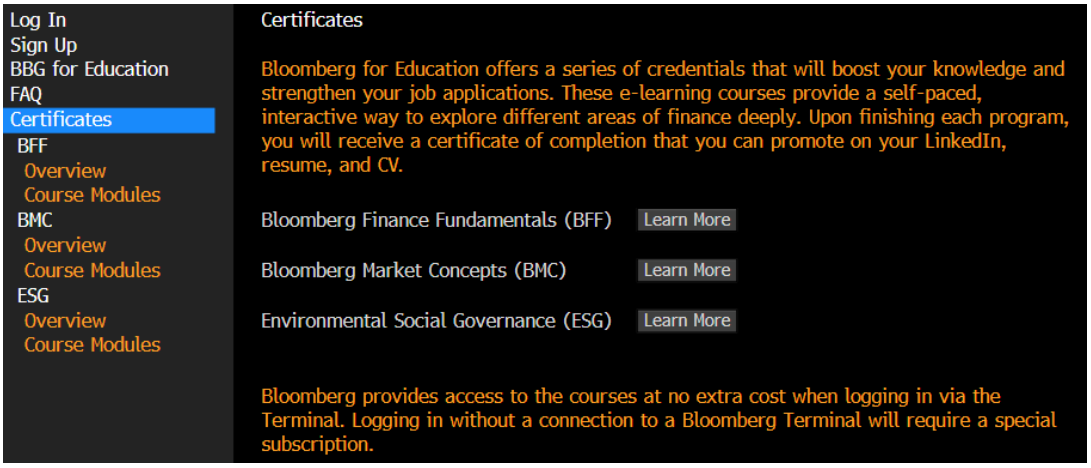
JOBS gives users access to Bloomberg's career center where they can look for job openings in the finance industry. This is an excellent way for SMIF graduates to distinguish themselves from other candidates seeking jobs on traditional job search websites such as LinkedIn. Some employers only search for new employees using this function because they are looking for experienced Bloomberg Terminal users to fill the job position. New jobs are posted daily for positions such as traders, analysts, portfolio managers, and bankers. Occasionally there are internship opportunities posted as well. Users can filter the job postings by the location and type of role. Clicking on the job title opens a new tab with a description of the role, required experience level, and an email address to contact the hiring company.

New York Jobs Screen

BCER: Bloomberg Certificates

This function sends users to the learning dashboard where they can access different free training courses offered by Bloomberg. Each course is self-paced and when completed, users will receive a certificate of completion that they can add to their resume. Currently, there are three courses available: **Bloomberg Finance Fundamentals (BFF), Bloomberg Market Concepts (BMC),** and **Environmental Social Governance (ESG)**.

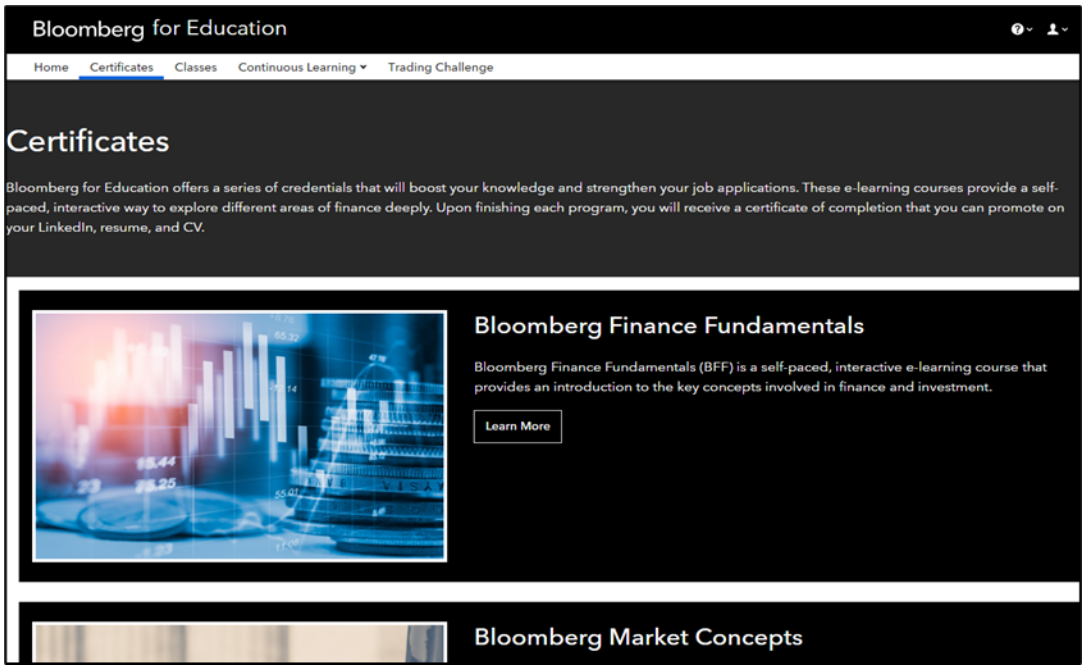
Bloomberg Certifications



Users can log in directly from the Terminal by clicking on “Log In.” Once logged in, you are redirected to the Bloomberg for Education website where you can access courses and begin working on certifications. These courses are free as long as you log in through a Bloomberg

Terminal. Users may access the courses outside of a Terminal, but this will require a subscription.

Bloomberg for Education Classes

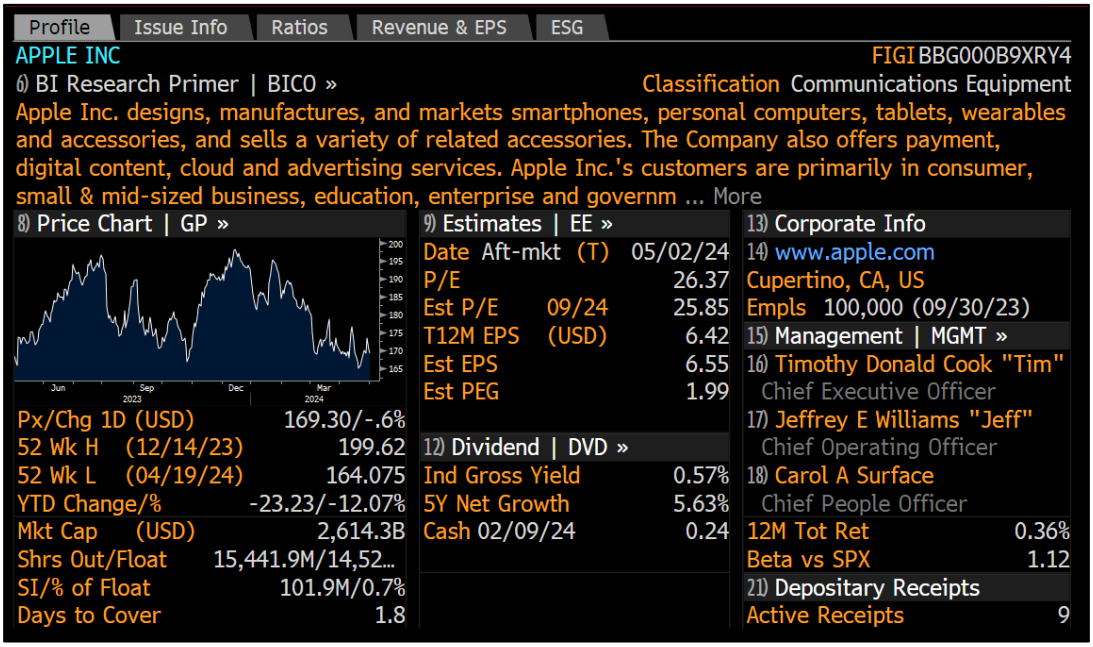


Security-Specific Functions

This section is about functions that are used for the research and analysis of specific securities. To access these functions, users must first enter a security name or ticker symbol and select it from the drop-down tab in the securities section. For the sake of consistency, we will use Apple (NASDAQ: AAPL) for the examples below. Once you type **AAPL** in the command line and select the related security, a pop-up menu will appear with a range of functions sorted by category. Clicking on each category will display several other functions to choose from. For this example, we will be discussing the functions we find most useful for analysis in a SMIF program. We do, however, recommend exploring all of them, as each has their own purpose. To launch a function, users can click on it directly from the pop-up menu, or type in the function's mnemonic in the command line. One important note is that some functions are not compatible with certain securities. For example, "**USGG10YR Index**" is a fixed-income security that tracks the 10-year Treasury yield. Functions used for analyzing equity securities, such as "**FA**" (Financial Analysis), will not work for fixed-income securities, and will likely return an error.

Equity Functions Screen for AAPL

DES: Description



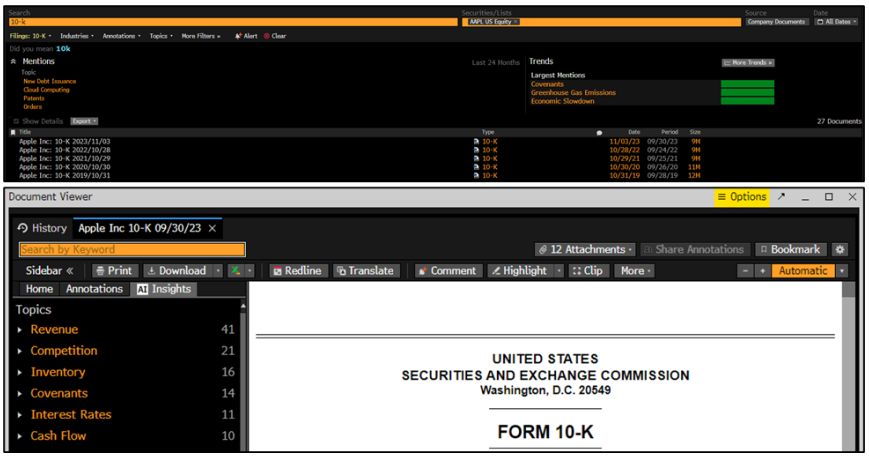
This function provides users with a general description and different key metrics for a specific security. It is a great function to start with to learn more about a company that is unfamiliar to you. There are several clickable items on each tab. The "**Profile**" tab gives general

information about the company, including a description, industry classification, management, and historical price information. The "**Issue Info**" tab gives information about the common stock itself, who it is held by, and what indexes it is part of. The "**Ratios**" and "**Revenue & EPS**" tabs give different financial metrics based on the most recent earnings release, as well as future market expectations for revenue and EPS. The "**Report**" button in the red toolbar at the top of the page generates a PDF summarizing the information found in the **DES** function.

DS: Document Search

Every publicly traded company must file specific documents in order to comply with SEC regulations. Users can access the **DS** function to easily pull up any of these public government filings. One of the most important filings used by investors– the 10-K– can be easily found using this function by entering **10-K** in the left orange "**Search Criteria**" search bar, and the ticker symbol **AAPL** in the right "**Securities/Lists**" search bar. After hitting enter, all related documents will appear in the space below the search bars. Users can double-click on one of the results and a new tab will open with their selected document. Users can download, print, make comments/highlights, and more with this document tab. Any public document related to their company can be pulled up using this function, not just SEC filings.

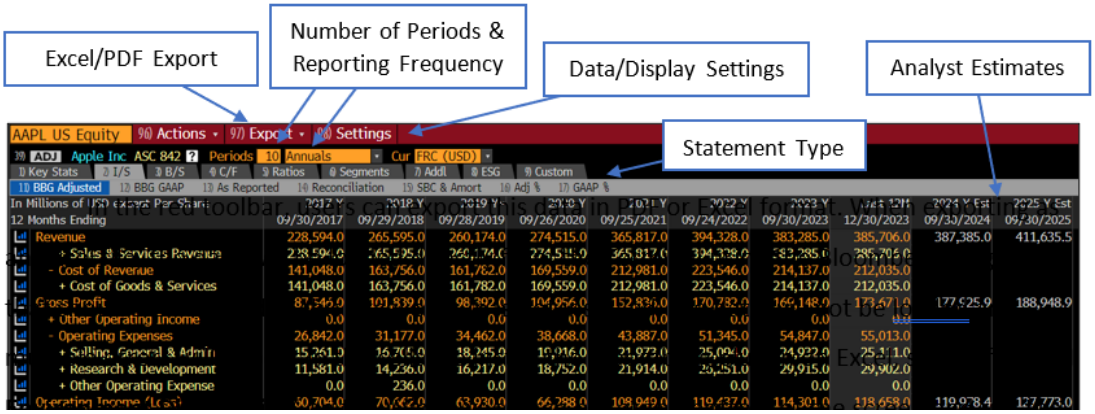
Document Search (DS) Screen



FA: Financial Analysis

The **FA** function gives users all the financial statements and metrics companies release on a quarterly basis. There are several useful features analysts can use to view a company's financial data within this function.

Income Statement Screen



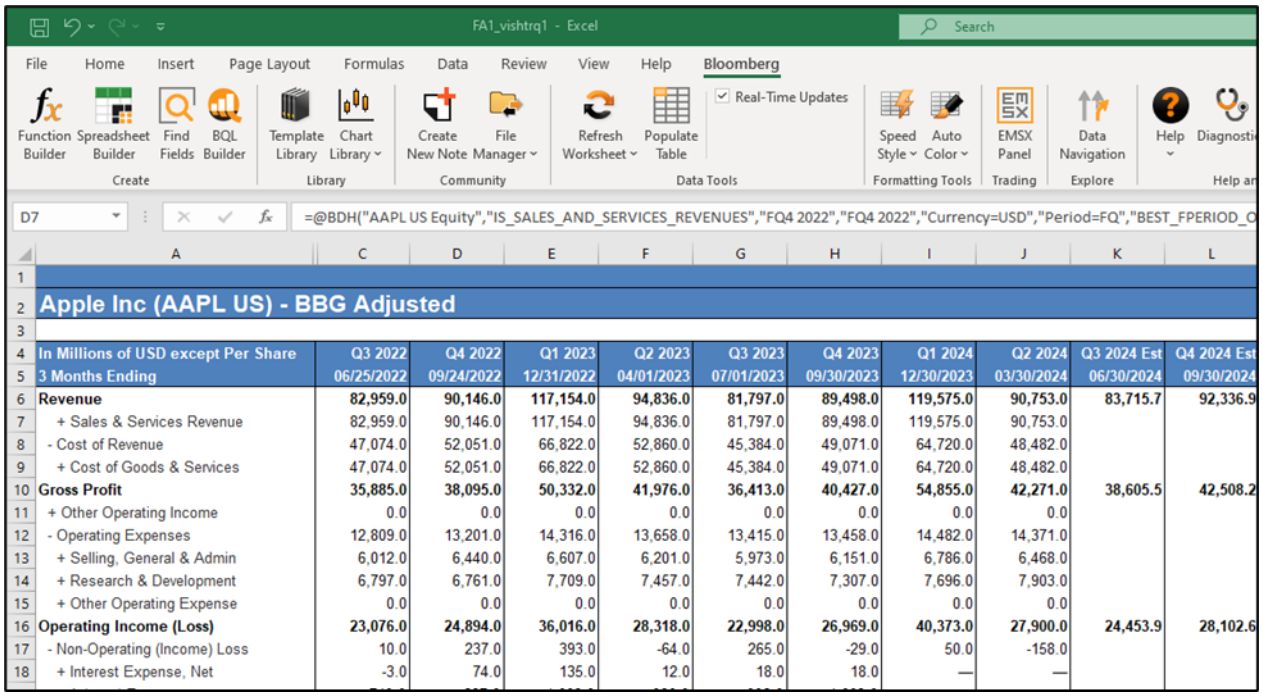
In the red toolbar, users can export this data in PDF or Excel format. When exporting as an Excel file, the data will be loaded directly from the Terminal using the Bloomberg plug-in that should be installed. If this Excel plug-in is not installed, the data will not be loaded, and multiple errors will appear in the cells. To install the Bloomberg plug-in on Excel, search for "**API Environment Diagnostics**" on the Windows search bar at the bottom of the screen and run the program. Under the "**Diagnostic Check**" section, click "**Start**" and then "**Repair**". Users should then be able to open Excel and there will be a "**Bloomberg**" tab in the ribbon.

The data will load and populate the cells exactly as the user had formatted it on the Terminal. You may notice that the values in the formula bar are not plain numbers. If you want to access the data outside of a Bloomberg Terminal, you must copy the data, paste it as a value (plain text), then paste the formatting. This will remove the function Excel is using to load in data from Bloomberg and will allow users to access the numbers outside of the Terminal.

Also in the red toolbar, users can click Settings to change how their data appears. The "**Fundamentals**" tab lets users change the number of periods/data frequency of their results. The "**Data**" tab lets users include growth rates, estimates, and common size analysis in their results. The "**Display**" tab will let users alter how their data is displayed and formatted. The

"**Report/Excel**" tab lets users customize how their export will display in PDF/Excel format.

Income Statement Exported into Excel



In Millions of USD except Per Share	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024 Est	Q4 2024 Est
3 Months Ending	06/25/2022	09/24/2022	12/31/2022	04/01/2023	07/01/2023	09/30/2023	12/30/2023	03/30/2024	06/30/2024	09/30/2024
Revenue	**82,959.0**	**90,146.0**	**117,154.0**	**94,836.0**	**81,797.0**	**89,498.0**	**119,575.0**	**90,753.0**	**83,715.7**	**92,336.9**
+ Sales & Services Revenue	82,959.0	90,146.0	117,154.0	94,836.0	81,797.0	89,498.0	119,575.0	90,753.0		
- Cost of Revenue	47,074.0	52,051.0	66,822.0	52,860.0	45,384.0	49,071.0	64,720.0	48,482.0		
+ Cost of Goods & Services	47,074.0	52,051.0	66,822.0	52,860.0	45,384.0	49,071.0	64,720.0	48,482.0		
Gross Profit	**35,885.0**	**38,095.0**	**50,332.0**	**41,976.0**	**36,413.0**	**40,427.0**	**54,855.0**	**42,271.0**	**38,605.5**	**42,508.2**
+ Other Operating Income	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
- Operating Expenses	12,809.0	13,201.0	14,316.0	13,658.0	13,415.0	13,458.0	14,482.0	14,371.0		
+ Selling, General & Admin	6,012.0	6,440.0	6,607.0	6,201.0	5,973.0	6,151.0	6,786.0	6,468.0		
+ Research & Development	6,797.0	6,761.0	7,709.0	7,457.0	7,442.0	7,307.0	7,696.0	7,903.0		
+ Other Operating Expense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Operating Income (Loss)	**23,076.0**	**24,894.0**	**36,016.0**	**28,318.0**	**22,998.0**	**26,969.0**	**40,373.0**	**27,900.0**	**24,453.9**	**28,102.6**
- Non-Operating (Income) Loss	10.0	237.0	393.0	-64.0	265.0	-29.0	50.0	-158.0		
+ Interest Expense, Net	-3.0	74.0	135.0	12.0	18.0	18.0	—	—		

Display Settings Screen

Directly under the red toolbar, users can find tabs that allow them to sort the type of financial data they want to see. The first tab, "**Key Stats,**" will show users the most important information found in the financials. A number of additional tabs appear directly under the selected tab which users can click and pull data. For example, after clicking the Key Stats tab for Apple, users can click the "**Company Model**" tab that appears directly below to see the number

of sales Apple made for their product and service segments.

Decomposition of Income Statement Items

In Millions of USD	2019 Y	2020 Y	2021 Y	2022 Y	2023 Y	2024 Y Est	2025 Y Est
12 Months Ending	09/28/2019	09/26/2020	09/25/2021	09/24/2022	09/30/2023	09/30/2024	09/30/2025
Business Breakdown							
Products							
Revenue	213,883.0	220,747.0	297,392.0	316,199.0	298,085.0	292,404.9	305,473.1
iPhone	142,381.0	137,781.0	191,973.0	205,489.0	200,583.0	198,077.7	207,809.0
iPad	21,280.0	23,724.0	31,862.0	29,292.0	28,300.0	25,970.7	27,048.2
Mac	25,740.0	28,622.0	35,190.0	40,177.0	29,357.0	29,253.4	30,506.7
Wearables, Home & Accessor...	24,482.0	30,620.0	38,367.0	41,241.0	39,845.0	38,088.9	40,662.5
Airpods (Segment Not Disc...						13,564.3	13,538.9
Apple Watch (Segment Not...						18,185.7	18,015.7
Apple Vision Pro (Not Discl...						1,388.8	1,626.9

The "**I/S**", "**B/S**", and "**C/F**" tabs all contain information about the three basic financial statements every company must report. Users can pull up the definitions for the account names and determine how some of the values are calculated by right-clicking on the account and clicking on "**Definition**".

Accounting Terms Descriptions

The gray numbers under the years/quarters that have not yet happened represent future analyst projections. Clicking the gray number will display the data used to create the estimate, if available. The figure displayed in the column is the mean estimate prediction of all analysts

covering the stock. These figures can serve as the "base case" for valuation purposes, as they reflect what the market is currently pricing in for a company's next earnings report. For additional estimate figures, use the **EM** (Earnings Trends) function.

Analyst Estimates

The "**Ratios**" tab shows all relevant ratios, such as profitability, growth, and liquidity, sorted by type. Like the account names, if you right-click on the ratio names on the left-hand side of the screen, you can pull up their definitions, as well as the formulas that were used for calculations. The "**Segments**" tab shows the different reportable segments the company classifies, as well as different geographic exposures, if available. The "**Addl**" tab gives users a variety of miscellaneous information they may find useful for analysis. In the "**Custom Tab,**" users can organize financial data from the other tabs into a single table for their own customizable analysis.

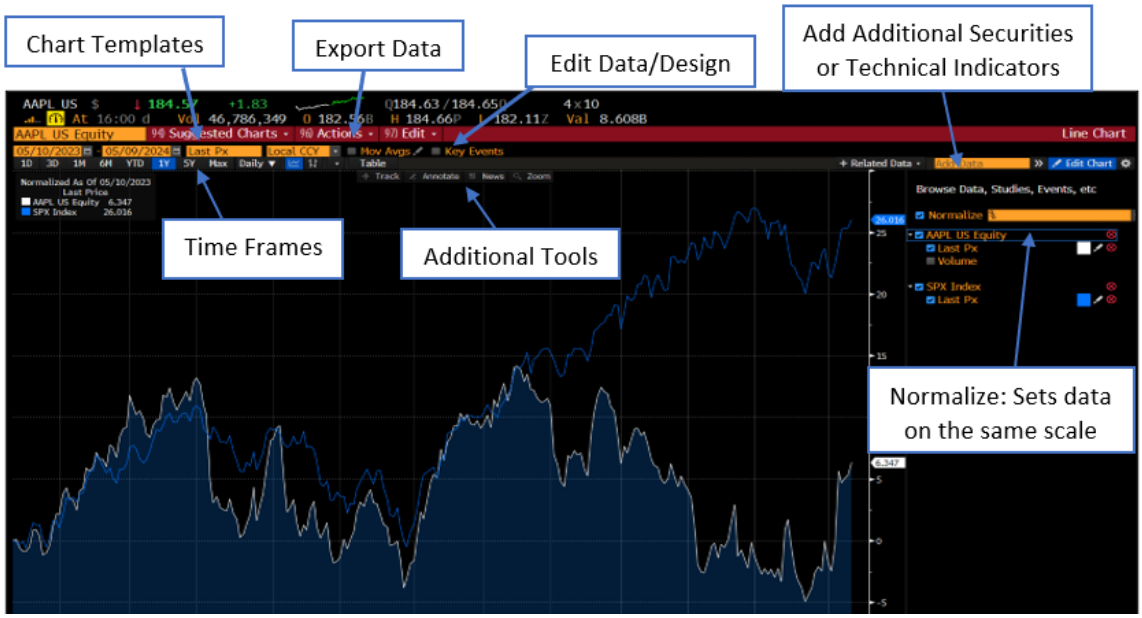
GP: Line Chart

This function plots prices/values on a chart to identify historical trends for a set of securities within a given time frame. Users can plot anything for which Bloomberg has numerical data such as stock prices, commodity prices, bond yields, housing starts, GDP, or unemployment. Data can be viewed in table format and exported to Excel.

Technical indicators, referred to as "**Studies,**" can also be applied in the "**Add Data**" search

bar area. Bloomberg offers hundreds of different tools for technical analysts. To learn more information about these tools, use the "**TECH**" (Technical Study Browser) function to access the Terminal's technical analysis library.

Historical Price Graph



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Technical Analysis Graph

CN: Company News

CN assembles stories on companies using thousands of sources. News articles can be filtered in a number of ways including by importance, source, and release dates. Clicking on any results will open a new window with the article and related information.

Company News Screen

EVT: Company Events

All past and upcoming events for the selected company are showcased in **EVT**. This is where analysts can find when the next earnings release for a company will be. It also shows other events like conferences that the company will be a part of. Transcripts and other documents can be accessed in the "**Resources**" section after the event has taken place. Clicking on the event name will open a new window to a related page with additional information.

Announcements Screen

ERN: Earnings History

This function allows users to view a company's historical earnings results. It allows users to quickly assess the impact of positive and negative earnings surprises on the stock's performance, as well as assess what the market is currently expecting for future earnings releases.

The "**Earning/Surprise Snapshot**" section provides users general information about how the stock tends to perform and what the market expects earnings to be next quarter. An important statistic it provides is "**Implied 1 Day Move,**" which uses the implied volatility from the options market to calculate how the market expects the stock price to move after earnings are released. In the example above, Apple's Implied 1 Day Move is 3.51%, meaning the market expects Apple's stock price will move up or down by 3.51% after earnings.

Earnings Surprise Snapshot

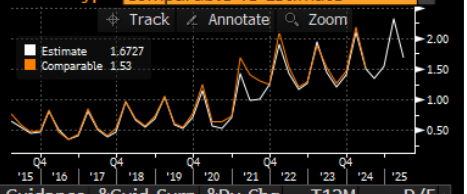
Apple Inc — Periodicity: Quarters — Source: Standard — Cur: USD

1) Surprise for more measures | MODL » 2) Earnings History & Price Reaction | EE SURP »

Measure: EPS, Adj+ — Px Chg Window: One Day After — Chart Type: Comparable vs Estimate

Earnings/Surprise Snapshot

Industry	Technology Hardware	Exp. for Next Period	1.424
Next Announcement	(E) 08/01/2024	Average Surprise	6.80%
Prior Announcement	05/02/2024	Average Abs. Surp	7.18%
P/E Actual	28.46	Surp/Px Chg Corr.	0.14
5 Year Growth	15.99%	Average Abs. Px Chg	4.19%
Earnings Trend	-0.02	Implied 1 Day Move	3.51%



	Ann Date Per	Per End	C	Reported	Comp	Estimate	%Surp	Guidance	%Guid Surp	%Px Chg	T12M	P/E
	Average of Absolute Values						7.18%			4.19%		
11)	05/02/2025 Q2 25	03/25				1.673					6.86	26.68
12)	01/30/2025 Q1 25	12/24				2.315					6.71	27.27
13)	10/31/2024 Q4 24	09/24				1.535					6.58	27.81
14)	08/01/2024 Q3 24	06/24				1.333					6.50	28.15
15)	05/02/2024 Q2 24	03/24		1.530	1.530	1.502	1.86%			5.98%	6.43	26.67
16)	02/01/2024 Q1 24	12/23		2.180	2.180	2.102	3.71%			-0.54%	6.42	29.99
17)	11/02/2023 Q4 23	09/23		1.460	1.460	1.394	4.73%			-0.52%	6.12	27.98
18)	08/03/2023 Q3 23	07/23		1.260	1.260	1.205	4.56%			-4.80%	5.95	33.02
19)	05/04/2023 Q2 23	04/23		1.520	1.520	1.433	6.07%			4.69%	5.89	28.81

The bottom half of the presentation is a table giving a variety of different earnings-related information. The left columns give the dates that earnings will be released. The "**Reported**" column gives the actual EPS for that date. The "**Estimate**" column is the mean value of the estimated EPS given by analysts covering the stock. Clicking on this value will show the different estimates each individual analyst gave. For example, the earnings estimates from five analysts covering AAPL are provided below.

Analyst Earnings Estimates

OMON: Options Monitor

This function allows users to view real-time options market data related to a stock. General call and put information, such as bid/ask, volume, and strike price, is given. You can customize how data is grouped in the settings section. By default, the first options that are shown at the top of the table are closest to expiration. If you would like to see more out-of-the-money options contracts, you can increase the "**Strike**" number to view more options. In the "**Exch**" drop-down box, you can specify which source you want data to come from.

By right-clicking directly on any call or put, a small window of related functions will appear to assist you with further analysis of a specific option. Options traders will find these additional functions useful while analyzing volatility, trade data, and other real-time information related to the specific option they selected.

Options Monitor

SI: Short Interest

This function allows users to analyze information related to short interest for a specific stock, helping them assess the market's overall sentiment. High short interest suggests that many investors believe the stock's price will fall, while low short interest may indicate the opposite. Short interest is typically reported by exchanges twice a month. This information is available to all Bloomberg users in the "**Exchange Reported**" tab. There are additional services that provide more current real-time data. This information can be accessed in the other two tabs in the SI dashboard; however, it is only available with a separate subscription. The "**Exchange Reported**" tab is split into three panels. The information found in these panels can be viewed in either chart or table format. The top panel displays the relationship between the underlying stock price and the short interest ratio. The middle and bottom panels allow users to visualize how the short interest ratio is calculated by displaying total short interest and average trading volume.

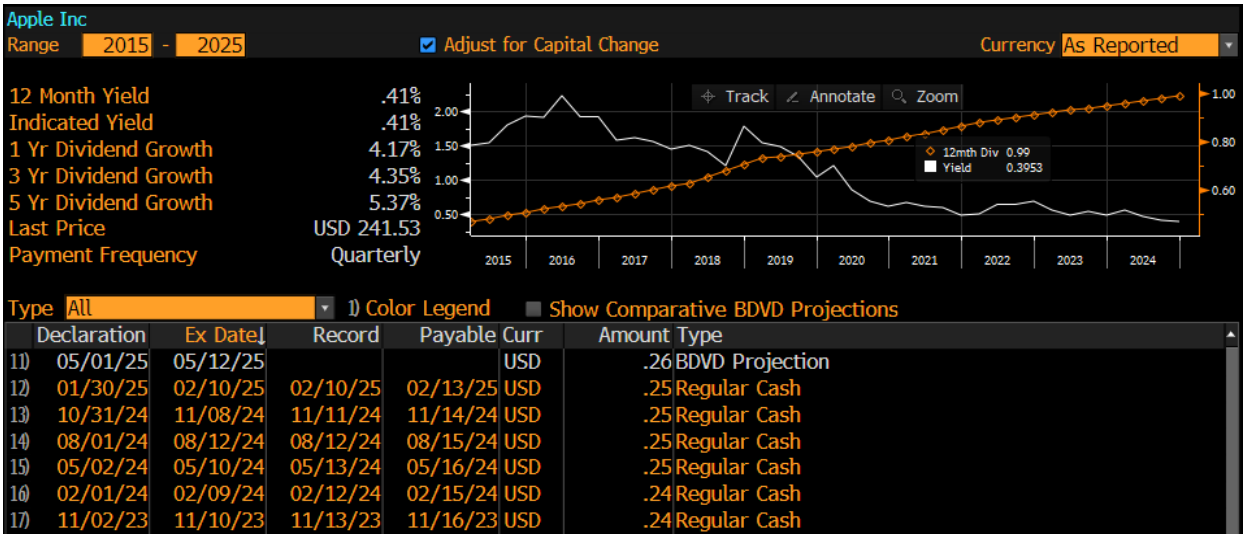
Short Interest Graph

DVD: Dividend/Split Summary

DVD gives users the ability to learn more about a company's historical dividend distributions and stock splits. Information on yield, dividend growth, and payment frequency is displayed and charted out in the upper part of the screen. The table provides the relevant

information for each dividend payment such as the declaration/ex/record/payable dates and dollar amount per share. This table also displays stock split data (if applicable) and a projection for when and how much the next dividend payment will be. Clicking the projected dividend will launch the **BDVD** function which allows users to project out dividends for multiple years into the future.

Dividend and Stock Split Summary



MGMT: Company Management

The **MGMT** function provides information about the management team and Board of Directors of the selected company. Users can view information such as career histories, performance data, and respective tenure and start dates at their company. Users can click the names of any of the executives to find more information about their history, compensation, stock holdings, and related news articles. Companies with strong management teams whose compensation is tied to the company's performance tend to be more successful.

Management Team

Management Team Profile of Tim Cook, CEO

Clicking on the CEO's name–Timothy Cook–opens a page that presents the background and history of the CEO. The "**Reported Holdings**" section of the bio brings up the shares of different companies in which the executive has ownership. Another window opens data related to the historical stock ownership and a chart shows how the number of shares held by the executive has changed over time.

Reported Holdings of Tim Cook, CEO

HDS: Security Ownership

This function displays the institutional and insider holders of a security. Users can use this information to determine which investors are building up or winding down their holdings of a specific security. The "**Current**" tab will show all reported current holders of the stock. Users can filter the results they see by clicking "**Refine Search**". A holding history chart can be viewed to see how each holder's position has changed over time.

The "**Ownership Summary**" tab allows users to organize ownership results into different categories. It also allows users to compare how ownership has changed over time across different categories by comparing today's ownership statistics against a past date. Insider transactions, option holders, and debt holders may also be seen in different tabs using this function.

Current Ownership

Institutional Ownership Summary

CM: Company Monitor

The CN function allows users to monitor recent key events that influence a company's stock price. Many of the tabs related to this function use a combination of functions to pull in information, allowing users to easily source a variety of important data on the Terminal, all in one place. The "**Developments**" tab lists the most recent information relevant to a company, such as financial analysis and valuation, analyst coverage, and other relevant news. The **Stakeholders** tab shows the company's largest shareholders, debtholders, and additional analyst coverage. The **Performance** tab shows the stock's movement over a given period of time. Different benchmarks can be added to compare performance. The **News** tab displays recent company news articles, and the **Documents** tab displays all related public transcripts, research reports, and presentations.

. **Company Developments**

GUID: Company Guidance

If the company you are analyzing provides guidance data, the information can be found using this function. This function provides company-reported guidance measures and compares them to market estimates and actual results when new information is released. Information can be grouped either annually or quarterly. Companies can provide guidance on a variety of different items such as revenue, EPS, and cash flow. If actual results are significantly more positive than the guidance or market estimate, it may positively impact the company's stock price. If you would like to access the source documents of the guidance to potentially learn more about how the company determined their figures, refer to "**Guidance Headlines**" at the bottom of the screen.

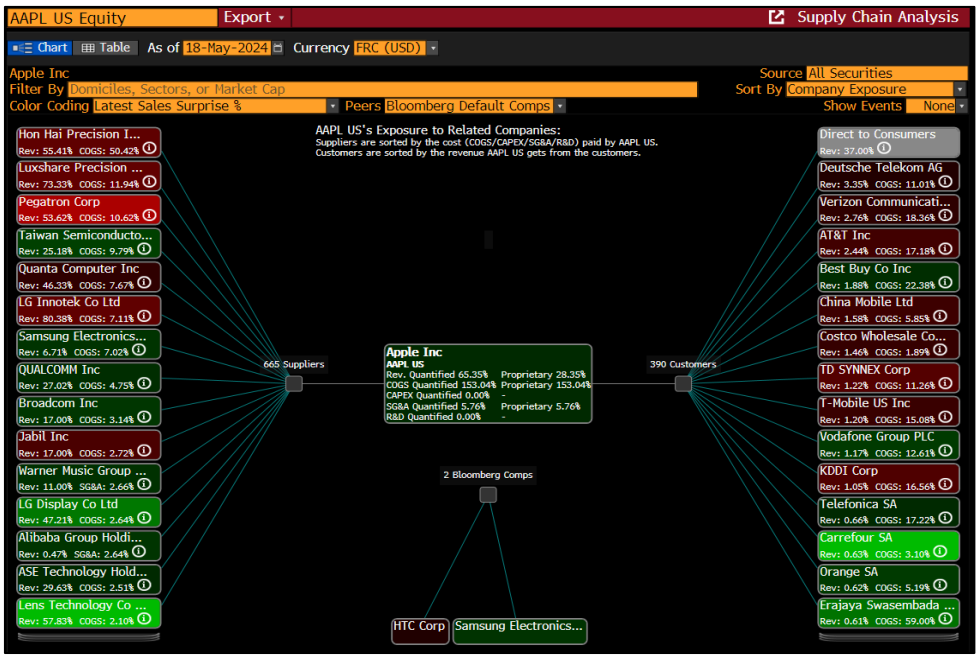
SPLC: Supply Chain Analysis

This function is Bloomberg's all-in-one supply chain analysis tool. This function is especially important for product-oriented companies that focus on manufacturing and distribution. Suppliers are on the left; customers are on the right. Competitors can be seen at the bottom. Users can click on any one of these companies and it will pull up their own supply chain analysis tab. Users can filter companies by domicile, sector, or market cap. Users can sort the order in which the results are displayed by various relationship variables such as revenue

exposure, CapEx, and COGS. This data may also be viewed in a table format and exported to Excel.

Company EPS Guidance Record

AAPL Supply Chain



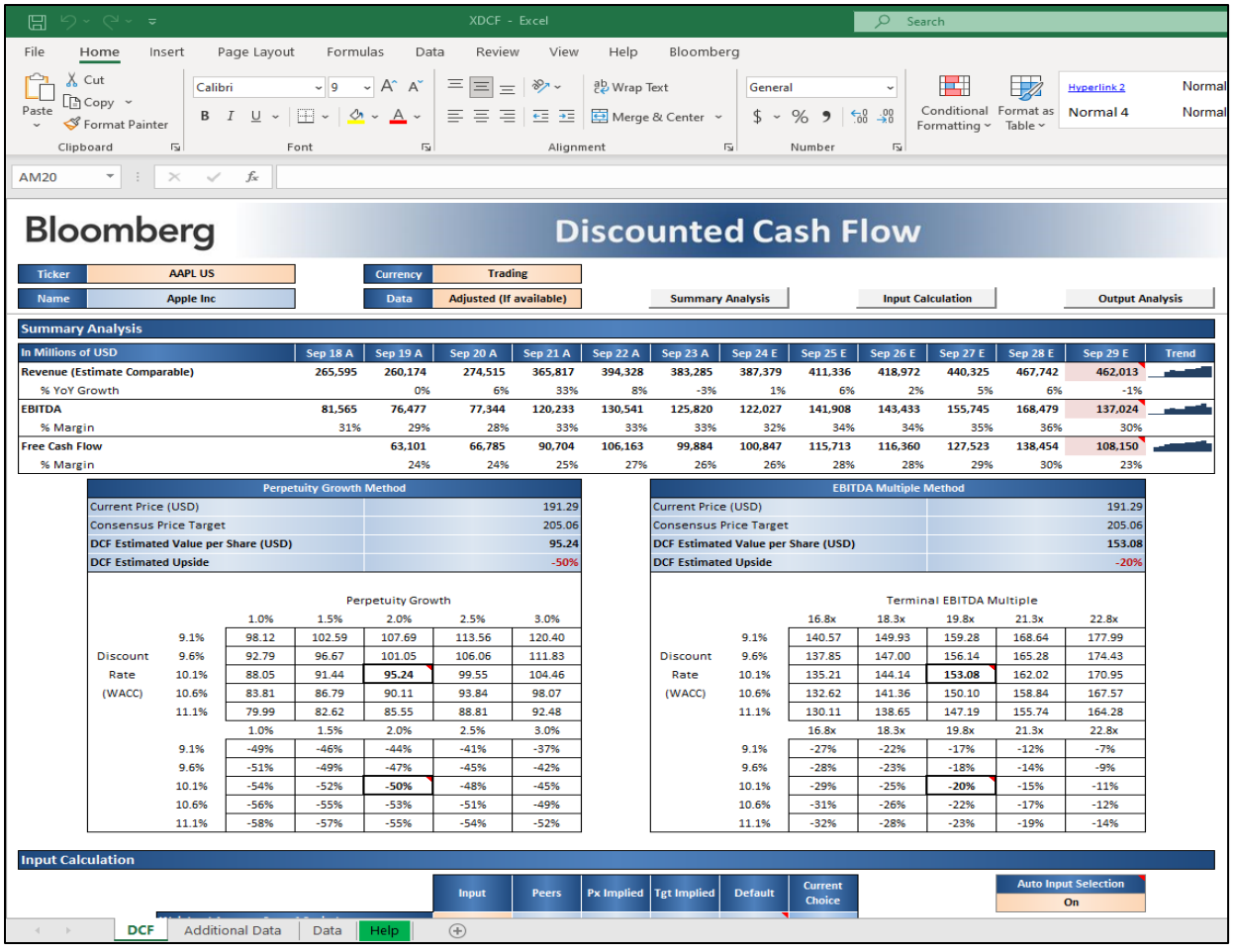
Using the example above, we learn that Apple's biggest customers are individual consumers (Direct-to-Consumers), representing 37% of revenue. The remaining customers are individual companies, which each represent a small percentage of revenue, which is beneficial to Apple. Hypothetically, if a single customer accounted for 30% of Apple's revenue, investors would see tha as a risk. The risk is that if the customer were to stop doing business with Apple, they would lose a significant portion of revenue. The supply chain relationships of companies with high customer concentration must be monitored, as they could be a good indicator of how the company may perform.

XLTP: Excel Template Library

XLTP gives users access to an extensive library of downloadable Excel templates. These templates use Bloomberg to directly import the numbers users need for analysis. Note that this function will only work if Bloomberg is linked with Excel. Users can verify this by opening Excel and checking the ribbon to for a Bloomberg tab. If the Bloomberg plug-in is not installed in Excel, refer to the **FA** section of this paper for details on how to resolve the issue.

Excel Template Library

For this example, we used a discounted cash flow (**DCF**) template for Apple which is presented below. DCF is a popular valuation method analysts use to estimate the value of a company based on their own projections and assumptions of the company's future cash flows. After loading the DCF template, users must change the ticker symbol from the default "**IBM US**" to "**AAPL US**" (do not forget to add the "US" at the end). Excel will automatically populate the historical financial data for you along with a range of estimates. From here, users can alter these projections using their own assumptions to calculate their own intrinsic value. In this model, if a cell is orange, users can click on it and edit it themselves. The template will automatically update its calculations with each change the user makes.

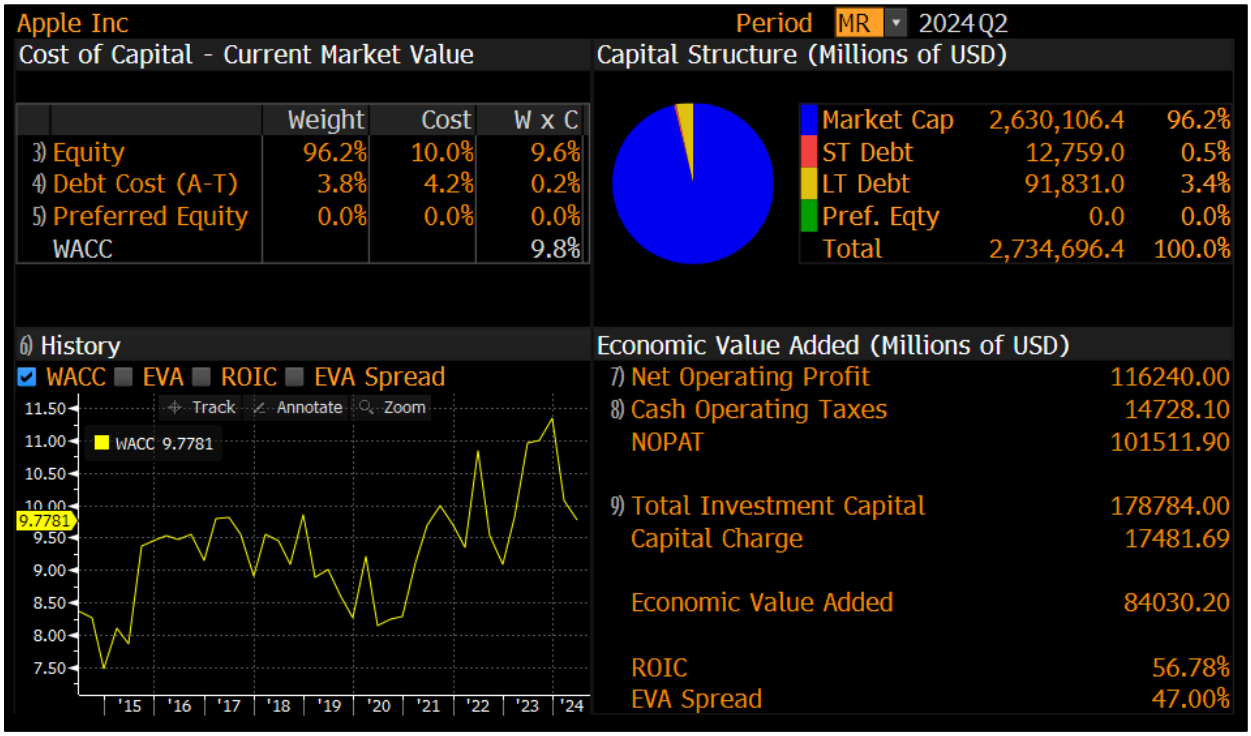


WACC: Weighted Average Cost of Capital

A company's WACC represents the cost of capital from all sources including debt and

equity. The WACC is generally used as the discount rate or required rate of return for an investment and is used frequently in intrinsic valuation models. Bloomberg automatically calculates WACC for you, however if you do not agree with the assumptions used to calculate the WACC, you can modify them manually by clicking on "**Equity**" or "**Debt Cost**".

Capital Structure



BETA: Historical Beta

Beta measures how sensitive a stock is relative to an index. This figure is also used when calculating the cost of equity in the WACC formula. Calculating Beta requires three parameters: a related index, a sample calendar period, and a return frequency. Select parameters consistent with your expectations for the firm. In the results, Bloomberg will give both Raw and Adjusted Betas. Adjusted beta is an estimate of a security's future Beta. It assumes that it moves toward the market Beta of 1 over time. In the example above, we calculated Apple's Raw Beta to be 1.144. Generally speaking, a Beta greater than 1 suggests that the stock is more sensitive to market movement than the broader market, while a Beta below 1 suggests that the stock is less sensitive.

You may be able to find Beta figures for different companies online, however the best Beta

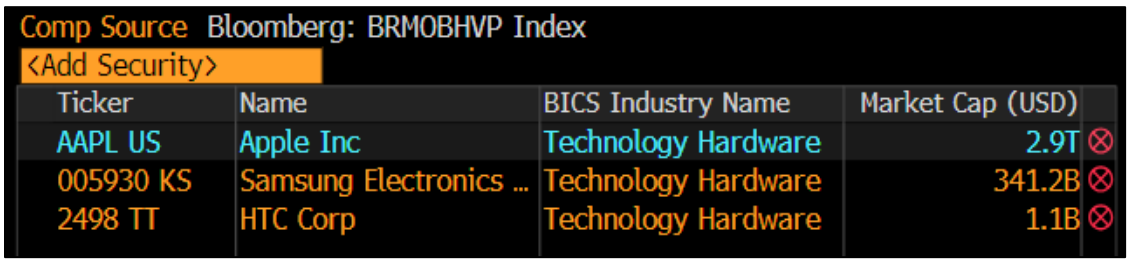
is the one you calculate using your own inputs. You may disagree with the parameters used by online sources when calculating Beta and this use their own parameters that you may disagree with when calculating Beta, which could result in different calculations. For example, Apple's Beta according to Yahoo Finance is 1.26. Using the WACC function, we use the Raw Beta of 1.144 that we calculated and get a Cost of Equity of 10.19%. If we plug in use Yahoo Finance's Beta of 1.26, it will result in a Cost of Equity of 11.02%. Using Yahoo Finance's Beta would result in a higher WACC, and if you were to use the higher WACC as a discount rate in a DCF valuation, it would result in a lower equity value calculation for Apple.

Beta Calculation

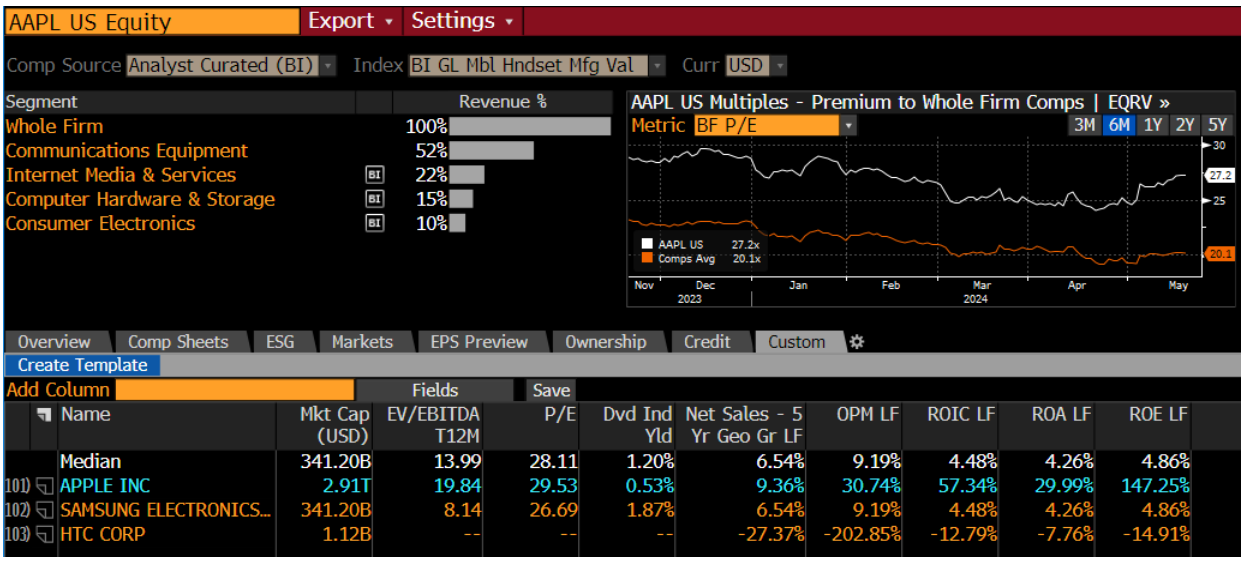
RV: Relative Valuation

When conducting relative valuation or "**comps**", users pick a set of similar public companies and use different ratios and multiples to find out which companies could be undervalued or overvalued relative to their peers by the market. Bloomberg will automatically load in comps for you; however, users can add or remove any company it lists.

Peer Group Identification



Relative Peer Comparisons

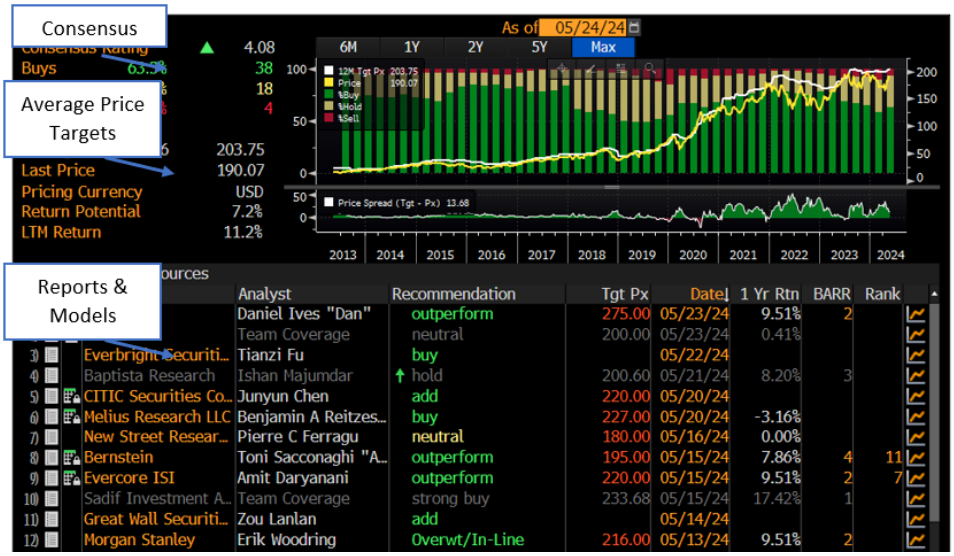


The graph in the upper right shows how the comp set and Apple's valuation multiples change over time. Clicking on this graph will launch the **EQRV** function where users can take a deeper dive into how these valuation multiples have moved historically. If you want to change the comps you are looking at, but are unsure which companies should be included, click on the "**Comp Source**" drop-down menu and select the option you prefer. Users can edit the comps manually by right-clicking on any of the company names. A tab will open and you can click "**Edit Comps**". A new window will appear allowing users to add any company they believe should be included in the comps set or remove any company that does not seem relevant.

ANR: Analyst Recommendations

Analysts are expected to do their own analysis on a company; however, a second opinion from Wall Street can be a helpful "sanity check" of their opinions. The Analyst Recommendation

Analysts consistently adjust price targets as new information about the companies they are covering is available. Apple, being one of the largest companies in the world, has a large number of analysts covering the stock. Smaller companies generally get less analyst coverage, therefore there may be more opportunity to find mispricing.



Conclusion

This paper presents several Bloomberg functions that analysts will find helpful in constructing a buy-side report to pitch to their SMIF colleagues. There are still many more features that can only be found from hands on use. We encourage all users to explore the Terminal's capabilities because there are many useful tools and features that can only be uncovered through practical use. Nevertheless, the functions presented here provide a comprehensive foundation for forming an opinion of a company's worthiness for inclusion in the SMIF portfolio.

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Bridging Human Insight and AI: Enhancing SMIF Student Learning Through Technology

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ABSTRACT

This paper presents a comprehensive case study of the Beacon Fund at Valparaiso University, a student-managed investment fund (SMIF) that integrates traditional investment analysis with advanced artificial intelligence (AI) tools in a live portfolio environment. Combining curriculum structure, multi-year portfolio performance, and AI on tool efficacy, the study offers an evidence-based view of how SMIFs can serve as laboratories for real-world learning. Particular attention is given to how AI tools augment traditional platforms like Bloomberg, improving students' analytical depth, decision-making confidence, and communication skills. While fund returns are influenced by market dynamics beyond instructional control, the integration of AI has significantly enhanced students' experiential learning outcomes.

Introduction

Student-Managed Investment Funds (SMIFs) have become a widely adopted pedagogical tool in business education, providing students with real-world experience in managing actual investment portfolios. The concept of student-directed investing dates to 1946, when John H. Tarbell, an economics professor at Lafayette College, helped establish what is widely regarded as the first student-run investment club in the United States. This initiative began with a $3,000 donation from returning World War II veterans and laid the foundation for the formal development of SMIFs in higher education (Lafayette College Investment Club, 2021; CNN Money, 2016).

The broader expansion of Student-Managed Investment Funds (SMIFs) occurred in the

1990s, as universities increasingly sought to bridge classroom theory with market experience. A comprehensive survey by Neely and Cooley (2004) found that over 128 universities had established SMIFs by the early 2000s, and this number has continued to grow steadily. According to recent data from the Student Managed Investment Fund Consortium (2024), more than 190 universities across the United States now operate SMIFs, reflecting the rising emphasis on experiential learning in finance education. These programs typically place students in charge of making investment decisions under faculty supervision, enabling them to develop skills in equity analysis, asset allocation, risk management, and collaborative teamwork. Additionally, many SMIFs foster strong connections between students, alumni, and financial professionals, further enhancing their educational experience and career readiness.

Valparaiso University launched its student-managed investment fund (SMIF) in 2019 with an initial $100,000 endowment allocation and the introduction of a dedicated experiential course, FIN-490: Portfolio Practicum. This initiative was born from student interest in applying academic theory to real-world investment decisions and received strong support from faculty and alumni. In 2023, the fund was renamed the Beacon Fund, a name proposed by students to reflect the program's emphasis on leadership, collaboration, and personal growth.

Since its inception, the Beacon Fund has experienced substantial growth, with assets under management expanding well beyond the original seed capital. This progress reflects not only strong investment performance over time but also the trust placed in students to exercise fiduciary responsibility. Today, the fund serves as a hands-on learning platform where students assume roles such as analysts, team leaders, and portfolio managers, gaining practical experience that prepares them for careers in investment management. The Beacon Fund exemplifies how experiential finance education can empower students to connect theory with practice while building their professional confidence and competence.

However, the rapid advancement of artificial intelligence (AI) has introduced a wave of transformation across the financial services industry, forcing educators and institutions to rethink how future professionals are trained. On the one hand, AI has significantly lowered the cost and barrier to accessing complex financial data, enabling students to conduct real-world analytics, sentiment monitoring, and quantitative screening that once required institutional-level tools (Workday, 2025; Ayomide, 2024). On the other hand, concerns are rising about the disintermediation of traditional entry-level finance roles. Reports increasingly warn that tasks typically performed by junior analysts are now being automated or delegated to AI agents, raising questions about the long-term role of human judgment in investment decision-making (Datarails,

2024; The Economic Times, 2025).

In response to these shifts, Valparaiso University's student-managed investment fund—the Beacon Fund—has emerged as a timely and adaptive educational model. Administered through upper-level finance courses such as FIN-435, the fund blends traditional valuation training with the application of modern AI tools. Students assume progressive roles in a structured investment team and are tasked with managing real endowment capital, a portfolio that has grown substantially since its inception in 2019 to nearly $800,000 in 2025. As of April 2025, the Beacon Fund's growth from the original $100,000 seed capital to nearly $800,000 reflects a combination of investment performance and university-level contributions. In 2023, the university's endowment office granted an additional $400,000 to support the fund's expansion and pedagogical reach. The remaining growth was achieved through student-led portfolio management, including a cumulative portfolio return of over 21% in 2023 alone. This dual-source growth model demonstrates both the students' effectiveness in managing capital and the continued institutional confidence in experiential investment education.

A key innovation in the Beacon Fund is the intentional integration of AI along established platforms like FinChat. This study examines how AI has been used to augment decision-making, the speed and depth of financial analysis while also prompting new discussions around bias, data ethics, and critical interpretation. Students are encouraged not only to use these tools but to question them, building resilience in a world where algorithmic outputs can appear authoritative but may lack contextual nuance.

Drawing on multi-year performance data, classroom observations, and qualitative feedback from students and faculty, this paper explores how real-world decision-making within the Beacon Fund has affected learning outcomes, confidence, and preparedness for post-graduate employment. It also acknowledges ongoing challenges, such as uneven AI literacy among students and the pedagogical tension between automation and human insight. By evaluating these dynamics, the study contributes to a broader understanding of how finance education must evolve to meet the demands of a data-driven, AI-augmented investment landscape.

SMIF Design and Curriculum Structure

The Beacon Fund is embedded in FIN 435: Portfolio Practicum, an upper-level, three-credit experiential course at Valparaiso University designed to prepare students for careers in investment management. This course adopts a progressive structure that simulates real-world

portfolio management responsibilities, empowering students to apply financial theories through live decision-making using real endowment capital. The course not only builds technical and analytical skills but also integrates modern tools, including artificial intelligence (AI), to enrich investment pedagogy in a data-driven era.

Throughout the semester, students rotate through roles such as equity analysts and portfolio managers. Under faculty guidance, they are expected to conduct rigorous equity research, assess risk, and return metrics, monitor macroeconomic indicators, and generate periodic portfolio performance reports. Instruction is structured around key themes in investment theory, valuation methodology, and financial ethics, and is supplemented by Bloomberg Market Concepts (BMC) training and practical applications of AI platforms such as FinChat.

A central feature of the course is the intentional integration of AI into both the research and decision-making processes. Students use AI tools to enhance data screening, financial modeling, and sentiment analysis, while also being challenged to critically evaluate algorithmic output for accuracy, bias, and ethical implications. This dual emphasis—leveraging technology while cultivating human judgment—mirrors current trends in the financial services industry and equips students to be agile, thoughtful professionals.

Table 1: Beacon Fund Semester Workflow (FIN435)

The semester follows a phased structure that reflects a deliberate instructional

Phase	Weeks	Key Activities
1. Foundational Learning	Weeks 1–4	• Course introduction • Self-presentation • Readings from *A Random Walk Down Wall Street* • CFA ethics • SMIF structure orientation
2. Analytical Skill Building	Weeks 5–8	• Valuation methods (DCF, DDG, Ratio Analysis, CAPM) • SEC filings (10-K/10-Q), conference call reviews • Monthly Report #1 • Introduction of AI tools
3. Portfolio Assessment and ESG Integration		• Portfolio construction and evaluation • ESG analysis • Monthly Reports #2 and #3 • Industry/stock research • Integration of sustainability into investment decisions
4. Final Synthesis and Presentation	Weeks 14–17	• Fixed income strategies • Global asset allocation • Monthly Report #4 • Final portfolio report • Guest speaker sessions • End-of-term team presentations

progression seen in Table 1.

Portfolio Strategy and Investment Methodology

The investment policy of the Beacon Fund is centered on achieving long-term capital appreciation through a disciplined, research-driven equity strategy. The fund adopts a moderate risk posture and employs sector and asset-class diversification to enhance risk-adjusted returns. While the fund's primary mandate focuses on capital growth, income-generating securities are also considered as part of a holistic portfolio construction process.

Long-Term Growth Orientation. The fund targets industries with high structural growth potential, including technology, industrials, and healthcare, to deliver superior long-term returns. Investment selection is guided by fundamental analysis, including financial statement evaluation, cash flow forecasting, and competitive positioning. Growth equities are favored when valuations align with forward-looking earnings potential and industry dynamics.

Moderate Risk Tolerance. While pursuing outperformance relative to the S&P 500 benchmark, the fund maintains a moderate risk profile. It includes allocations to dividend-paying, large-cap equities that provide relative downside protection in volatile markets. Holdings such as JPMorgan Chase and Walmart exemplify this balance between growth potential and income stability.

Income Consideration. Although income generation is not the primary objective, the fund does consider dividend yield and payout reliability in its security selection process. For instance, the initiation of dividend payments by Meta Platforms was seen as a value-enhancing development, prompting its inclusion in the portfolio. Additionally, the Vanguard Small Cap ETF (VB), selected for its small-cap exposure, also contributes to income through periodic distributions.

Diversification Strategy. The Beacon Fund emphasizes sectoral and asset-class diversification as a core tenet of portfolio risk management. As documented in the 2023 Annual Report, the acquisition of Waste Management Inc. was pursued to increase exposure to the industrial sector. Similarly, investments in broader-market ETFs, such as the Vanguard Small Cap ETF, provide diversified access to underrepresented segments, including ESG-aligned firms and small-cap equities.

This multi-faceted investment policy reflects a disciplined approach toward building a resilient portfolio that aligns with the fund's educational mission, fiduciary responsibility, and return expectations over an extended investment horizon.

Investment Methodology. The Beacon Fund adopts a fundamentally driven investment methodology that combines bottom-up security analysis with top-down industry insights. Equity selections are based on rigorous evaluations of profitability, free cash flow, valuation multiples (e.g., P/E and PEG ratios), and competitive positioning, supported by models such as DCF, DDM, and relative valuation to identify undervalued opportunities. While long-term capital appreciation remains the fund's primary objective, dividend income is also considered, as reflected in the inclusion of Meta Platforms and the Vanguard Small Cap ETF. Sector and thematic analysis, such as clean energy and technological innovation, inform broader allocation decisions, with holdings like Constellation Energy and GE Vernova exemplifying this approach. Since 2024, ESG considerations have been incorporated into the research process, with a focus on sustainability initiatives and regulatory risks as material factors in long-term value. Risk management is achieved through diversification, monitoring of macroeconomic and firm-specific risks, and indirect hedging via portfolio companies' internal strategies. All investment decisions are conducted through a structured, student-led process that emphasizes research, peer review, and voting, aligning experiential learning with disciplined portfolio management.

Investment Guidelines. The Beacon Fund operates under a clearly defined Investment Policy Statement (IPS) that outlines the parameters within which student managers must operate. Short selling, margin trading, and the use of derivative instruments are strictly prohibited. All investments must be in U.S.-listed equities with high liquidity and market capitalization, and the fund emphasizes a long-term investment horizon, with a typical holding period of at least one year.

While the IPS does not mandate exposure to every GICS sector, students are strongly encouraged to pursue sectoral diversification to mitigate portfolio risk. In practice, the fund typically maintains exposure across at least five major sectors at any given time. Additionally, all investment decisions must be grounded in rigorous research and align with both fiduciary duty and the fund's educational mission. Environmental, Social, and Governance (ESG) factors have also been formally integrated into the evaluation process since 2024, ensuring that investment decisions are consistent with sustainability goals and long-term value creation.

Investment Decision Process. All buy and sell decisions within the Beacon Fund follow a structured, collaborative process designed to simulate professional investment committees. Each sector team, composed of two to three students, conducts in-depth research and valuation modeling to identify investment opportunities or divestiture recommendations. These proposals are then formally presented during weekly meetings, where peers critically review them.

Final decisions are made through a majority vote by all enrolled student members of the investment team. While sector leads function as portfolio managers for their assigned industries and lead the proposal process, they do not have unilateral authority to execute trades. All decisions must align with the fund's Investment Policy Statement (IPS) and receive final approval from the faculty advisor. Once approved, the Valparaiso University Chief Financial Officer (CFO) executes the trades through the designated brokerage account, currently with Merrill Lynch.

This process emphasizes not only financial rigor but also teamwork, communication, and governance, ensuring students develop critical professional skills while maintaining fiduciary discipline.

Fund Management in Summer. During the summer months, when regular classes are not in session, the Beacon Fund transitions to a monitoring-only phase. The broader student investment team makes no buy or sell proposals during this time. However, continuity is maintained through designated student workers, typically returning or advanced students, who are appointed to update monthly performance reports, track key portfolio metrics, and monitor major market or company-specific developments.

These student workers operate under the supervision of the faculty advisor, ensuring that fund documentation remains current and that the portfolio continues to align with the Investment Policy Statement (IPS). In the rare event of a significant market disruption or material corporate action, the faculty advisor may consult with the Chief Financial Officer (CFO) to evaluate whether a limited trade is necessary. Otherwise, the fund remains in a hold position during the summer term. This seasonal structure reinforces both risk management and the fund's educational mission while respecting the academic calendar.

Integration of AI and Traditional Tools

In Phase 2 of the Beacon Fund course, after students mastered Bloomberg-driven valuation techniques (DCF, DDM, and ratio analysis), we introduced "FinChat AI" as the primary AI assistant.

By focusing on a single platform, students gained depth in leveraging conversational AI for investment research, rather than juggling multiple tools. Key applications included:

Equity Screening and Thematic Insights. Students engaged FinChat AI via targeted prompts to sift through SEC filings, earnings call transcripts, and sector news. By asking FinChat to identify companies with accelerating free cash flow in the renewable energy sector or detect shifts in consumer sentiment for retail stocks, they generated watchlists within minutes, expanding beyond their manual Bloomberg screens.

Dynamic Forecast Adjustments. After constructing base-case cash-flow models, teams posed "what-if" scenarios directly to FinChat AI—adjusting revenue growth, margin assumptions, and capital expenditure schedules in real time. The AI generated revised forecasts and sensitivity tables, enabling students compare model iterations side by side and refine their standalone DCF outputs.

Narrative Development and Pitch Refinement. FinChat AI supported students in crafting clear investment theses by synthesizing complex data into concise bullet points. When preparing weekly fund presentations, students fed their fundamental findings into FinChat to generate structured outlines, risk-reward summaries, and counterarguments, enhancing both speed and coherence of their deliverables.

To balance AI reliance, each team conducted an "AI Audit," identifying where FinChat's outputs diverged from manual research. These debriefs sharpened critical thinking around prompt design, data veracity, and inherent biases in pretrained language models. The single-platform focus on FinChat AI fostered deeper expertise in prompt engineering and evaluation of AI-driven insights, reflecting best practices in modern buy-side workflows.

AI's Impact on Financial Education

Based on the working paper (Chien, 2025), AI's impact on financial education can be understood across three key dimensions:

Enhanced Analytical Capabilities. AI-powered platforms equip students with tools that go beyond manual spreadsheet analysis. By leveraging machine learning and natural language

processing, these systems can ingest vast streams of market data, identify relevant patterns, and surface insights that might be overlooked in traditional workflows. As a result, learners develop a deeper understanding of complex financial relationships, such as the interplay between macroeconomic indicators and asset performance, and sharpen their ability to interpret evolving market signals in real time.

Improved Decision Efficiency. One of the hallmarks of AI integration is the automation of routine tasks—data gathering, basic screening, and preliminary risk assessments—freeing students to focus on higher-order decision making. AI-driven recommendation engines propose potential investment strategies, while simulation tools allow for rapid scenario testing. This streamlining not only accelerates the investment process but also builds learners' confidence, as they can iterate through alternatives more swiftly and compare outcomes without being bogged down by manual preparation.

Advanced Presentation and Visualization. Communicating investment ideas effectively is as important as generating them. AI systems automate the creation of polished reports and customizable dashboards, transforming raw data into clear, interactive visual narratives. Students can tailor visualizations—such as dynamic asset-allocation charts or risk-exposure heatmaps—to suit different audiences, whether academic reviewers or prospective stakeholders. This capability not only enhances clarity but also reinforces best practices in financial storytelling and professional reporting.

In short, AI's integration into student-managed investment funds reshapes financial education by bolstering analytical depth, expediting decision workflows, and elevating the quality of presentations. While human judgment remains indispensable, particularly for nuanced strategy formulation, the synergy of AI tools with traditional teaching methods promises a more immersive, practice-oriented learning environment for the next generation of finance professionals.

Ethical Use and Policy Alignment. In accordance with Valparaiso University's Honor Council guidelines on artificial intelligence, the Beacon Fund program adopts a transparent, reflective approach to AI use. Students are permitted to use generative AI tools—such as FinChat or ChatGPT—for data screening, synthesis, and presentation support. However, they must document this usage explicitly in their deliverables through an "AI Audit," which identifies which

portions of the analysis or reports were AI-assisted and how human judgment was applied to validate the results.

This practice not only reinforces responsible AI engagement but also ensures alignment with the university's academic integrity expectations. Faculty reinforce this policy by embedding discussions of AI ethics, bias awareness, and attribution into the curriculum. In doing so, the Beacon Fund serves as a model for responsibly integrating emerging technologies into finance education without compromising rigor or integrity.

Challenges and Limitations

While AI-powered platforms promise to revolutionize financial education, their effectiveness is fundamentally constrained by the quality and transparency of the underlying data and algorithms (Baker and Inventado, 2014). Educational programs often rely on third-party or pre-trained datasets whose provenance and cleaning processes are not fully documented, increasing the risk of spurious model outputs and overfitting during student back tests.

Moreover, many advanced machine-learning techniques—particularly deep-learning models—operate as "black boxes," making it difficult for learners to understand how inputs translate into investment recommendations, thereby undermining critical engagement (Chen et al., 2020). This opacity can undermine pedagogical objectives by encouraging students to accept AI outputs uncritically rather than interrogating underlying assumptions or model biases

Another significant concern is the potential atrophy of foundational analytical skills. By automating routine tasks such as data cleaning, ratio computations, and preliminary screening, AI tools may inadvertently diminish students' hands-on experience with manual modeling and spreadsheet analysis. Research in educational technology warns that overreliance on unvalidated AI outputs can erode critical thinking and reduce learners' ability to formulate and defend original strategies in real-world contexts. Simultaneously, the resource demands of deploying state-of-the-art AI—such as high-performance computing, specialized software licenses, and dedicated IT support—can create uneven access across institutions, potentially exacerbating disparities in learning outcomes (Luckin, 2018).

Ethical and regulatory complexities further complicate the integration of AI into curricula. Historical market data can encode biases, such as sectoral overrepresentation or survivorship effects, which AI models may unintentionally perpetuate, raising fairness and representativeness concerns. In parallel, evolving data-privacy laws and guidelines around algorithmic accountability

impose compliance burdens that educational institutions must proactively address, from anonymizing sensitive information to documenting decision-making processes for audit purposes (Floridi et al., 2018).

Finally, effectively blending AI with traditional pedagogical methods demands a holistic curriculum redesign—one that carefully balances AI-enabled simulations with manual case studies, spreadsheet exercises, and reflective discussions to ensure that technology enhances rather than supplants core learning objectives. By recognizing these interrelated challenges, from data integrity and model interpretability to skill preservation, resource equity, and ethical compliance, educators can develop blended learning frameworks that leverage AI's strengths while safeguarding the cultivation of essential analytical skills and critical thinking in future finance professionals.

Conclusion and Future Directions

The integration of AI into the Valparaiso University Beacon Fund has reshaped the landscape of student-managed investment education. By embedding tools like FinChat into the fund's structured curriculum, the Beacon Fund has not only elevated the analytical and presentation capabilities of its participants but also fostered a new generation of finance students who are more adaptable, data-literate, and critically aware of both the potential and pitfalls of algorithmic decision-making. AI's capacity to streamline research, simulate dynamic financial scenarios, and enhance communication has significantly enriched experiential learning outcomes, helping students bridge the gap between theoretical knowledge and real-world investment practice.

However, the effectiveness of AI-enhanced learning remains contingent upon several unresolved challenges. Issues such as data opacity, over-reliance on automation, skill degradation, and algorithmic bias highlight the need for a more balanced pedagogical design. Furthermore, resource constraints, both technological and instructional, pose limitations to broader implementation across institutions.

Looking ahead, future iterations of the Beacon Fund program should prioritize three strategic directions. First, the development of AI literacy modules is essential, equipping students not only to use AI but to understand and interrogate its outputs with critical rigor. Second, expanding interdisciplinary collaboration with computer science, ethics, and data science departments can foster richer dialogue around responsible AI use in finance. Third, establishing

a transparent framework for "explainable AI" tools can help demystify black-box models and reinforce accountability in student decision-making processes.

In sum, the Beacon Fund stands as a forward-thinking model in financial education. Its ongoing evolution—guided by both technological innovation and commitment to pedagogical integrity—will be crucial in preparing students to lead in an increasingly AI-augmented investment landscape.

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Assigned Versus Self-Selected Groups: A Note on Peer Evaluation in SMIFs

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ABSTRACT

At Butler University, we employ a team-based approach to portfolio management within our SMIF. Thus, a significant component of the course grade is based on peer evaluation scores. In early semesters, teams were assigned, but in more recent semesters, students self-selected their groups. I find that average peer scores are statistically higher when working with "friends," but the difference is small (only around 2.5%). I also find that this difference is primarily a result of students in self-selected groups being less likely to give low peer evaluation scores. I conclude that, at least for the Butler SMIF, this grade difference is acceptable given the potential benefits of working within a known peer group.

Introduction

To mimic common portfolio management practices, many Student Managed Investment Funds (SMIFs) have been structured to incorporate team-based portfolio management. At Butler University (BU), we follow this standard approach, as we segmented students into industry teams based on S&P Sectors. For example, a typical SMIF course section is comprised of 12-16 students, who are split into teams of three or four students each. Teams are then assigned sectors of the S&P500 for which they are responsible. For example, one team may be responsible for Technology and Utilities, while another team could oversee Industrials and Financials. The assignment of sectors is based on submitted student rankings of preference.

Given the applied structure of most SMIF experiences, common assessment tools such as exams and quizzes are much less pronounced. At BU, these pieces are essentially nonexistent within the SMIF course, and grades are based almost exclusively on reports, recommendations,

and presentations made (primarily as a group) throughout the semester. Since these assignments are completed as a team, this structure makes it more difficult to assess individual contributions and therefore also increases the likelihood of the "free rider" problem. To address this concern, a significant component of the course grade (usually 10-15%) is based on peer evaluation scores that are based on feedback from other group members.

While Burchfield and Sappington (1999) find that student evaluations are generally similar to instructor evaluations, they are not without concern. In particular, existing student relationships may cloud the objectivity of assigned team evaluation scores, especially when students are afforded the opportunity to create their own teams (i.e., to work within an established friend group). If this is the case, grading outcomes could be skewed by the team selection process employed. It is this relationship that I intend to examine in the current study.

Group Selection and Peer Evaluation

The BU SMIF commenced operations (within an academic course) in Fall 2007. As expected, the first two years served as a pilot period, allowing ongoing changes to improve the overall course structure before official course approval in Fall 2009. While minor modifications have been made to both course requirements and structure since then, the team-based management approach has remained intact since official inception, along with the corresponding grade component for peer evaluations.

Initially, sector teams were created (and assigned) by the professor. This approach to team selection continued until spring 2017, effectively providing eight years (i.e., Fall 2009 to Spring 2017) of data on the team scoring of "randomly" assigned teams. However, Seunghoo, et al (2018) note that group performance outcomes are generally improved when you work with friends. So, in Fall 2017 (and beyond), the team selection approach was modified to afford students the opportunity to self-select into sector teams instead of being assigned. Following this change, I therefore have access to team scoring data for seven additional years (i.e., Fall 2017 through Spring 2024).

Previous research examines the relationship between friendship and peer evaluation scores. For example, Brown and Knight (1994) find that people tend to evaluate their friends higher, and Cedarblom and Lounsbury (1980) report that a majority of experiment participants believed that friendship bias impacted (positively) their peer evaluations. Given these results, the ongoing concern within the BU SMIF is that the change in the team selection approach could

artificially inflate team evaluation scores. Therefore, I compare team evaluation scores between the two periods to determine if (and to what extent) the average team evaluation score increases when self-selected teams are employed.

Results

I begin by collecting team evaluation scores (based on a standard 100-point grading scale) from Fall 2009 to Spring 2024. Each semester represents a unique group of students, so I have thirty separate sections in the underlying data. As noted above, the team selection approach changed from professor assignment to self-selection in Fall 2017. To denote to which group an observation belongs, I create a binary variable equal to 1 if the student is assigned to a group and 0 otherwise (i.e., if the group is self-selected). I identify these groups as *Assigned* and *Selected*, respectively. Given the time periods examined, I thus have sixteen sections within the group *Assigned* and fourteen within the group *Selected*.

Exhibit 1 provides general sample statistics for the entire dataset. For example, the average team evaluation score (i.e., *Grade*) given by students is 93.2%, which is a low A by most scoring systems. The median (and mode) is 95%, which is not unexpected given the propensity to pick numbers at key intervals (i.e., round-number bias). These values also indicate that the average may be driven downward by a small number of relatively low scores. For example, the minimum score across the sample is 20%, which was given to a severely underperforming group member within an assigned group.

Exhibit 1: Sample Statistics

The following exhibit provides general sample statistics for the complete data set. *Grade* is the average peer evaluation score that a student receives from their team. *Assigned* is a binary variable equal to 1 if the student is assigned to a group and 0 otherwise (i.e., if the group is self-selected). *Fall* is a binary variable equal to 1 if the team is managing in the Fall semester and 0 otherwise (i.e., if the class occurs in the Spring).

Variable	N	Mean	Std. Dev.	Median	Min	Max
Grade	419	93.20%	7.73	95.00%	20.00%	100.00%
Assigned	419	0.55	0.50	1.00	0.00	1.00
Fall	419	0.57	0.50	1.00	0.00	1.00

Exhibit 1 also shows that *Assigned* groups comprise 55% of the sample, as expected given the extra year of data in this subsample. Also, observations in the *Fall* semester account for 57% of the sample, indicating that section sizes tend to be slightly larger in the Fall than in the Spring. Given that *Assigned* and *Fall* are both binary variables, the additional statistics in Table 1 are less relevant.

Turning to the key question, I next explore average grades within each subsample (i.e., within *Assigned* versus *Selected*). As reported in Exhibit 2, the average team evaluation score is 92.14% when the professor assigns groups, and 94.50% when teams are self-selected. This difference is statistically significant (p = .0018), but the question is whether it is actually "meaningful." In particular, if the evaluation score represents 10% of the overall course grade and it is higher by 2.36% on average, then the overall average course grade goes up by only 0.236%, which is typically not enough to shift a student's overall grade significantly.

Exhibit 2: Average Grade by Group Selection Approach

The following exhibit presents average peer evaluation scores for teams assigned by the professor (i.e., *Assigned*) versus self-selected by students (i.e., *Selected*). These averages are also broken out by Fall and Spring sections. The exhibit also provides the *t*-stat and *p*-value from a standard difference of means test between the *Assigned* and *Selected* groups.

Variable	Assigned	Selected	t-stat
Grade	92.14 (n=232)	94.50 (n=187)	3.14 (p = .0018)
Grade (Fall only)	92.43 (n=145)	94.84 (n=92)	2.34 (p=.0020)
Grade (Spring only)	91.66 (n=87)	94.18 (n=95)	2.24 (p=.0266)

To confirm whether this difference in grade is consistent across the academic calendar, I also segment team evaluation scores by semester (i.e., *Fall* and *Spring*). Within the BU SMIF, as I suspect at many other institutions as well, there are several prerequisites to participate in the SMIF course, thus most students in the class are Seniors. So, I am particularly interested in whether the difference in grades is less pronounced in the Spring, as graduating students have less incentive to "stay friends." The average grade (unreported) for the *Fall* is 92.97%, while for the *Spring* it is 93.37%. However, this difference is not statistically significant (p=.6051). To ensure that the earlier results are robust, in Exhibit 2, I also review average grades by semester and by team selection

approach, finding average team scores remain significantly higher (at least statistically) across both semesters when teams are self-selected. However, once again, the differences remain meaningfully small.

To further explore the differences in average grades based on the team selection approach, I also examine the distribution of average grades by percentile, which I report in Exhibit 3. Across the top half (and even the top three quarters) of the distribution, the grades are almost identical whether teams are assigned or self-selected. However, in the bottom decile, average grades begin to diverge, as I find that students in assigned groups are more likely to give lower peer evaluation scores. For example, at the 10th percentile, the average grade within assigned groups is 82% versus 88% for self-selected groups. Moving down the distribution, this difference becomes even more pronounced (e.g., 55% vs. 80% at the 1st percentile).

Exhibit 3: Detailed Grade Distribution

The following exhibit provides distributions for peer evaluation grades by percentile, separated by whether teams were assigned by the professor (i.e., *Assigned*) or self-selected by students (i.e., *Selected*).

	Assigned	Selected
90th percentile	99%	100%
75th percentile	98%	98%
50th percentile	95%	95%
25th percentile	90%	92%
10th percentile	82%	88%
5th percentile	77%	84%
1st percentile	55%	80%
0 percentile (i.e., min)	20%	70%
Mean	92.15%	94.50%
Deviation	9.20%	5.10%
Skewness	-3.64	-1.32
Kurtosis	20.76	2.58

A larger proportion of grades fall more than two standard deviations below the mean in the *Assigned* category. Specifically, among self-selected groups, only 1 student received a grade that was more than two standard deviations below the mean (representing 0.5% of the population). In contrast, 9 students (or 4% of the population) in the *Assigned* category received

grades more than two standard deviations below. The prevalence of lower scores within assigned groups is also confirmed by the more negative skewness (and, to a lesser extent, the more positive kurtosis) value in the *Assigned* category. Thus, the lower average peer grade within groups that are assigned is primarily due to an increased willingness to give lower scores to nonperforming group members. Alternatively, this outcome could result from positive peer pressure within self-selected groups, as students are less likely to "free-ride" on their friends, leading to fewer underperformers (and therefore fewer low scores). It is difficult to separate these impacts with any certainty.

While there is no strong indication of overlapping influence, to explore robustness, I next turn to a multiple regression framework, presented in Exhibit 4. The dependent variable is the average peer evaluation score (i.e., *Grade*). The independent variables are *Assigned* and *Fall*, which are previously defined. Further, I also add a binary variable to identify COVID semesters, as the different learning environment could impact average peer scores. The results from column 1 confirm those reported in Exhibit 1 with regard to the average differences between *Assigned* and *Selected*. Neither *Fall* nor *COVID* is significant, and in all cases the significance of *Assigned* remains similar.

Exhibit 4: Regression Results

The following exhibit provides the results of a standard linear regression. The dependent variable is the average peer evaluation grade that a student receives (i.e., *Grade*). The independent variables are each binary variable. *Assigned* is equal to 1 if the student is assigned to a group and 0 otherwise (i.e., if the group is self-selected). *Fall* is a binary variable equal to 1 if the team is managing during the Fall semester and 0 otherwise (i.e., if the class occurs in the Spring). *Covid* is equal to 1 if the class took place between Spring 2020 and Spring 2021, 0 otherwise.

	Grade	***Grade***	***Grade***
	[1]	[2]	[3]
Intercept	94.51	94.15	94.24
	(<.0001)	(<.0001)	(<.0001)
Assigned	-2.36	-2.46	-3.14
	(.0018)	(.0013)	(.0018)
Fall		0.72	0.70
		(.3424)	(.3607)
Covid			-0.40
			(.7751)
N	418	418	418
Adj. R^2	.0208	.0205	.0184

While the overall results suggest that the average grade in a self-selected group environment is higher, the salient question is really whether this slight increase in grade is acceptable given the potential benefits that Burchfield and Sappington (1999) note are achieved by working within a known friend group. Moreover, a related question is whether this higher average grade is acceptable, given that teams composed of an established friend group are likely to have more established meeting times and fewer team dynamics issues. These are the questions each SMIF advisor will need to answer as they determine how best to approach team formation in their respective environments. However, for BU, the perceived benefits of self-selected groups are deemed to significantly outweigh the small incremental grade inflation that results.

Discussion

Consistent with prior research, peer evaluation scores are higher, on average, when working with friends. However, the absolute difference in average grades, at least for my limited sample, is small. At Butler, this small difference could be driven by the University's relative size. For example, even though Butler's total enrollment is near 5,000 students, there may be only +/- 75 finance majors in any given grade level. Thus, even when groups are assigned, there is likely to be at least a passing relationship with other students on the team. So, to gauge the impact, I would like to see this study replicated across a larger, more diverse set of institutions.

A second factor that may drive some of the minor differences is that students who enroll in the SMIF effectively self-select into the course. These students, on average, tend to be genuinely interested in the topic area and are generally among the higher-GPA students, particularly given that the SMIF is known to carry a higher workload than most courses. Thus, no matter what type of group assignment approach is used, I expect better outcomes than one might find in a class that contains a more diverse set of learners, and therefore a smaller difference in average grades. Again, applying this study at a university with a different structure (e.g., a club rather than a class) could yield more robust conclusions.

Other possibilities for future studies revolve around more in-depth data collection methods. For example, pre-course surveys on the level of friendship a student has with other team members could add an interesting component, as could a collection of overall course grades versus the peer evaluation scores received. Given the tendency to focus on letter grades on a 100-point scale, it may also be worth testing an alternative 5-point rating scale. Again, the current study is meant to provide a simple comparison as a first step in a faculty member's decision on how to employ teams and evaluations within a SMIF course, but much future work is needed.

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A Student Managed Investment Fund the Las Vegas Way: Putting Our Chips on the Table

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ABSTRACT

Student Managed Investment Fund (SMIF) programs have become increasingly popular at higher education institutions worldwide. In this paper, we discuss how SMIFs provide an experiential learning environment that allows in-depth research, the analysis of different investments, enhancement of public speaking, and the development of critical thinking skills. We then present the University of Nevada, Las Vegas (UNLV) SMIF case to offer alternative ideas for SMIFs and discuss the evolution of the fund and lessons learned from UNLV's SMIFs' over the first 14 years. We intend to foster discussion about SMIFs to improve both the UNLV SMIF and others.

Introduction

A Student Managed Investment Fund (SMIF) is a unique academic experience that allows students to learn the application of stock selection and portfolio management in a real-world environment using real money. Management of the fund requires students to research markets and investments, collaborate with other student analysts, present findings, ask questions, and make investment decisions. Most other academic curricula focus primarily on learning theory and concepts to establish a foundation of knowledge for students, which they then apply after graduation in a career endeavor. In contrast, a SMIF is a unique experience where theory and practice are put directly into action. While students learn from their research and analysis, they also learn through class participation and from peer collaboration. A well-executed SMIF experience can accelerate obtaining investment management skills that might otherwise be difficult for the student to gain on their own. In recent decades, SMIF programs have become increasingly popular at higher education institutions worldwide. Although distinct variations exist across SMIF offerings they essentially share the same goals, to provide students with experiential learning, develop students' financial management skills, and enhance teamwork. Survey studies of SMIFs including best practices and challenges include Lawrence (2008), Mallett, et al. (2010), and Abukari, et al. (2021).

Objectives and Background

The SMIF experiential learning environment enables in-depth research and analysis of different investments, enhances public speaking skills, and develops critical thinking through rigorous question-and answer-sessions. Furthermore, a SMIF can serve as a capstone experience for Business Finance Majors to reinforce the concepts and tools learned in prior finance classes and to provide a valuable introduction to professional life through guest speakers from diverse sectors of the Finance Industry. There is also an opportunity for students to earn Bloomberg or FactSet certifications and explore various Professional Licenses. For the University, a SMIF creates a fundraising platform for the University Endowment, both to establish the fund and to raise additional funds to create a formal finance lab.

In accordance with the CFA Institute's best practices regarding fiduciary relationships, a SMIF should have an Investment Policy Statement (IPS) that serves as the foundational guide defining investment objectives, restrictions, risk tolerance, and investment program preferences. In the IPS, investable parameters should be clearly defined. For example, what are the investment

limitations based on corporate listing domicile (domestic or international), are the use of exchange-traded funds (ETFs) allowed, are levered or derivative products allowed, what is the minimum market capitalization for an underlying investment, and are alternative investments, such as, precious metals and cryptocurrencies considered investable assets? It is also important to have diversification guidelines in place that pertain to limits on the percentage holding of a single security or within a particular economic sector. Through the operation of the SMIF students can be exposed to the practice of rebalancing and maintaining proper diversification.

Next, we discuss how these objectives and goals are incorporated into the University of Nevada, Las Vegas (UNLV) Student Managed Investment Fund (SMIF).

The UNLV Student Managed Investment Fund (SMIF)

Student analysts formally named the UNLV SMIF the Rebel Investment Group (RIG) Fund, based on the UNLV official athletics moniker, the Rebels. The RIG Fund received its initial funding of $100,000 on the March 31, 2011. Professor Michael Sullivan is the fund director and has been a Finance Professor at UNLV since 1991.

The first order of business for RIG student analysts, in collaboration with the fund director, was to develop an “Investment Philosophy” to serve as a grounding and framework for fund decisions. More specifically, the RIG Fund uses a rule-based approach that mandates diversification and practices based on an Investment Policy Statement (IPS). Fund decisions are made with a mid- to long-term investment horizon and the recognition that equity prices reflect a company's future. The specific goals of the UNLV SMIF are to provide students with a collaborative, experiential learning environment that empowers them to have the confidence to make sound investment decisions.

The UNLV RIG Fund is offered as a for-credit Finance elective, with enrollment capped at 20 students, resulting in heightened competition for spots in the class. Therefore, to gain admittance, prospective student analysts fill out an application and interview with the fund director. There are two overriding criteria for student selection to the class. First consideration is what the student adds to the team. Students are evaluated based on their background, perceived work ethic, future career aspirations, and potential to contribute to a collaborative learning environment. The goal in RIG Fund selection is to arrange a diverse set of students who can bring various experiences and perspectives to fund management. Furthermore, student selection aims to find students who are comfortable expressing their ideas and are also good at receiving

feedback and considering opposing viewpoints.

Secondly, and an equally important consideration, is what skills and knowledge this SMIF experience might provide the student to enhance their personal portfolio of knowledge. Students are told they are expected to be self-starters, show initiative, and work both independently and in teams. The fund director conducts the interview process over a two-week period, scoring each candidate on a ten-point system. Although there are obvious grey areas in this process, the fund director has found that in most semesters, selection decisions become clearer by the conclusion of the interview process.

Once the student analyst class is assembled, optional pre-class preparation suggestions are provided. For example, the fall semester 2025 RIG class was provided with the following pre-class preparation suggestions (Figure 1).

Figure 1: Sample of Pre-Class Preparation Suggestions to Student Analysts

Dear Student Analysts,

I am worried that perhaps some of you are bored this summer so I thought I would provide some interesting podcasts, readings, and other RIG Prep work. Of course, this is optional and only intended for your pleasure.

Suggested Podcasts:
(1) Bloomberg Surveillance - a current investment news podcast (twice daily),
(2) Rational Reminder - a weekly educational podcast (the Feb 27 episode with Hank Bessembinder article attached and the March 27 episode with Scott Cederburg were exceptional)!

Suggested Books:
(1) The Psychology of Money: Timeless lessons on wealth, greed, and happiness, 2020, by Morgan Housel

(2) Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications, 2020, by John J Murphy

Database:

(1) FactSet: This is the data source we use to find information on stocks and the market. If anyone wants early logon privileges send me an email and I will request.

Enjoy your summer and I am looking forward to seeing everyone this fall.

Best,
Dr. Sullivan

SMIFs that span more than a single semester are shown to outperform the single semester version (see Barnes and Buller, 2021). As a comparison, the UNLV RIG Fund does allow strong performers to take the course for credit the following semester. However, this two-semester option is limited to ten repeating students to allow new students to take this high-demand class. It has also been found that this option provides strong motivation and allows returning student analysts to train new student analysts.

The fund has been managed by UNLV students during the spring and fall semesters every year without interruption since the Spring Semester of 2011. The SMIFs at some Universities liquidate holdings at the end of each semester and park funds in a money market, enabling each subsequent class to begin by making independent investment decisions. At UNLV, the decision was made to keep funds invested between semesters for two reasons. First, because markets can fluctuate dramatically in the short term, if funds are liquidated at the end of each semester, students may be incentivized to act more as short-term traders than investors and become overly fixated on momentum and recent performance. The UNLV RIG Fund aims to encourage students to identify investments that may provide strong returns over a mid-term to long-term horizon (2-10 years) based upon strong company fundamentals. The thought is that a mid-term to long-term horizon better correlates with most students future career and investment endeavors. Second, by keeping all holdings invested from the prior semester, each new class of student analysts must evaluate all current holdings and analyze the level of diversification across sectors. Students are tasked to rebalance a portfolio to meet IPS diversification criteria.

The UNLV RIG Fund had been offered in the summer term, but due to budgetary issues after Covid, the summer class was discontinued. The fund director was initially concerned that there would be no active oversight of the RIG Fund over the summer. However, over these few

years, the RIG Fund performance has not been adversely affected, perhaps because the fund is forced to be adequately diversified across all eleven sectors of the S&P 500 and thought is given to diversifying within each sector.

Structure and Management of UNLV's SMIF

A SMIF can be administered in different forms (for example, see Boughton and Jackson, 2019). One option is to form the fund as a student club treating it as an extracurricular activity. Another option is to integrate the concept as an elective course within the finance curriculum. The argument made at UNLV is that for the fund experience to be most beneficial to students, they must be continuously engaged, which is best achieved by having the fund operate as a formal class. Having the SMIF as a class enhances the environment for experiential learning, so that students can best develop the skills outlined in the prior section. This level of experiential learning is challenging to achieve in a club setting, primarily because it is hard to hold students accountable and keep them engaged. For example, Barnes and Buller (2021) compare 20 SMIFs comprised of both forms, clubs and courses. They find SMIFs having a course structure outperform those with a club structure.

As with other SMIFs, many UNLV students are not adequately prepared upon entering the class (see DeBoeuf, 2020). However, the UNLV experience, similar to Knewtson et. al. (2020), shows that when students are given a high degree of responsibility, they mostly rise to the challenge. This appears to be a transformative experience for many students, moving from a passive to an active learning environment. The hope is that this will help students transition to their post-graduation work. In this regard, the fund director has heard from many recent graduates that this transformative experience was one of their most important college experiences.

After determining a guiding investment philosophy, the UNLV RIG Fund student analysts and the RIG Fund director hammered out an Investment Policy Statement.

Investment Policy Statement (IPS)

The UNLV RIG Fund Investment Policy Statement (IPS) is a formal document that outlines the goals, risk tolerance, and guidelines for managing the fund. The rationale for creating and maintaining an IPS lies in its ability to provide structure, discipline, and clarity to the investment

process. The IPS in place for the RIG Fund outlines the following guidelines:
The purpose and objective of the RIG Fund

- The goals of the RIG Fund
- Investment guidelines
  - What investments are allowed in the RIG Fund
  - What investments are not allowed in the RIG Fund
  - The RIG Fund parameters
  - The RIG Fund Risk guidelines
  - The RIG Fund risk management guardrails
  - Transaction guidelines

The current UNLV RIG Fund Investment Policy Statement is presented in Figure 2.

Figure 2: UNLV RIG Fund Investment Policy Statement

REBEL INVESTMENT GROUP (RIG) INVESTMENT POLICY STATEMENT

Rebel Investment Group (RIG) is open to qualified senior-level undergraduate students. The objective of RIG is to provide students the opportunity to obtain experience in security analysis and portfolio management utilizing a real-dollar portfolio.

In order to be accepted as a participant in RIG, the prerequisite course (FIN307) must be taken. Student applicants are interviewed and approved by the Program Director as well as current members of RIG.

RIG has a fiduciary responsibility to implement multiple levels of investment checks and balances to actively monitor the portfolio. The guidelines below explain acceptable types of securities, specify diversification strategies, and describe various security measures that are integral to the program.

OBJECTIVES

RIG was created to enhance UNLV students' education by providing hands-on investment experience.

The primary objective for the fund managed by RIG is growth of capital. Diversification guidelines are outlined below.

RIG's goal is to outperform the following benchmarks based on total return: The S&P 500 Index when compared to our equity securities and Barclays Capital Aggregate Bond Index when compared to our fixed income securities.

INVESTMENT GUIDELINES

RIG FUNDS MAY BE INVESTED IN:

* Common stocks of companies with market capitalizations of at least $300 million and are listed on one of the three major U.S. exchanges (NASDAQ, NYSE and AMEX)
* Government and investment grade corporate bonds
* Cash equivalents
* Exchange-traded funds (ETFs) (only non-derivative structured ETFs)

RIG FUNDS ARE EXCLUDED FROM BEING INVESTED IN:

* Mutual funds
* Preferred Stock
* Short sales
* Futures, options, and other derivatives
* Foreign currencies

RIG FUNDS CONSTRAINTS:

* Time horizon is mid- to long-term
* Fund has no liquidity needs
* Fund is not subject to taxes

RISK CHARACTERISTICS

* The Portfolio Beta is not to exceed 1.5
* Bonds should be rated BBB or higher by Moody's or S&P

DIVERSIFICATION & ALLOCATION GUIDELINES

* 70 – 100% invested in equity securities
* 0 – 30% invested in fixed income securities
* 0 – 10% invested in precious metals
* No more than 5% may be invested initially in any one company
* If holding hits 8% of portfolio a mandatory pitch is required with a stop-loss price
* No more than 30% may be invested in any one sector
* No more than 50% may be invested in small capitalization stocks
* The RIG portfolio will be rebalanced based on asset allocation guidelines using current S&P Sector Weighting as a Guide
* Sector under/over-weight decisions are made subsequent to each semesters' macro review. Under/Over-weight decisions are made based on a 75% vote.
* If a sector is fully allocated a position must be sold prior to creation of a new position
* The Fund will have a cash position of at least 5% at the close of each semester

TRANSACTION GUIDELINES

* Fund management decisions supported by a 75% affirmative vote Blind Voting
* Allocation guidelines can be changed with a supermajority vote, which requires an 85% affirmative vote
* All RIG actions are subject to veto by the Program Director
* Stated Quorum: 75% (15 Analysts out of 20 must be in attendance to vote)
* Any bond falling below investment grade is to be sold

Student Class Structure

At the beginning of every semester, a new class of twenty RIG Fund student analysts is organized into five groups of four students each. Student analyst groups are charged with overseeing 2-3 sectors of the eleven sectors in the S&P 500, ensuring all eleven sectors are

assigned. See Figure 3 for S&P 500 State Street Global Advisor sector weights. Student analysts are responsible for the current investment positions and subsequent buy and sell decisions within their assigned sectors for the entire semester. Student analysts are not allowed to pitch investments outside their assigned sector.

Figure 3: S&P 500 Sector Weights January 2025 S&P 500 Market Sectors

The S&P 500 is a stock market index made up of the common stock of 500 United States Large-Cap corporations. The index is owned and maintained by Standard & Poor's, a division of McGraw-Hill. All of the common stocks in the index trade on the two largest US stock markets, the New York Stock Exchange and NASDAQ.

The S&P 500 is made up of eleven sectors, which are then composed of various industry groups. Many index funds and exchange-traded funds track the performance of the S&P 500 or its sectors by holding the same stocks as the index or its sectors, in the same proportions, and thus attempting to mimic its performance. An example of these index funds is SPDRs. SPDR funds are managed by State Street Global Advisors (SSgA). Informally, they are also known as Spyders or Spiders. SPDR is a trademark of Standard and Poor's Financial Services LLC. The SPDR for the S&P 500 as a whole, trades under the symbol SPX.

Additionally, the S&P 500 index is often used as a baseline level of performance against which mutual funds and other asset managers' performance is measured.

Following are the Eleven S&P 500 Sectors.

1. Consumer Discretionary

11.34% is the estimate weight of the index components in the S&P 500.

SPDR - XLY

About the Sector:
Industries such as automobiles and components, consumer durables, apparel, hotels, restaurants, leisure, media, and retailing are primarily represented in this group.

Sector Rotation: Time in economic cycle to invest is late stage of recession.

2. Consumer Staples

5.52% is the estimate weight of the index components in the S&P 500.

SPDR - XLP

About the Sector:
The companies in this sector are primarily involved in the development and production of consumer products that cover food and drug retailing, beverages, food products, tobacco, household products, and personal products.

Sector Rotation: Time in economic cycle to invest is late stage of expansion.

3. Energy

3.16% is the estimate weight of the index components in the S&P 500. SPDR - XLE

About the Sector:
Energy companies in this Index primarily develop and produce crude oil and natural gas and provide drilling and other energy-related services.

Sector Rotation: Time in economic cycle to invest is late stage of expansion.

4. Financials

13.78% is the estimate weight of the index components in the S&P 500. SPDR -

XLF

About the Sector:
A wide array of diversified financial service firms are featured in this sector with business lines ranging from investment management to commercial and investment banking.

Sector Rotation: Time in economic cycle to invest is late stage of recession.

5. Health Care

10.18% is the estimate weight of the index components in the S&P 500. SPDR -

XLV

About the Sector:
Companies in this sector primarily include health care equipment and supplies, health care providers and services, biotechnology, and pharmaceuticals industries.

Sector Rotation: Time in economic cycle to invest is late stage of expansion.

6. Industrials

7.26% is the estimate weight of the index components in the S&P 500. SPDR - XLI

About the Sector:

in the Index include aerospace and defense, building products, construction and engineering, electrical equipment, conglomerates, machinery, commercial services and supplies, air freight and logistics, airlines, marine, road and rail, and transportation infrastructure companies.

Sector Rotation: Time in economic cycle to invest is mid-term of expansion.

7. Materials

1.67% is the estimate weight of the index components in the S&P 500. SPDR - XLB

About the Sector:
This Index is primarily composed of companies involved in such industries as chemicals, construction materials, containers and packaging, metals and mining, and paper and forest products.

Sector Rotation: Time in economic cycle to invest is mid-term of expansion.

8. Information Technology

31.95% is the estimate weight of the index components in the S&P 500. SPDR -

XLK

About the Sector:
Stocks primarily covering products developed by internet software and service companies, IT consulting services, semiconductor equipment and products, computers and peripherals, diversified telecommunication services and wireless telecommunication services are included in this Index.

Sector Rotation: Time in economic cycle to invest is early stage of expansion.

9. Utilities

2.51% is the estimate weight of the index components in the S&P 500. SPDR - XLU

About the Sector:
The Utilities Index primarily provides companies involved in water and electrical power and natural gas distribution industries.

Sector Rotation: Time in economic cycle to invest is early stage of recession.

10. Communications Services

9.37% is the estimate weight of the index components in the S&P 500. SPDR - XTL

About the Sector:
The Telecommunications Services Sector contains companies that provide

communications services primarily through a fixed-line, cellular, wireless, high bandwidth and/or fiber optic cable network.

Sector Rotation: Time in economic cycle to invest is early stage of expansion.

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11. Real Estate

2.10% is the estimate weight of the index components in the S&P 500. SPDR -

RWX

About the Sector:
The Real Estate Select Sector includes securities of companies from the following industries: real estate management and development and REITs.

Sector Rotation: Time in economic cycle to invest is late stage of recession.

The typical RIG Fund class has ten returning student analysts and ten first-time student analysts. Therefore, each group will typically have two returning and two first-time analysts. The returning analysts act to mentor the first-time analysts. The entire four-person group makes the first stock pitch. This introduces student analysts to working with all members of their group, serves as training for first-time analysts, and eases them into performing formal stock pitches. The first pitch is designed as a sell pitch to free up investable funds. Also, a sell pitch eases students into their research, since sells are of current positions, and therefore, a known, limited stock universe. The subsequent three stock pitches are done in rotating pairs, such that each student has the opportunity to work with each of the other group members. The fund director has found over time that performing stock pitches in pairs eases the pressure of presenting and helps students become comfortable in a team environment. Also, the fund director feels students are, on average, better prepared to work in pairs due to the support for teamwork.

In addition to sector-holding responsibilities, every student has an assigned individual role. These roles are presented with descriptions in Figure 4. The purpose of these individual roles is to give students greater responsibility for managing the fund. Students learn to depend on one another for information and advice, and, more importantly, to take responsibility for their part of this team. In week three of the semester, the following student analyst roles make presentations. Domestic and international economists present their views on the current economic environment. The technical analysts present the technical metrics they will use to evaluate stock trends, to aid in determining entry and exit points for trades. Statisticians and fundamental analysts present current RIG Fund statistics for individual holdings, by sector, and

for the overall fund. Sector analysts report major recent news on current holdings.

Figure 4: UNLV RIG Fund Individual Student Analysts Roles

Description of Officer Positions Chief Administrators (2 positions)

This position is principally responsible for the management of weekly Rebel Investment Group (RIG) meetings. The Chief Administrators schedules weekly presentations and pitches and facilitates the flow of each session. Additionally, the Chief Administrators overseas preparation of the Semester Report (each student will have an assigned task for preparing Semester the Report).

Operations Managers (3 positions)

The Operations Managers are responsible for conducting pitch votes and recording information on company pitches (company name, ticker, buy/sell, market/limit, current price, class vote), and the preparation of the official Minutes of each meeting. The Operations Managers assist the Chief Administrators with overseeing the preparation of Semester Report.

Statisticians (3 positions)

The Statisticians will record trades and other transactions of RIG to include in the Report of Fund Performance. Trade records are maintained on RIG Position Excel File. In addition, they will maintain records on our Google Drive. These records include any paperwork generated by RIG, including copies of all stock pitches, the agenda for each meeting, Economist Reports, Fundamental Analysts Reports, Technical Analysts Reports, Analyst Reports, and Reports of Fund Performance.

Fundamental Analyst (1 position)

The Fundamental Analyst maintains Fund records. Fund records include descriptive statistical information: beta, dividend yield, market capitalization, P/E (TTM and forward), PEG, EPS, and price-to-book. Averages will be calculated for each sector and for the overall portfolio. This data is presented in the Semester Report.

Technology Officer (FactSet, Google Drive) (1 position)

The Technology Officers assist all RIG Analyst with FactSet and Google Drive questions and maintains the RIG Google Drive.

Technical Analysts (2 positions)

The Technical Analyst provides a technical opinion on every security presented, with recommendations of technical entry and exit points. The process involves the examination of past price movements in order to forecast future price movements. In addition, the Technical Analyst will provide a brief overview of Technical Analysis and a general market overview in Week 3.

Domestic Economists (2 positions)

The Domestic Economists will present an overview of US economic conditions in Week 3 of the semester. The Domestic Economists will also discuss significant US economic events that may affect our portfolio during the course of the semester.

International Economists (1 position)

The International Economists will present an overview of international economic conditions in Week 3 of the semester, with the focus on events that directly affect the US financial markets. The International Economists will also discuss significant international events that affect the US financial markets during the course of the semester.

Sector Analysts (5 positions)

Sector Analysts have specific responsibilities to watch current holdings and watch list investments. This includes a daily watch of news, analyzing earning's reports and listening to conference calls. A stock position must be discussed whenever the price moves more than 3% in one day.

After group formation, student analysts familiarize themselves with legacy holdings in their assigned sectors and verify that sector weights and individual holdings fall within the

diversification parameters defined by the IPS. The overriding goal is for the UNLV RIG Fund to be fully invested, contingent on a 5% cash position, with sector allocations approximating the S&P 500 sector weights by the end of the semester. After a stock buy or sell pitch and an extensive class discussion, the class votes, according to the IPS guidelines, on whether the pitch action is implemented.

Typical Semester Class Scheme - Breakdown of 16-week semester

The first three weeks are designated for Professor lectures on class setup and fund goals, a day of FactSet training, and relevant student job presentations (e.g., domestic and international economy, current RIG Fund statistics, technical analysis, etc.).

The next twelve weeks include twenty stock pitches, two per day, to cover 10 weeks, and four outside speakers to cover two weeks. A typical stock pitch day starts with each group's Sector Analyst reviewing any major news on any RIG Fund holdings in their assigned sectors. Each stock pitch is limited to twenty minutes, followed by a Technical Analyst review, Q&A, and a class vote on the action. Speakers include Fund Managers visiting Las Vegas and local Money Managers, who are often interested in hiring students for internships or career jobs. The Professor utilizes contacts with the Las Vegas CFA Society to bring in many of these speakers. Also, past RIG graduates often come back to speak to the class, sharing their professional journey. The first day of the final week is spent with each group presenting Sector Reports that highlight their sector's buys and sells, as well as overall sector performance and statistics. On the final day, the Chief Administrators and Operations Managers present the Semester Report, reviewing the semester's activities and overall RIG Fund performance.

The fund director provides immediate feedback within 24 hours, helping students improve, since their pitch is still fresh in their minds. Students seem to react better if the feedback is kept in positive terms. Feedback categories include "What I liked about your pitch" and "What you can do to improve your pitch."

Stock Pitch Procedures and Pitch Rubric

Student analysts pitch their investment ideas to the class, including their buy, sell, or hold recommendations, followed by questions and answers. After this investment pitch, a technical analyst (individual role) provides their view on whether the investment is currently technically in

an overbought or oversold position and recommends the use of a market or limit order. The student analyst presenters consider these recommendations and make their final pitch decision. A blind vote follows, requiring a 75% affirmative majority to execute the recommended trade. The RIG Fund director has veto power over any trades that violate the IPS guidelines.

A general pitch rubric is provided, with emphasis determined by the sector and investment being pitched. As part of the class's experiential nature, the Professor's feedback is provided after every pitch to provide student analysts with the tools necessary for improvement and growth. The pitch rubric is shown in Figure 5.

Figure 5: UNLV RIG Fund Pitch Rubric

Company Background: A rundown of the company's sector and division, current events, history, growth vs value, current leadership, and plan for the future.

Financial Analysis: Students include analysis of the company's income statement, balance sheet, and cash flow statement and present key observations.

Valuation Analysis: Students conduct price multiples comparisons, compare analysts' reports, and are encouraged to create a Discounted Cash Flow (DCF) Model.

SWOT Analysis or Porter's Five Forces: Students must consider the company's long-term competitive positioning, different risk factors, and macroeconomic situation.

Conference Call: Student's listen to the last quarter's conference call and report the highlights related to past company performance and future guidance.

Management Team Review: If relevant, report on top management changes or discuss celebrity CEOs

Recap: Summarize both the drivers and concerns of the company.
Recommendation: Buy, Sell, or Hold and whether to enter a market or limit order.

Semester Report

At the end of the school semester, a final semester report is presented and submitted. The semester report summarizes all investment activities of the RIG Fund during the semester. In the report, each group details the positions they initially held in their sector, subsequent buys and sells during the semester, and their end-of-the-semester positions. These sector holdings are combined to form the overall holdings of the RIG Fund. Specific sector and overall fund performance are presented and compared to sector index performance and overall market performance. Overall, RIG Fund statistics include entry price, current price, percentage return, stock and sector weights, and stock and sector betas.

Example Stock Pitch

An example stock pitch demonstrates the use of experiential learning to develop student skills to analyze a corporation (see attachment titled "Meta Buy Additional Shares Pitch"). Near the end of the Fall Semester of 2024, RIG students presented a pitch to purchase additional shares of Meta Platform, Incorporated common stock. This pitch shows how student pitches evolved over the semester, becoming increasingly polished, complete, and on-point.

This stock pitch starts with company background information, and since this was a purchase of additional shares to a current RIG position, a holding overview was provided. The students then reviewed the most current conference call and the company's financials, including pertinent observations from analyzing the income statement, balance sheet, and cash flow statement. Next, the students reviewed their valuation analysis and discussed professional analysts' consensus price targets and recommendations. As a base case, the RIG students compared Meta to Alphabet, Incorporated (Google). Students further reviewed the Meta SWOT Analysis, Management Team, liquidity position, leverage, and recent acquisitions.

The RIG students finished the recap discussing main drivers and concerns and highlighting their recommendations. Questions and answers followed, and a class of Technical Analysts gave their view of the Meta purchase from a technical perspective and whether they believed Meta was currently overvalued or undervalued. The class finished with a blind vote in which more than the required 75% voted in favor of the additional purchase of Meta shares.

Reflections and Course Evolution

As the Professor charged with designing and teaching this class, I had to figure out the best way to teach a true Experiential Learning-based class. It took me a while to give up control and allow the students to take full responsibility for the fund. Now, the only thing I dictate is the diversification metrics, following S&P sector weights and adhering to the IPS. The IPS, or the RIG Fund investment rules, have been updated throughout the 14-year history of the fund.

The following are some significant examples. We found that we could not buy preferred stock for the fund because it was considered a derivative security based on accompanying conversion features. We added a provision that, if any single holding reaches 8% of fund value, a mandatory pitch is required, and if not sold, a stop-loss price must be set. This was the result of a favorably timed purchase of Nvidia common stock. Another significant change was the introduction of a student-blind vote for buy-sell decisions. Prior to the blind vote requirement, students too often seemed inclined to vote based on relationship rather than merit.

I have found that allowing students the freedom to make buy-and-sell decisions creates a sense of ownership. I feel that, as a consequence, students have become more motivated and dedicated to managing the fund. I was also surprised to find that students were more risk-averse than expected. The RIG Fund portfolio beta had remained below 1.0 until I recently persuaded the students to take on greater risk. Overall, students are mostly more committed than expected. They seem to relish the responsibility of managing actual dollars.

UNLV RIG Fund Historic Performance

UNLV RIG Fund performance over a ten-year horizon (see Table 1) shows that the RIG Fund has outperformed the S&P 500 benchmark over the 1-, 3-, 5-, and 10-year periods. This is impressive, considering that, as reported by S&P Dow Jones Indices' SPIVA (S&P Indices Versus Active), professionally managed funds mostly underperform the S&P 500. Based on December 31, 2024 data as reported by SPIVA, only 34.76% of funds outperformed the S&P 500 for the 1-year period, only 15.04% outperformed over the 3-year period, only 23.74% outperformed over the 5-year period, and only 15.66% outperformed over the 10-year period. Other RIG Fund statistics include a portfolio beta of 1.1495 and a Sharpe Ratio of 1.7538. The RIG Fund's average annual alpha, demonstrating outperformance of the S&P 500, is 1.14% per year, and the annualized standard deviation is 12.70%, which is considered typical for a large-cap portfolio. RIG Fund

student analysts understand that ample diversification and a few fortunate investments drive these favorable RIG Fund results. The RIG Fund director emphasizes the importance of being humble and realistic about RIG Fund results.

Table 1: UNLV RIG Fund 1, 3, 5, 10 Year Performance Compared to the S&P 500

The annualized UNLV RIG Fund returns compared to the annualized S&P 500 Index returns for the 1-, 3-, 5-, and 10-year periods. Returns as reported by Fidelity Investments as of January 31, 2025.

	1 Year	3 Year	5 Year	10 Year
UNLV SMIF	29.39%	13.09%	16.25%	14.15%
S&P 500 Index	26.38%	11.91%	15.17%	13.76%

UNLV SMIF Current Beta = 1.1495
Sharpe Ratio = 1.7539
Average Annual Alpha = 1.14%
Average Annualized Standard Deviation = 12.70%

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Appendix 1: Meta Buy Additional Shares Pitch

Company Background

Meta Reality Labs

Founded: February 4, 2004

Headquartered: Menlo Park, CA.

Software/Consulting & Communications Sector

Consumer Content Providers Industry

Meta Platforms, Inc. develops social media technologies to help people connect, share, and build communities. Operating through Apps like (Facebook, Instagram, Messenger, WhatsApp) and Reality Labs. Reality Labs focuses on augmented and virtual reality products that enhance user experiences. Meta's brand is to facilitate social interaction and business growth.

Holdings Overview

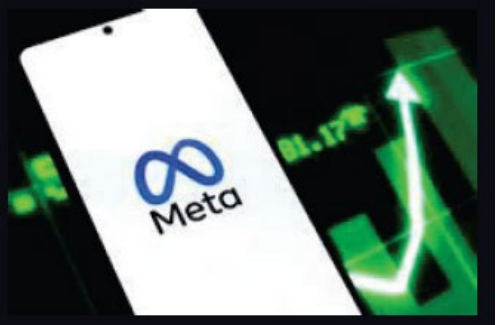
- Bought 15 shares of META on for an average cost basis of $107.61
- Total cost = $1,614.20

Buy 5 shares of META at $567.58

- Total Value = $2,837

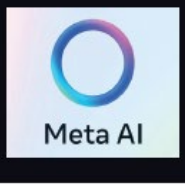
Total Gain in META = $7,262.8 (450%)

META makes up 2% of Portfolio



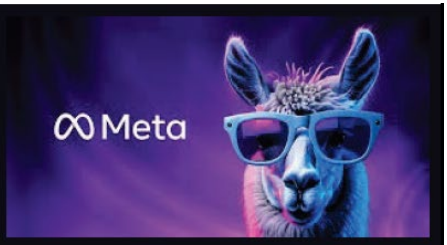
Company History

- Meta was originally known as Facebook (FB) until June 9, 2022
- Meta was down for all of 2022 (Jan. 7, 2022 $331)(Jan. 6, 2023 $130) due to sell offs, FB reporting a drop off of 1 million users, and competition with other social media apps.
- Mid 2023 CEO Mark Z. laid off around 10,600 workers. Focusing less attention on projects and more on AI.
- April 2024 saw a drop 1st Qtr. profit doubled with revenue up 27%, however there was a $5billion projection on AI investments.



Conference Call

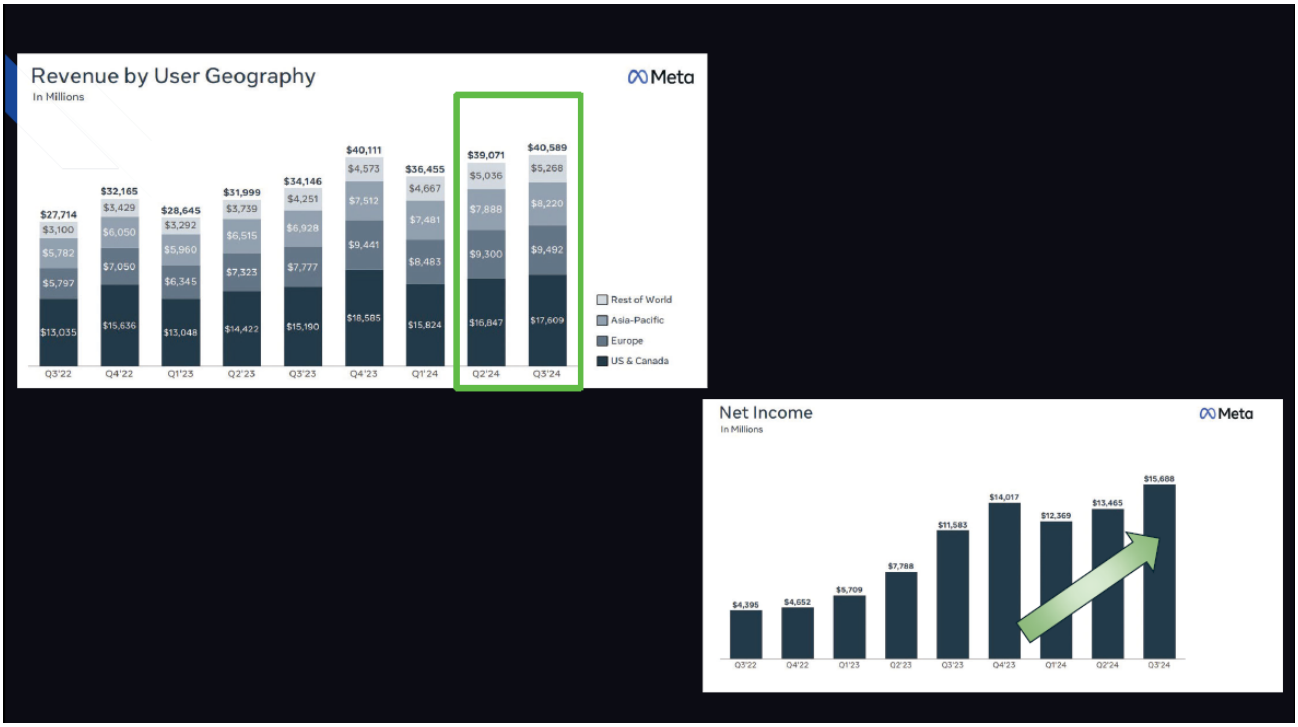
- Meta's revenue reached $40.6 billion up 19% from previous year and beating analyst expectations of $40.2 billion according to FactSet.
- 3.2 billion daily uses across Meta's apps. Llama 3.2 was just launched with Llama 4 expected to come out next yr.
- Reality labs made $270 million in revenue, up 29%, however they saw $4.4 billion in operating cost.
- AI-generated ad performance improved by 7% in conversions, benefiting advertisers.
- Challenges could be EU and US legal developments.



Income Statement

	JUN '24 LTM	DEC '23	DEC '22	DEC '21
Sales	149.78	134.90	116.61	117.93
Gross Income	122.06	108.90	92.86	95.28
EBIT (Operating Income)	60.65	50.20	33.56	46.75
Pretax Income	60.12	47.43	28.82	47.28
Consolidated Net Income	51.43	39.10	23.20	39.37
Net Income	51.43	39.10	23.20	39.37
Per Share				
EPS (recurring)	20.20	15.79	9.78	13.77
EPS (basic)	20.13	15.19	8.63	13.99
EPS (diluted)	19.59	14.87	8.59	13.77
Earnings Persistence	-	85.10	83.39	80.90
Dividends per Share	1.00	0.00	0.00	0.00
EBITDA				
EBITDA	73.69	61.38	42.24	54.72
EBIT	60.65	50.20	33.56	46.75
Depreciation & Amortization Exp...	13.04	11.18	8.69	7.97

- Increased Sales up 14.88
- Gross Income up 13.16
- Operating Income up 10.45
- Net Income up 12.33
- Introduced Dividend 1.00
  - Divd. yield .34%
- EBITDA up 12.31



Balance Sheet

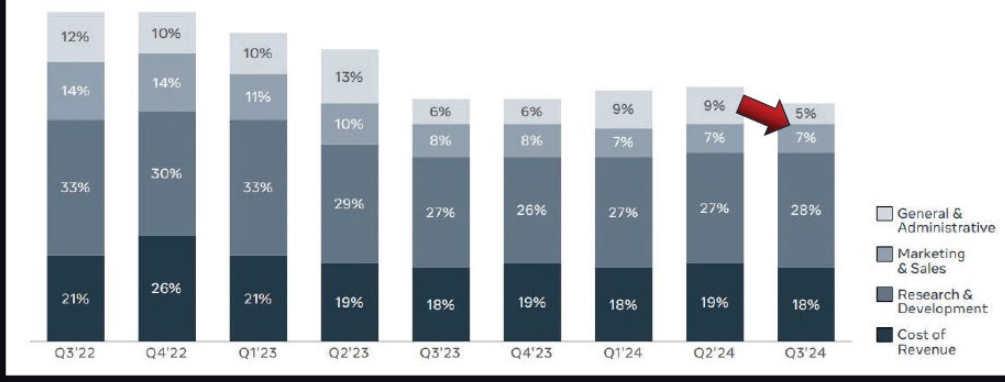
Assets (USD MM)

Fiscal calendar quarter	Q2 (Jun-30-24)	Q1 (Mar-31-24)	Q4 (Dec-31-23)	Q3 (Sep-30-23)	Q2 (Jun-30-23)
Current assets					
Cash & short-term investments	58,180	58,204	65,502	61,275	53,611
Receivables	14,505	13,430	16,169	12,944	12,511
Inventories	0	0	0	0	0
Current assets - other	3,746	3,696	3,694	4,159	3,438
Current assets total	**76,431**	**75,330**	**85,365**	**78,378**	**69,560**
Non-current assets					
Property plant & equipment (net)	117,017	112,463	109,881	104,805	100,904
Intangible assets	21,438	21,483	21,442	21,681	21,515
Non-current assets - other	36,790	35,051	34,377	33,091	36,224
Non-current assets total	**153,807**	**147,514**	**144,258**	**137,896**	**137,128**
Assets total	**230,238**	**222,844**	**229,623**	**216,274**	**206,688**
Current liabilities total	27,004	28,101	31,960	30,531	29,921
Long-term liabilities total	46,471	45,214	44,495	42,870	42,734
Liabilities total	73,475	73,315	76,455	73,401	72,655
Shareholder's equity total	156,763	149,529	153,168	142,873	134,033
Liabilities & shareholder's equity total	230,238	222,844	229,623	216,274	206,688

- **Increase in Assets: Cash, Current Assets, & Property Plant**
- **Decrease in Current Liabilities**
- **Increase in Long-Term Liab.**

Expenses as a Percentage of Revenue

Meta



Segment Results

In Millions, Except Percentages

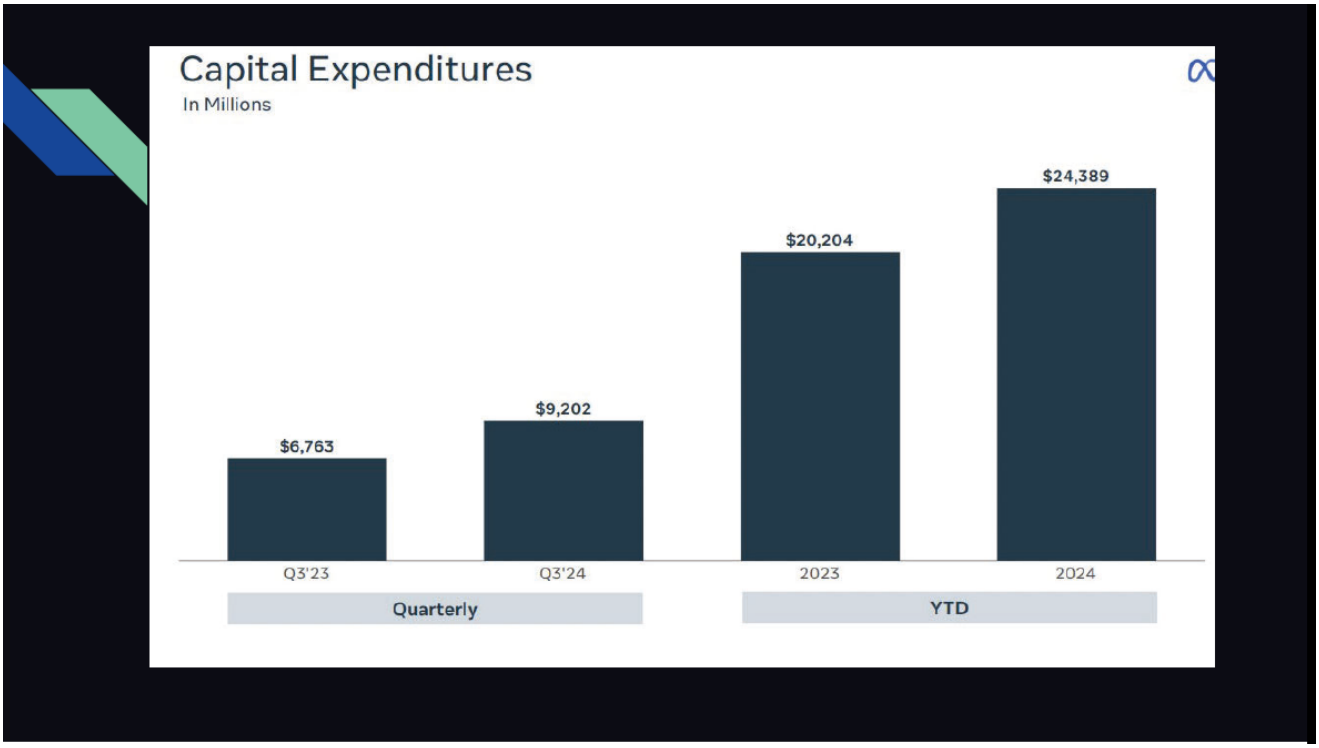
Meta

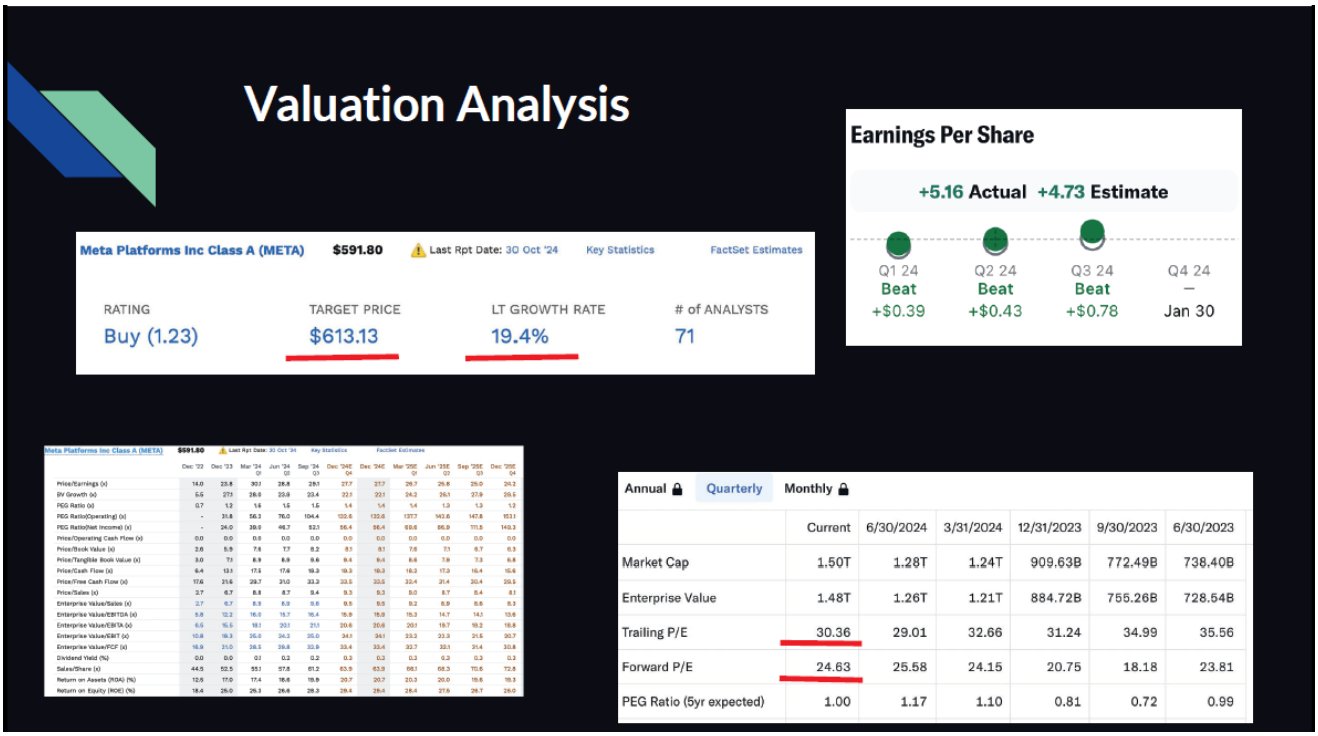
	Q3'22	Q4'22	Q1'23	Q2'23	Q3'23	Q4'23	Q1'24	Q2'24	Q3'24
Advertising	$ 27,237	$ 31,254	$ 28,101	$ 31,498	$ 33,643	$ 38,706	$ 35,635	$ 38,329	$ 39,885
Other	192	184	205	225	293	334	380	389	434
Family of Apps Revenue	**27,429**	**31,438**	**28,306**	**31,723**	**33,936**	**39,040**	**36,015**	**38,718**	**40,319**
Reality Labs Revenue	**285**	**727**	**339**	**276**	**210**	**1,071**	**440**	**353**	**270**
Total Revenue	**$ 27,714**	**$ 32,165**	**$ 28,645**	**$ 31,999**	**$ 34,146**	**$ 40,111**	**$ 36,455**	**$ 39,071**	**$ 40,589**
Family of Apps Operating Income	$ 9,336	$ 10,678	$ 11,219	$ 13,131	$ 17,490	$ 21,030	$ 17,664	$ 19,335	$ 21,778
Reality Labs Operating (Loss)	(3,672)	(4,279)	(3,992)	(3,739)	(3,742)	(4,646)	(3,846)	(4,488)	(4,428)
Total Income from Operations	**$ 5,664**	**$ 6,399**	**$ 7,227**	**$ 9,392**	**$ 13,748**	**$ 16,384**	**$ 13,818**	**$ 14,847**	**$ 17,350**
Operating Margin	**20 %**	**20 %**	**25 %**	**29 %**	**40 %**	**41 %**	**38 %**	**38 %**	**43 %**

Cash Flow Statement

Cash Flow (M)

	Dec '22	Dec '23	Mar '24 Q1	Jun '24 Q2	Sep '24 Q3	Dec '24E Q4
Capital Expenditures	31,431	27,266	6,400	8,173	8,258	12,481
Guidance (Low)	32,000	27,000	-	-	-	-
Guidance (High)	33,000	29,000	-	-	-	-
Free Cash Flow	18,439	43,010	12,531	10,898	12,196	12,106
Cash Flow from Operations	50,475	71,113	19,246	19,370	22,393	24,544
Cash Flow from Investing	-28,970	-24,495	-8,734	-8,298	-11,149	-12,275
Cash Flow from Financing	-22,135	-19,500	-19,767	-11,178	-7,786	-7,727


Capital Expenditures
In Millions
$6,763
$9,202
$20,204
$24,389
Q3'23
Q3'24
2023
2024
Quarterly
YTD

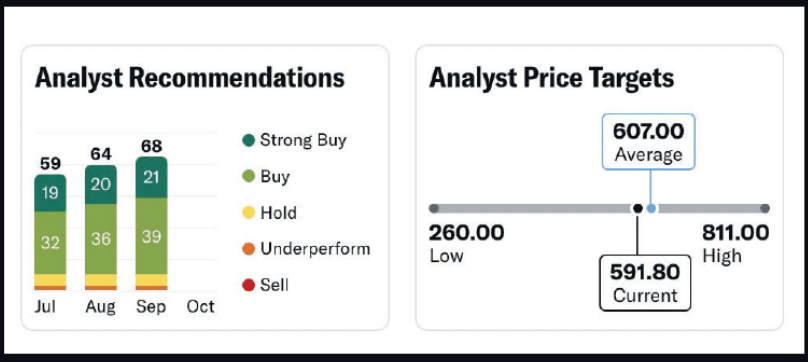

Valuation Analysis
Meta Platforms Inc Class A (META) $591.80 Last Rpt Date: 30 Oct '24 Key Statistics FactSet Estimates
RATING
Buy (1.23)
TARGET PRICE
$613.13
LT GROWTH RATE
19.4%
# of ANALYSTS
71
Earnings Per Share
+5.16 Actual +4.73 Estimate
Q1 24 Beat +$0.39
Q2 24 Beat +$0.43
Q3 24 Beat +$0.78
Q4 24 – Jan 30
Annual Quarterly Monthly
Current 6/30/2024 3/31/2024 12/31/2023 9/30/2023 6/30/2023
Market Cap 1.50T 1.28T 1.24T 909.63B 772.49B 738.40B
Enterprise Value 1.48T 1.26T 1.21T 884.72B 755.26B 728.54B
Trailing P/E 30.36 29.01 32.66 31.24 34.99 35.56
Forward P/E 24.63 25.58 24.15 20.75 18.18 23.81
PEG Ratio (5yr expected) 1.00 1.17 1.10 0.81 0.72 0.99

Valuation Analysis - Continued

Meta Platforms Inc Class A (META) $591.80 Last Rpt Date: 30 Oct '24 Key Statistics FactSet Estimates

	Dec '22	Dec '23	Mar '24 Q1	Jun '24 Q2	Sep '24 Q3	Dec '24E Q4	Dec '24E	Mar '25E Q1	Jun '25E Q2	Sep '25E Q3	Dec '25E Q4
Price/Earnings (x)	14.0	23.8	30.1	28.8	29.1	27.7	27.7	26.7	25.8	25.0	24.2
BV Growth (x)	5.5	27.1	28.0	23.9	23.4	22.1	22.1	24.2	26.1	27.9	29.5
PEG Ratio (x)	0.7	1.2	1.6	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.2
PEG Ratio(Operating) (x)	-	31.8	56.2	76.0	104.4	132.6	132.6	137.7	142.6	147.8	153.1
PEG Ratio(Net Income) (x)	-	24.0	39.0	46.7	52.1	56.4	56.4	69.6	86.9	111.5	149.3
Price/Operating Cash Flow (x)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Price/Book Value (x)	2.6	5.9	7.6	7.7	8.2	8.1	8.1	7.6	7.1	6.7	6.3
Price/Tangible Book Value (x)	3.0	7.1	8.9	8.9	9.6	9.4	9.4	8.6	7.9	7.3	6.8
Price/Cash Flow (x)	6.4	13.1	17.5	17.6	19.3	19.3	19.3	18.2	17.3	16.4	15.6
Price/Free Cash Flow (x)	17.6	21.6	29.7	31.0	33.3	33.5	33.5	32.4	31.4	30.4	29.5
Price/Sales (x)	2.7	6.7	8.8	8.7	9.4	9.3	9.3	9.0	8.7	8.4	8.1
Enterprise Value/Sales (x)	2.7	6.7	8.9	8.9	9.6	9.5	9.5	9.2	8.9	8.6	8.3
Enterprise Value/EBITDA (x)	5.8	12.2	16.0	15.7	16.4	15.9	15.9	15.3	14.7	14.1	13.6
Enterprise Value/EBITA (x)	6.5	15.5	18.1	20.1	21.1	20.6	20.6	20.1	19.7	19.2	18.8
Enterprise Value/EBIT (x)	10.8	19.3	25.0	24.2	25.0	24.1	24.1	23.2	22.3	21.5	20.7
Enterprise Value/FCF (x)	16.9	21.0	28.5	29.8	32.9	33.4	33.4	32.7	32.1	31.4	30.8
Dividend Yield (%)	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Sales/Share (x)	44.5	52.5	55.1	57.8	61.2	63.9	63.9	66.1	68.3	70.6	72.8
Return on Assets (ROA) (%)	12.5	17.0	17.4	18.6	19.9	20.7	20.7	20.3	20.0	19.6	19.3
Return on Equity (ROE) (%)	18.4	25.0	25.3	26.6	28.3	29.4	29.4	28.4	27.5	26.7	26.0

Valuation Analysis - Analysts Recommendations

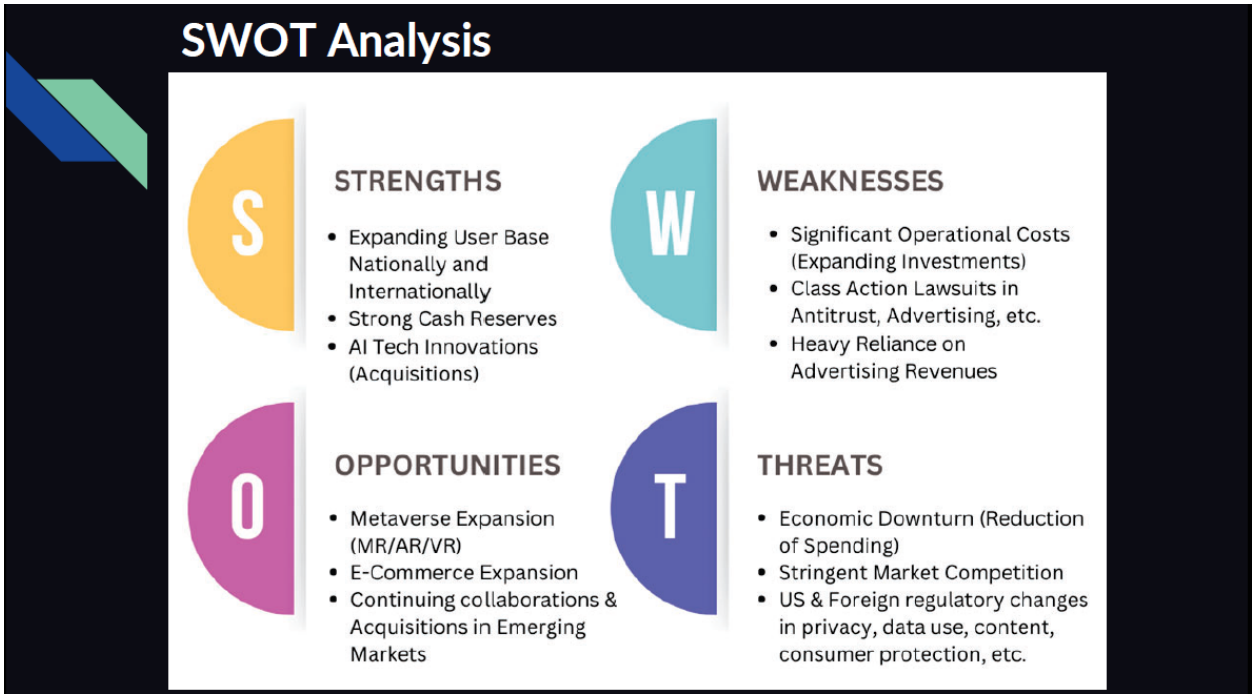


Price History (1 year chart)

Current Price: $567.58

Competitor Graph Comparison

Google Current Price: $172. 65


SWOT Analysis
S
STRENGTHS
• Expanding User Base Nationally and Internationally
• Strong Cash Reserves
• AI Tech Innovations (Acquisitions)
W
WEAKNESSES
• Significant Operational Costs (Expanding Investments)
• Class Action Lawsuits in Antitrust, Advertising, etc.
• Heavy Reliance on Advertising Revenues
O
OPPORTUNITIES
• Metaverse Expansion (MR/AR/VR)
• E-Commerce Expansion
• Continuing collaborations & Acquisitions in Emerging Markets
T
THREATS
• Economic Downturn (Reduction of Spending)
• Stringent Market Competition
• US & Foreign regulatory changes in privacy, data use, content, consumer protection, etc.


Management Team Review
Mark Zuckerberg
CEO & Founder & Chairman
Javier Olivan
COO
Susan Li
CFO
Jennifer Newstead
Chief Legal Officer
+ 10 Board of Directors

Liquidity

The following table presents our cash flows (in millions):

	Year Ended December 31, 2023	2022	2021
Net cash provided by operating activities	$ 71,113	$ 50,475	$ 57,683
Net cash used in investing activities	$ (24,495)	$ (28,970)	$ (7,570)
Net cash used in financing activities	$ (19,500)	$ (22,136)	$ (50,728)

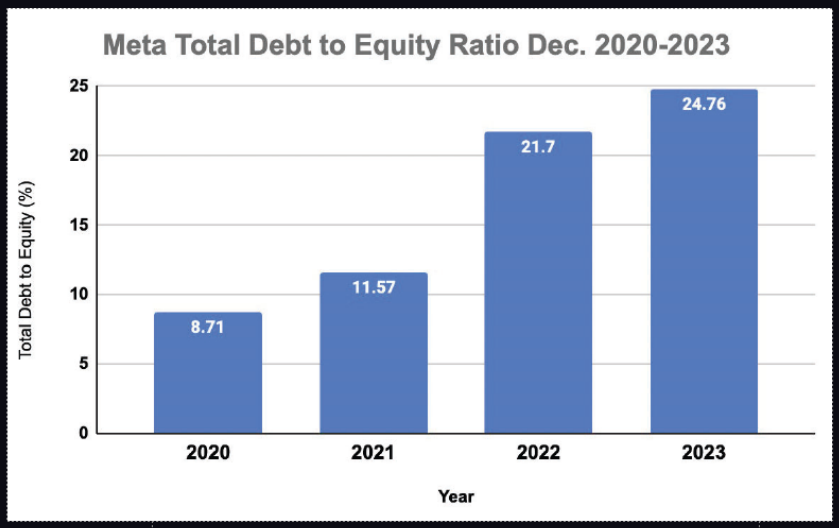
The following is a reconciliation of FCF to the most comparable GAAP measure, net cash provided by operating activities (in millions):

	Year Ended December 31, 2023	2022	2021
Net cash provided by operating activities	$ 71,113	$ 50,475	$ 57,683
Purchases of property and equipment, net	(27,045)	(31,186)	(18,567)
Principal payments on finance leases	(1,058)	(850)	(677)
Free cash flow	$ 43,010	$ 18,439	$ 38,439

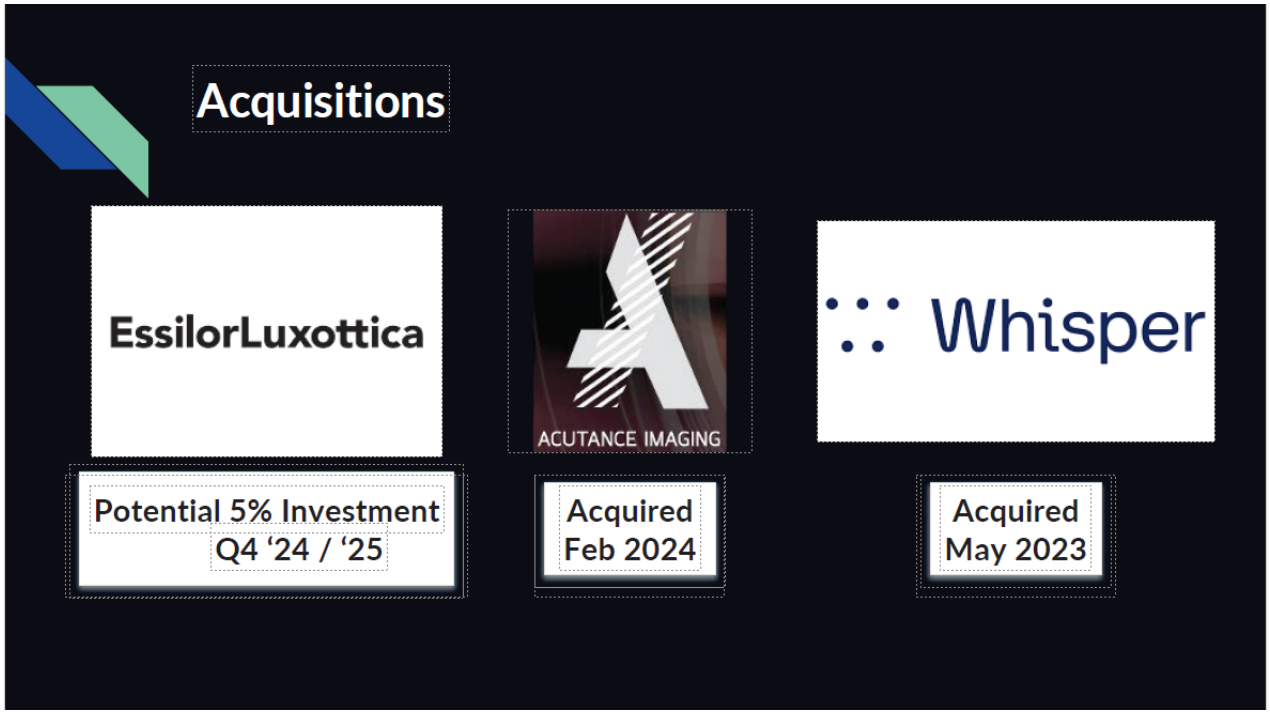
Current Ratio as of December 31, 2023, stood at 2.67, which was an increase from EOY 2022, but significant decreases from previous years (5.05 in 2020, 3.15 in 2021) - RELATIVELY STRONG

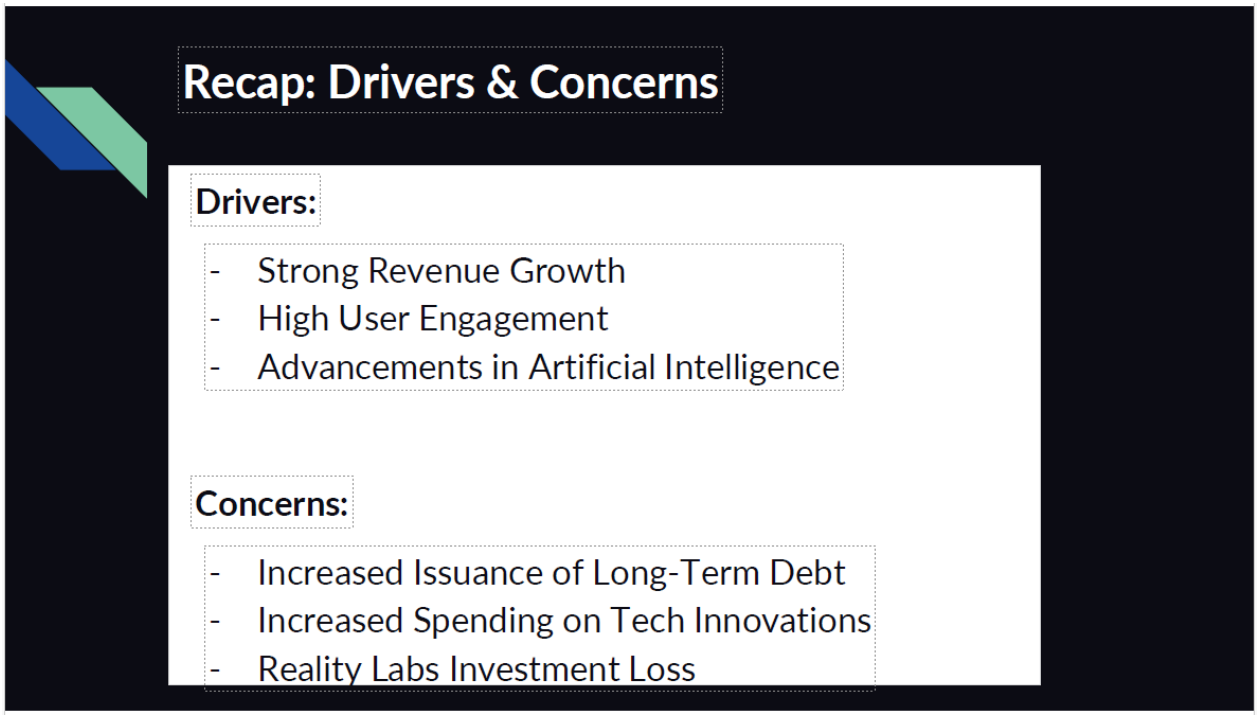
Leverage

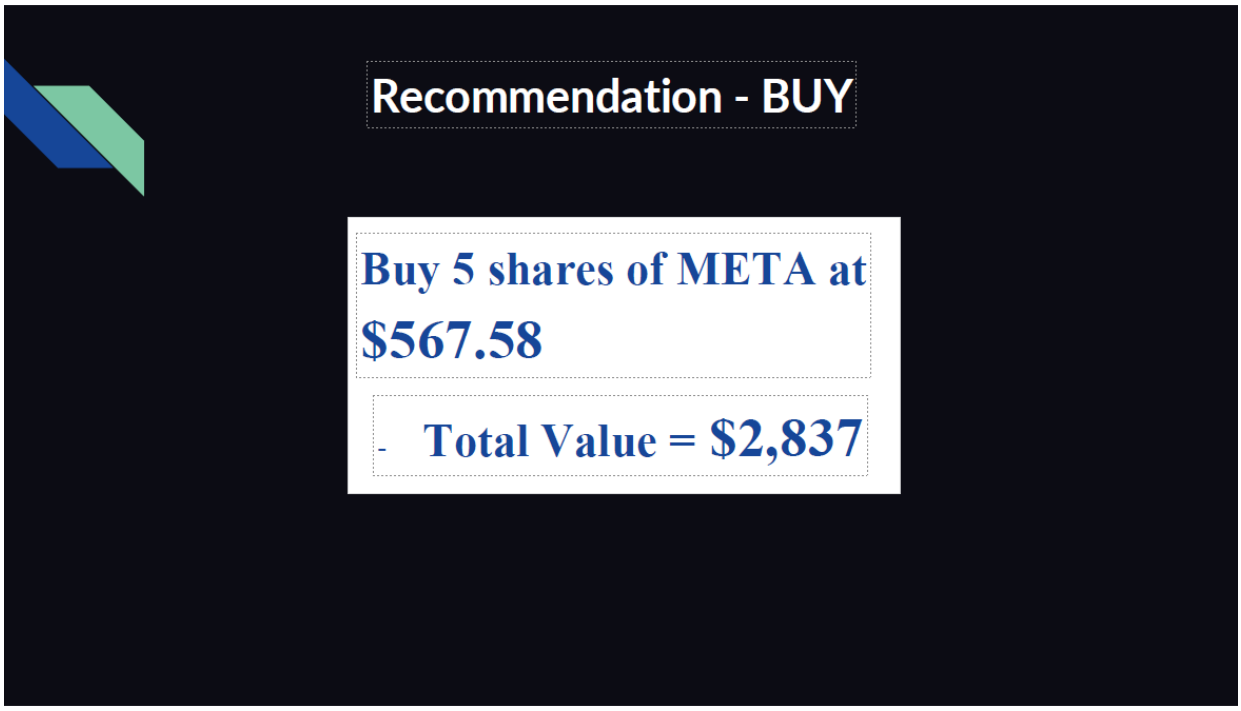
Long-term debt was $28.82 billion as of September 30, 2024, compared to $18.50 billion on December 31,2023.



Data extracted from Factset Meta Financials & Q3 Financial


Acquisitions
EssilorLuxottica
ACUTANCE IMAGING
Whisper
Potential 5% Investment
Q4 '24 / '25
Acquired
Feb 2024
Acquired
May 2023


Recap: Drivers & Concerns
Drivers:
- Strong Revenue Growth
- High User Engagement
- Advancements in Artificial Intelligence
Concerns:
- Increased Issuance of Long-Term Debt
- Increased Spending on Tech Innovations
- Reality Labs Investment Loss


Recommendation - BUY
Buy 5 shares of META at $567.58
- Total Value = $2,837


THE END - Sources
https://my.apps.factset.com/workstation/navigator/company-security/snapshot/META-US
https://www.forbes.com/sites/lindseychoo/2024/10/30/meta-earnings-stock-ad-business-outlook/
https://www.cnn.com/2024/04/25/investing/meta-stock-plunges-ai-spending/index.html
https://www.fool.com/investing/2024/08/05/heres-meta-platforms-stock-464-since-2022-not-ai/#:~:text=NASDAQ%3A%20META&text=CEO%20Mark%20Zuckerberg%20had%20to,from%20its%20all%2Dtime%20high.
https://www.theguardian.com/technology/2022/feb/03/why-facebook-shares-are-in-freefall-meta-zuckerberg
https://www.theguardian.com/technology/2022/oct/26/meta-earnings-report-facebook-stocks
https://investor.fb.com/leadership-and-governance/
https://investor.fb.com/financials/
https://observer.com/2024/01/meta-facebook-top-executives/

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Reinventing the SMIF: A Portal-Centered, AI-Assisted Model for Finance Education

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ABSTRACT

Student-managed investment funds (SMIFs) excel at experiential learning but must adapt to faster, data-rich markets and to a generation that learns and collaborates on screens. We introduce a Learning Management System (LMS)–integrated SMIF course portal that turns the process into a straightforward classroom workflow—from idea generation to valuation to risk review to a documented decision. AI-assisted notes and summaries support (not supplant) analysis. The portal is pedagogical: it provides live portfolio views, select market and stock notes, buy/sell limits, exhibits, and guides a weekly workflow. It does not replace professional terminals or execute trades; it complements in-lab use of Bloomberg, FactSet, or Capital IQ by making students' reasoning and collaboration observable outside lab hours. Core analyses—DCF modeling, factor analysis, and P&L attribution, and mean-variance optimization—remain central; the course portal makes outputs visible, searchable, and accountable. We outline the workflow, deliverables, and grading aimed at strengthening student skills for dynamic markets, offering a replicable template that meets the needs of screen-native learners where they are.

Introduction

Over the past three decades, student-managed investment funds (SMIFs) have become premier experiential offerings in business schools. These funds enable students to apply valuation, security analysis, and portfolio theory to real markets by managing real money.

Traditionally, SMIFs emphasize group stock pitches and presentations that build analytical and communication skills. Even though the presentation-driven pitch model requires solid valuation and modeling, it still does not consistently make the investment process itself—moving from idea generation to valuation to risk review to a documented decision—teachable and assessable within a single semester.

Traditional university finance education usually starts with large lectures and multiple-choice exams emphasizing theory. Although these foundational lectures may be necessary, they provide limited practice with Excel, basic statistics, and programming (Python). Evidence from higher education shows that active-learning approaches, in which students do and reason rather than only listen, improve performance and reduce failure rates compared with traditional lectures, and the benefits are broad and robust (Chi & Wylie, 2014; Freeman et al., 2014; Prince, 2004). Consequently, many graduates leave without the practical skills they need on day one.

Admittedly, no single course can cover all the practical skills students need. The presentation-driven SMIF model does a lot right; it builds communication, requires rigorous valuation and modeling, and gives students a stage to defend a view. However, today's markets, data-heavy, AI-assisted, and always on, demand habits that typical curricula leave underdeveloped: short-cycle monitoring used appropriately, clean documentation, light automation, and working in shared systems. Because industry tools and workflows change quickly, programs benefit when course design stays close to current practice. Accordingly, we refocused our SMIF on real-time classroom workflow, without turning the course into a trading platform, by structuring how students move from idea to valuation, to risk review, and then to a documented decision.

Despite improvements, SMIFs still face the semester clock as a fundamental constraint. Short cycles and frequent turnover break continuity and make it hard for students to see the long-term impact of their decisions (Boughton and Jackson, 2020). Turnover also increases the advisor's risk-management load and erodes institutional memory, so each cohort spends time rebuilding context rather than compounding it. Commitment is another challenge, as some students seek the résumé line over the daily work of rigorous analysis and active monitoring (Lin, 2022).

To address these issues, we introduce a Learning Management System (LMS)–integrated SMIF course portal that renders the investment process as a clear, visible classroom workflow. The portal's purpose is pedagogical: it organizes roles and cadence and makes student reasoning

and collaboration observable to faculty and peers. AI-assisted notes and summaries support (not supplant) analysis. The course portal does not replace professional terminals or execute trades; it complements in-lab use of Bloomberg, FactSet, and Capital IQ by keeping student work visible, searchable, and accountable outside lab hours. A central design choice is that monitoring does not equal trading: brief daily check-ins and price alerts function as review triggers, not trade triggers, and decisions pass through proposals, student deliberation, faculty approval, and long-horizon expectations (e.g., minimum holds absent a documented thesis break).

Roles rotate across front-, middle-, and back-office tasks to build a shared understanding of idea generation, risk, and operations; the operational details and artifacts are presented in Program Design that follows. Here we emphasize the educational contribution: a platform-agnostic, LMS-integrated course portal that makes the investment process teachable within a semester by turning reasoning into observable work, consistent with active-learning evidence (Chi and Wylie, 2014; Freeman et al., 2014; Prince, 2004) and mindful of SMIF constraints (Boughton and Jackson, 2020; Lin, 2022).

Conceptual Framework

Our framework operationalizes these principles into weekly roles and routines that develop market judgment and accountability. The following sections detail how work moves through the course portal—who does what, when it happens, and how outputs are reviewed and archived.

Cognitive Benefits from Interactive Digital Environments

Research in cognitive psychology finds that active digital work builds market-relevant skills. Students who practice action-oriented tasks show gains in working-memory updating and attentional/spatial skills (Bediou et al., 2018; Colzato et al., 2013). These capacities map directly to market practice: tracking new information, revising views quickly, and sustaining focus under time pressure.

We capture these benefits with a single, centralized course portal that provides a shared workspace for short, time-bounded updates, timely instructor/peer feedback, and visible responsibilities. Continuous, goal-directed interaction paired with built-in accountability keeps attention on fund work and builds the habit of separating short-horizon noise from long-horizon

signals. Monitoring serves as a review trigger, not a trade trigger.

Real-time Decision-Making and Cognitive Flexibility

Our core goal is to strengthen students' confidence and ability to make timely, well-supported decisions. Students engage with current market conditions, learning to manage fast information flow and real-world complexity. They post concise observations and evidence to the course portal, where short, time-bounded updates serve as review triggers. This steady routine keeps attention on what matters, and it helps students communicate and defend decisions in writing and during class. Students build independent judgment by observing how dislocations form and resolve, and how coverage can amplify or mute signals.

In undergraduate classrooms, active engagement reliably outperforms passive formats on learning outcomes, even when students feel they learned less (Deslauriers et al., 2019; Freeman et al., 2014). Our twice-weekly market discussions and short, documented updates apply that principle to live markets. We blend core analyses with simple online collaboration in the course portal, so students hold one another accountable, learn to prioritize under time pressure, and develop good judgment while working in teams.

Independent Thinking and Emotional Intelligence

Our model cultivates independent thinking and emotional intelligence through visible, ongoing contributions. Students post short notes outside class, analyze market moves, share sources, and state a view in the course portal. The instructor moderates and replies, asking for clearer reasoning, better sourcing, and a stoic tone. This steady routine builds ownership and self-awareness and gives students the confidence to hold and defend a view different from the crowd. Transparent activity reduces free riders and turns debate into constructive discussion.

Because students already work comfortably on digital platforms, meeting them there lowers friction and increases engagement. With clear expectations and active moderation, public posts become practice for professional communication under pressure. Students learn to separate fact from opinion, disagree without being disagreeable, and manage emotions when prices move fast. Posts and replies count toward the grade, which keeps effort consistent, and the record helps the next cohort learn from what worked and what did not.

Integrated Real-time Platform and Data-Driven Learning Environment

Our SMIF uses a lightweight course portal built for teaching. We have long relied on Bloomberg, Capital IQ, and Excel for portfolio analysis; these remain essential in the lab for market data and deep modeling. The course portal's role is pedagogical. Students upload short summaries of their offline work so research stays visible, searchable, and accessible in one place. There is no trade execution through the course portal.

The course portal centralizes daily classwork including student notes, limit updates, selected context on holdings, public news/earnings items, and AI-assisted summaries to support discussion and documentation. Having a single workspace for routine tasks makes idea generation, risk review, and collaboration faster and more accountable, without replacing professional data terminals.

Students oversee the Fund through the course portal and collaborate through chat and message boards. They set and maintain buy and sell limits for the names they follow, starting ±5% from the price, with a brief comment. All existing positions enter the same framework, and limits change as analysis and conditions evolve. When an alert triggers, the student reassesses the name, updates the limit, and notes whether the move is driven by company news, sector shifts, macro events, or the broader market. The course portal is transparent and asynchronous, so everyone can see who owns which limits and whether updates were made on time. Missed updates, especially before the Monday market open, carry clear grade consequences.

Because the course portal is always available, students remain engaged beyond class. Each day, they review activity and team notes, scan public information or news relevant to their coverage, and post concise updates. This steady, asynchronous routine builds accountability, improves response speed when conditions change, and strengthens the behavioral awareness the course is designed to teach.

Guided Mentorship by Experienced Faculty

A clinical faculty member with recent investment management experience anchors the program. The faculty member translates current desk practice into classroom routines, provides feedback on ideas, and models professional communication. Their working knowledge of markets, strategies, industry norms, and tools closes the gap between theory and application and raises the quality of student judgment and decisions.

In our SMIF, a single clinical faculty member serves as mentor and risk manager. They

guide weekly workflow, moderate discussions, review proposals, and keep collaboration on track in the course portal. Each morning, they scan the news, post articles or exhibits on the message boards, and upload any files the class will use. They keep AI-assisted workflows current and ensure market updates and stock-specific notes reach the right small groups. This steady presence keeps students engaged and aligns classroom decisions with professional standards.

Continuity comes from the course portal and the habits we enforce. The instructor ensures proposals, notes, and investment ideas are logged with clear titles and links to tickers. This practice reduces knowledge loss between cohorts and gives the next class a clean record to build on.

Program Design

Our SMIF runs on a single shared portal, with small groups owning sectors. One small group rotates as Broad Market Lead each week and publishes the in-depth "Week Ahead" and "Week In Review" summaries. We maintain a derivatives team for options-based strategies under close faculty oversight; other programs can treat this as optional.

Weekly task framework

Monday — Week Ahead (via course portal). The Broad Market Lead posts an in-depth Week Ahead Brief that frames the market and sets the focus for the week. Every sector group posts a short Week Ahead Brief for its coverage. Briefs go live in the portal on Monday morning, so Tuesday's discussion starts with shared context.

Tuesday & Thursday — In-person market discussions. These are two short sessions each week at the start of class time. We call this the morning market discussion, even if the class runs later in the day. The professor challenges students on positions, risks, limits, and developing ideas. Student groups defend their views, explain moves, and surface items that need deeper research. All groups share information, opinions, or anything that could affect the Friday updates. Any proposed portfolio changes are written up and logged in the portal with any supporting files attached. The entire team and professor review the proposal, and a question-and-answer session is scheduled, after which the students vote on the change.

Friday — Week in Review (via course portal). The same Broad Market Lead posts an in-depth Week In Review Brief that explains what happened and why. Every sector group posts a

short sector Week in Review with performance, notable moves, and any changes or concerns to their current investment thesis. These posts anchor the following Tuesday discussion.

Daily routine

Students aim to log in daily to scan prices, news, earnings, and peer posts. When alerts are triggered, students update their buy and sell limits and add a one-sentence reason, classified as company, sector, macro, or broad market-related. Default limits start at ±5 percent and are refined as analysis improves and as the student sees fit to accommodate volatility.

Students keep a living record in the portal. Each update links to sources and tickers and uses clear names, making notes easy to find. Research board posts cover broad market or sector views. Stock notes capture company updates, thesis changes, and limit changes. This allows us to compound institutional knowledge across semesters.

Core deliverables

Knowledge base upkeep (weekly). Upkeep consists of at least two short posts per group—one research board post and one stock note with links, tags, and a summary. Students can attach PDFs and use AI-generated summaries and must verify accuracy with one or two takeaways in their own words.

Deeper stock note (rotating). Each sector group provides a deeper note with thesis status, a compact valuation snapshot using multiples or a DCF model, key risks and catalysts, and an explicit action such as buy, hold, reduce, or sell. Half the sector groups submit one week, and the other half submit the next. Notes are posted to the portal and highlighted in the morning market discussion.

Risk and attribution snapshot. One to two pages from a rotating team with two exhibits that separate beta and style tilts from selection and show any noteworthy sector or factor changes.

Derivatives update (when relevant). A short note covers hedge status, exposures covered, and any change requests. Programs without derivatives can skip this.

Offline analyses posted online.

DCF modeling uses a percentage of sales approach with one chart and three takeaways.

Rolling factor views with short commentary.

Simple factor-based attribution analysis that separates beta and style from selection.

Mean-variance optimization under stated constraints with a short defense of the chosen point.

Light Python code with Excel for returns and panels, with a brief note explaining what the code does.

Templates and grading

Student-built templates live in the course portal, so outputs stay consistent. Grades reward cadence, quality, communication, and teamwork. The record is searchable, so the next cohort builds on it rather than starting over. Grades include knowledge base quality with credit for clear summaries, working links, tags, and on time posts. All AI-assisted items use the AI assist tag, including the core prompt, key outputs, links to sources or file IDs, and a two-sentence reflection.

Implementation and Cost (overview)

To address feasibility and scalability, we built a self-hosted course portal using AI-assisted programming on a light BaaS stack. The portal aggregates read-only Schwab brokerage data and permitted market-context feeds, uses a small staging/ETL layer (SQL Server) to validate and normalize records, and then programmatically loads clean tables into the hosted BaaS database that the course portal reads from and writes to. The portal is a pedagogical workflow layer (documentation, cadence, artifacts), and the approach can be reproduced at other schools with comparable components. Table 1 below summarizes the one-time build and modest recurring costs.

Table 1: Implementation Cost Summary

Category	Item	Description	Amount	Notes
One-time setup	Server hardware	CPU running SQL Server (Free) as staging/ETL	$3,000	Cleans/validates API data before loading to hosted DB
	Student stipend	Single data-science student (summer internship)	$2,500	Faculty assisted and supervised
Recurring (software/cloud)	AI programming environment	Upgraded tier for AI-assisted development	$25 / month	Used for code co-pilot, prompts, and reviews
	Managed BaaS DB	Hosted database + basic services with managed user authentication	$25 / month	Scales with usage; vendor-neutral components
	BaaS DB excess usage	Variable bandwidth/storage for artifacts/logs	$0.10 / GB (≈ $20 / month for 25 logins)	Based on the current average usage
	Brokerage API access	Schwab API used for holdings, transactions, Price Data, select company fundamentals	$0 (no incremental cost)	Included with custodial account; subject to provider terms/limits
Support	Faculty lead	Operational ownership, approvals, reviews	In-kind	Clinical faculty time
	Graduate assistant	Maintenance & small features	~2–4 hours / week	As needed during semesters

AI-enhanced data processing and workflow

AI supports speed and clarity and does not replace student judgment. We use it to summarize, check work, and automate small tasks so students spend more time thinking.

What students do each week with AI:

- Summarize two relevant articles on some event in the market and attach PDFs to the portal with one or two takeaways in their own words.
- Outline a deeper stock note, in addition to their Week Ahead or Week in Review and keep the final note in their own words.
- Draft or refine a "short" Python script using an AI-enabled programming environment that pulls prices, cleans data, or automates relevant tasks, and add a plain English comment explaining what the code does.

What AI must not do:

- No unsourced claims or fabricated quotes.
- No valuations without linked sheets or code.
- No trading proposals.
- How we log and grade AI use:
- Every AI-assisted item is tagged AI-assisted in the portal.
- Students keep the main prompt and key lines of output with links to sources or file IDs and add a two-sentence reflection on what changed after AI review.
- Grading rewards accuracy, attribution, clarity, and useful automation.

Instructor Role

The instructor posts AI-aided or AI agent-market briefs daily and maintains a prompt library for common tasks, such as meeting checklists, limit updates, and code comments. The instructor spot-checks sources and flags potential AI-induced errors, helping students build strong research habits.

Embedded Skill Development and Off-Classroom Tasks

Thinking and market sensemaking (AI-assisted). Processing financial media, cross-sourcing with teammates to separate signal from noise and reading price reactions for signs of market efficiency versus transient dislocations.

Valuation & modeling. Via DCF modeling and deeper stock notes.

Risk literacy. Through weekly factor analysis, P&L attribution analysis, and beta-weighted portfolio risk analysis.

Portfolio construction. Via mean–variance optimization with constraints.

Data and automation. Through short Python scripts developed in AI-supported programming environments during offline analysis.

Professional communication. Through posting, collaborating on other groups' ideas,

on-time deliverables, and professor-led classroom discussions.

End-of-Semester Capstone Presentation

The program ends with a formal presentation to the Advisory Board composed of faculty and industry professionals. Teams present sector reviews, performance attribution, valuation highlights, thesis evolution, and lessons learned. This capstone simulates an investment-committee meeting and prepares students for professional asset-management roles—while keeping the course centered on process, evidence, and communication, rather than trading.

Benefits & Outcomes (What the portal changes for students)

The course portal design changes how students practice finance in the classroom. For many college students, the challenge is distinguishing short-horizon noise from long-horizon signal and understanding each one's relevance for asset prices. Our aim is not to promote market "short-termism," but to use it as a teaching device to expose the relationship between information and price. Students move through a consistent sequence—idea generation, valuation, risk review, and documented decision—inside a shared space where reasoning is visible to instructors and peers. Because each step produces an artifact, feedback targets the skill that step is meant to build (e.g., framing drivers and catalysts, defending assumptions, articulating risk). The emphasis is on how students think and communicate, not on execution or market timing.

Process as pedagogy

The course portal turns the investment process into a teachable, auditable workflow rather than a comprehensive portfolio interface like Bloomberg. Each stage generates a concrete artifact, the idea brief, valuation exhibit, risk snapshot, and decision memo, that makes student reasoning observable. Instructors can intervene at the right granularity (assumptions, modeling choices, or risk framing), and students learn that disciplined sequence and documentation constitute the backbone of sound investment analysis.

Thesis-led analysis

Positions are anchored by a defensible thesis that lists drivers, risks, catalysts, and exit criteria, supported by valuation (DCF/comps). Proposals are logged, discussed, and proceed only after student deliberation and faculty approval. This governance structure forces students to connect models to arguments, reconcile conflicting evidence, and revise the thesis as information comes in.

Monitoring ≠ trading

Price alerts are review triggers, not trade triggers. For students new to capital markets, a 10–15-minute daily "check-in" on sector moves is a first lesson in market literacy: most short-term fluctuations are noise and chasing them is a fool's errand. Guided by this routine, students learn to (i) spot genuinely relevant developments, (ii) classify the information (company, sector, macro, or market-structure), and (iii) state whether it reinforces, refines, or challenges the thesis. The practice builds judgment about materiality without encouraging activity for activity's sake.

Long-horizon discipline

To prevent short-termism, we separate monitoring from trading and adopt precise horizon controls: minimum holding periods absent a documented thesis break and turnover guardrails aligned with course objectives. Students must justify any proposed change against the original thesis, valuation, and risk context. Over the term, they experience how long-horizon value creation coexists with short-horizon noise and learn to escalate only when the thesis truly changes.

Assessable learning

Because every step yields an artifact, i.e., thesis memo, model, risk snapshot, and weekly update, the course produces evidence of learning that can be graded with rubrics. Instructors can assess clarity and defensibility (thesis), internal consistency and sensitivity (models), separation of beta/style vs. selection (attribution), and timeliness/quality (updates). Paired with pre/post surveys, these artifacts let us evaluate growth in analysis, risk literacy, and professional communication across the semester.

Planned evaluation

In this first run, we pair the section's outcomes with a brief pre/post survey (Appendix A). In Weeks 1 and 14, students self-assess four domains—valuation & modeling, risk/process, communication, and data/workflow—on anchored 1–5 scales. We also summarize two simple process indicators captured by the course portal: (i) access frequency (logins) and (ii) buy/sell-limit updates as a proxy for market engagement. Results will be descriptive with effect sizes only.

Governance & Oversight

Oversight and structure

The Student Managed Investment Fund (SMIF) operates under the University's Investment

Policy Statement (IPS) approved by the USC–Business Partnership Foundation (BPF) Finance Committee and Board of Trustees. The Fund is a board-designated account administered as a Global Equity Fund for IPS purposes. Day-to-day management occurs in the course, with students proposing and monitoring investments under faculty supervision.

Educational mandate

Consistent with the IPS, the Fund's primary purpose is educational. Fund management explicitly incorporates student learning through hands-on research, valuation analytics, portfolio management, and consulting. Accordingly, prudent portfolio management is conducted in service of learning outcomes, distinguishing the IPS from a purely professional, total-return mandate.

Performance philosophy

Because education is a stated objective, short-term deviations from a strict risk-adjusted total-return optimum may occur when they serve clear learning aims (e.g., documenting a sector-rotation decision, running a hedging demonstration, or recording thesis changes). Such actions are time-boxed, documented in the course portal, and approved through the governance process below. The value created for students includes sound judgment, research ability, and market sense-making, which are intended outcomes that are not fully captured by performance alone.

Roles and approvals

The Supervising Faculty Member approves or rejects asset classes, determines general allocations, accepts specific securities, and executes trades. Students manage within IPS guidelines and the course decision process; the Finance Department Chair shares trading authority per IPS. If the Chair or Supervising Faculty is unavailable, an Associate Dean is authorized to execute trades. Students never have custody or direct access to Funds.

Decision process (course-level)

Proposals are posted in the course portal with a concise thesis, sources, and exhibits; discussed in class; voted on by students; and routed for faculty approval and execution at the custodian by the instructor. The course portal is a documentation and coordination system only.

Board oversight and IPS changes

The BPF Finance Committee and Board approve any IPS amendments. Students may recommend changes with a three-fifths (3/5) student majority, subject to endorsement by the Supervising Faculty Member and Finance Department Chair before submission to the BPF Finance Committee and then the Board. The BPF Finance Committee and Board may also initiate changes independently.

Permitted instruments and risk boundaries

Eligible instruments follow the IPS (e.g., U.S. equities, including ADRs, preferred stocks, REITs, ETFs, investment-grade debt, and exchange-listed derivatives and short selling within IPS limits). Use of exchange-listed derivatives and short selling is limited in aggregate to 10% of AUM, with no more than 5% committed to short selling and a quarterly review/rebalance; short sales employ risk-mitigation practices. To manage concentration risk and maintain diversification, a faculty-imposed rule requires that initial equity positions may not exceed 5% of AUM at the time of purchase; equity positions that rise above 5% due to price appreciation are reviewed promptly for trimming. This rule does not apply to U.S. Treasury ETFs.

Compliance and representation

Participants are not investment advisers under the Investment Advisers Act or state law, and students may not solicit outside accounts; all trading occurs in the Fund's custodial account under faculty authority.

Reporting and accountability

Students prepare periodic portfolio updates, an end-of-year presentation and written reports; Fund activities are audited annually. All proposals, votes, approvals, and exhibits are retained in the course portal to support continuity, oversight, and instructional evaluation across cohorts.

Closing Remarks

Financial markets are evolving, and students need good working habits, not only from pitches. Our SMIF replaces the semester cycle with a simple weekly workflow managed in a single shared portal. Students make real decisions, maintain clean notes, and complete traditional offline analyses, including DCF modeling, factor analysis, P&L attribution analysis, and mean-

variance optimization. We incorporate evolving AI tools and exercises to speed routine work while judgment stays with students and faculty. The institutional knowledge and portfolio positioning are maintained in the course portal and thus develop with future cohorts, making them readily evaluated in changing markets. The result is a practical, scalable model that turns class time into a teachable process and leaves students better prepared to reason in markets.

This reinvention rests on two pillars. First, a shared course portal organizes roles, cadence, and student artifacts so work is visible, searchable, and accountable across cohorts; it does not provide market data, does not replace professional terminals, and does not execute trades, but complements in-lab use of Bloomberg/FactSet/Capital IQ. Second, AI supports summaries, coding, and quick checks while human judgment stays central. With faculty oversight, these pillars create continuity in a semester-based course, reduce redundant effort, and free time for thinking. Programs can adopt the same structure in small steps and still benefit from a modern desk workflow.

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The Secret Sauce: How Can SMIFs Improve the Student Experience and Reduce Risk?

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ABSTRACT

An investigation into the extant literature on university-level Student Managed Investment Funds (SMIFs) yields a plethora of studies and advice, but the literature rarely delves deep enough into the specific, integrative approach to combining multiple pedagogical components into a "secret sauce" of successful SMIFs with potentially reproducible results. The literature identifies both broad and general themes, often uni-faceted (Abukari, Oldford, and Willcott, 2021; Gitman and Joehnick, 1990; Carter and Simkins, 2014; Frye and Hiller, 2015). However, a more robust, unified, integrative, multi-component pedagogical approach that combines mission-driven, market-focused, and peer-pyramidal pedagogy is lacking in the literature.

We aim to add to the literature and bridge the gap by investigating the mission-driven, market-focused, multifaceted pedagogy of the Fordham University Gabelli School of Business (GSB) Global Balanced SMIF, supplemented by information from the University's other student investment funds and related experiential investing opportunities available to students. We find that modelling a mission-driven,

market-focused, peer-mentorship (pyramidal learning) structure, that allocates capital across multiple asset classes when aligned with contributions from experienced market practitioners, a highly-ranked academic faculty, highly engaged and rigorous finance/accounting education, and an emphasis on ethical leadership, fiduciary responsibility, and behavioral awareness, offers a pedagogical approach that when combined delivers a secret sauce reflective of deep learning, student job placement success, and provides solid risk adjusted returns for stakeholders.

Introduction

Is there a secret sauce that can increase the effectiveness of Student Managed Investment Funds? At Fordham's Gabelli School of Business, we have crafted a recipe with unique ingredients that differentiate it from other SMIF programs: a mission-driven mandate, a market-focused structure, and peer mentorship to increase deep learning and asset allocation across uncorrelated global asset classes to reduce risk. Abukari, Oldford, and Willcott's comprehensive, systematic review analyzes 85 SMIFs and identified four recurrent streams: investment management, best practices, innovation and trends, and research settings, but finds significant gaps in fund performance, behavioral finance underpinnings, and program innovation. (Abukari et al, 2021)

We consider several major schools of pedagogical approaches. These include:

Experiential/Constructionist is often associated with a "Learn by Doing" methodology. This approach emphasizes an immersive real-world environment that fosters critical thinking, quantitative analysis, and communication skills by actively managing the Fund. This approach aligns well with the Kolb experiential learning cycle often used in adult and professional education and highlights four key areas: Concrete Experience (doing); Watching and Reflecting (reflective observation); Abstract Conceptualization (learning from experience); and Active Experimentation (learning by repeated effort) (Kolb, 1984).

Structured Equity & Industry Research Process emphasizes sector analysis frameworks while implementing a systematic data-gathering component for valuation modeling and pitch presentations. This often includes students obtaining and analyzing 10-Ks, earnings releases and earnings call transcripts, as well as other financial statements and indicators from authoritative sources such as Bloomberg, Refinitiv, and others.

Roles-Based Teams and Governance is a pedagogical approach that implements a strong organizational structure, processes, and methodologies, along with specific role-playing

exercises that replicate fund and asset management firm governance structures. The goal is to replicate and reinforce accountability and provide students with experience in real-world dynamics and incentives that drive behavior in professional money management firms.

Innovation, ESG, and Behavioral Themed Fund Development emphasizes the implementation of public interests and broader societal implications of investment firm behavior. The goal is to incorporate broader frameworks that account for externalities and specific mandated criteria into the processes of securities analysis, portfolio construction, portfolio management, and governance to achieve optimal outcomes that go beyond a narrow measure of financial returns to drive student understanding of broader factors in the investment research process.

Gabelli School of Business SMIF pedagogy, defined as Mission Driven, Market Focused, Pyramidic Mentored, draws on components of each of these four approaches but does so in a way that is unique to Fordham GSB's Mission. Specifically, as a Jesuit Catholic institution of higher education, Fordham relies on the Jesuit principles of *cura personalis* (taking care of the whole person); *magis* (striving to be and do "more" often associated with the understanding of "more" for the greater glory of God); and *homines pro aliis* (being men and women for others). Each of these three values associated with Jesuit Catholic higher education, globally are summed up in its final Ignatian concept of *concordia cordis, mentis et animae* (unity of mind, heart and soul). Though some may colloquially associate this concept with "putting your money where your mouth is," it is more commonly understood as an amalgam of a unique focus on using all resources together to achieve the mission. Indeed, this mission focus is embedded in much of the curriculum, applied across various courses, and exercised through multiple " outside the classroom" opportunities, allowing students to understand and accept that these values are part of the organic "DNA" of the Fordham GSB community. As a side note, we clarify that we do not advocate the "secret sauce" must follow Fordham GSB's Jesuit mission. Instead, each particular university's mission is expected to be well-defined, implementable, well-resourced, and practiced, exercised, and promoted throughout the student's education. We posit that when the mission's life approaches these criteria, a smooth incorporation of the mission into the investment and portfolio approaches in the classroom supports a successful SMIF program.

The ingredients below for the Fordham Student Managed Investment Fund were derived from a combination of initial architecture conceptualized at the Fund's inception by the course professor in alignment with the school administration. Over time, the recipe evolved to incorporate an evolving academic environment, changing market conditions, and student feedback. Later in the article, we consider some of the more recent evolutions of the Fund and

their rationale.

Ingredient #1 – Mission-Driven Mandate to Achieve Superior Student Engagement

Every school and its associated SMIF has its own distinct mission. At Fordham, we specifically investigated Jesuit education principles, often referred to with the Latin phrases Cura Personalis, Homines Pro Alias, and Magis (that is, taking care of the whole person, being men and women for others, and doing and being more with Magis, traditionally interpreted as more for the greater glory of God).

While there need not be a religious element to a SMIF's mission to achieve successful student outcomes, uniting students, faculty, and university stakeholders around common principles and ethical values provides a basis for effective teamwork and impetus to achieve outcomes beyond financial performance or individual gains. Many of the principles embodied in the Fordham mission are not strictly religious but instead are born out of the roots of the Jesuit educational tradition.

We validate Dickle's assessment that mission-driven SMIF programs do not impede but rather enhance both SMIF performance and learning outcomes (2023). These principles are the foundation of our mandate to provide a holistic student learning experience in managing investment funds.

Ingredient #2 – Market - Focus to Prepare Students for Career Success

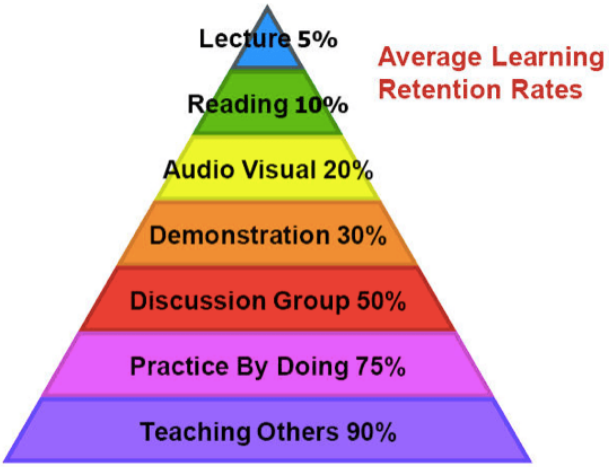
Fordham's Global Balanced SMIF begins each course session with a discussion of current market events relevant to the SMIF, which is titled "Around the World." A key component of this discussion is asking students to track macroeconomic, industry, and security-specific news. The students must them submit to a classmate who compiles and distributes a report on developments over the past week to all SMIF students to review in advance of the weekly session and "Around the World" discussion.

This has the benefit of instilling the habit of closely monitoring global events and helping students learn how to connect global events to their impact on security prices. A virtue of this fund structure and practice is that students learn how to connect oil prices to interest rates to the value of shares in companies, such as airlines, that depend on fuel as an input cost. The professor guides such discussions by challenging students to understand why their sector or company shares may have moved and forces them to deeply investigate whether the Fund's investment thesis remains valid. Magnus-Sharpe, Stewart (Cornell Chronicle, 2024) find that "[e]embedding real-time, proprietary industry-level equity analysis into SMIF curricula bridges academic and professional practices, yielding measurable outperformance."

Ingredient #3 – Peer Mentorship to Boost Deep Learning

When students practice peer mentorship by sharing their knowledge with classmates rather than passively receiving information, they achieve deeper learning. Ray and Taylor (2024) find that when peer mentorship is incorporated into financial literacy and experiential finance-related learning programs at the college level, both the student mentor and the mentee benefit in terms of both content digestion and supplemental interpersonal skill development. This student-empowered educational method draws on the principles of the learning pyramid, which postulates that teaching others results in the highest average learning retention rate in contrast to listening to a formal lecture by an instructor. (National Training Laboratories Institute, n.d.) Further, Charlton, Earl, and Stevens (2015) provided frameworks for expanding SMIF structure including, those that support diversification through asset classes and peer roles, both conceptually similar to the Fordham SMIF.

Exhibit 1 – The Leaning Pyramid



Source: National Training Laboratories, Bethel, Maine

Peer mentorship also fosters a high level of cooperation and teamwork among students. They regard participation in the SMIF program as an enjoyable experience, motivating them to invest more time and effort than they would in comparable academic courses. Students find engagement and peer mentorship as ways to build professional relationships that can benefit them in their future careers and an opportunity to share their expertise.

A two-semester program is the ideal environment to foster peer mentorship. Second-semester students, given the title of portfolio manager, mentor first-semester students, given the title of analyst. The Fordham Global Balanced SMIF program pairs portfolio managers and analysts to cover a single sector ensuring that industry-related knowledge, research resources, and

understanding of the portfolio holdings are continually passed down to the next generation of SMIF students. If only one semester is available for the SMIF program, course alumni can be invited back to mentor incoming students.

Ingredient #4 Global Asset Allocation to Decrease Risk and Expand Student Exposure

Ibbotson and Kaplan (2000) illustrate the importance of multi-asset diversification, yet many SMIFs restrict their investment universe to US stocks. Precise information about the investment mandates of SMIFs is very limited. According to a sample of 150 SMIFs from a universe of 702, only 31 SMIFs invest in assets beyond US stocks (personal communication, Brian Bruce, May 21, 2025). The reasons are apparent: US-based companies are more familiar to students and US-based faculty advisers, and they may also be easier to analyze than foreign companies due to differences in accounting and reporting standards across markets. This mindset has been reinforced over the last decade by the superior performance of US stocks, especially large technology stocks, versus non-US stocks and other asset classes.

By limiting their investment horizon to US stocks, SMIFs do not offer their students the opportunity to learn about companies domiciled in other countries or about other asset classes, such as fixed income, commodities, real estate, and foreign exchange. Most importantly, they do not take advantage of the risk-reducing benefits of global diversification. Faculty advisers can extend the range of learning experiences by inviting advisers with diverse expertise from among the finance faculty or professional investors. By allowing a wider range of opportunities for students and more exposure to diverse perspectives, the student learning experience is enhanced.

Mixing the Ingredients into a Balanced Fund

As defined by the Corporate Finance Institute (2025), "a balanced fund, also known as a hybrid fund, is characterized by diversification among two or more asset classes. A balanced fund usually combines stock and bond components in a diversified portfolio. Balanced funds typically follow a 60% stock and 40% bond asset allocation. Asset allocation in a balanced fund allows investors to create an investment strategy that is relatively low-risk and high-reward."

The oldest balanced fund is the Vanguard Wellington Fund, founded in 1929. Since inception, it has earned an annual return of 8.28%. It typically allocates two-thirds of its portfolio to stocks and one-third to bonds. The stock holdings are diversified across eleven equity sectors with an emphasis on large-cap value. The bond holdings are centered on medium-duration investment-grade securities.

Global Balanced Fund

A global balanced fund expands the definition to include stocks and bonds worldwide. A

good example is the BlackRock Global Allocation Fund, initially founded in 1984 as the Merrill Lynch Global Allocation Fund. Since inception, the Fund has returned 9.08% annually versus its benchmark of 7.32%. The benchmark consists of 60% global stocks (36% S&P 500 and 24% FTSE World ex-US) and 40% global bonds (26% ICE BofA Current 5-year Treasury and 16% FTSE Non-USD WGBI). Over its 30-year history, the Fund has delivered returns in excess of global stocks and bonds, with a third less volatility than global stocks.

Fordham's Global Balanced SMIF

Description and Performance

Fordham's SMIF has broadened its definition to include other global asset classes such as commodities, real estate, foreign exchange, and other alternative assets. It was launched in January 2010 with $1 million of the University's endowment fund. Its 15-year internal compounded annual return has been 5.69%. Over the last 10 years, the Fund has earned 5.56% annually compared with the BlackRock Global Allocation Fund's return of 5.51% after management fees, versus its benchmark of 6.25%. This underperformance of global balanced funds generally reflects the exceptional performance of US technology stocks relative to other asset classes during this period.

Investment Objectives

Fordham's Global Balanced SMIF's investment objectives are preservation of capital and long-term capital appreciation. The learning objectives are to provide students with real-world experience in money management and to prepare them for successful finance careers.

Blended Benchmark Components

The components of the benchmark are the S&P Global 1200 Total Return Index, the Barclays US Aggregate Float-Adjusted Index, the Deutsche Bank Commodity Index, and the Dow Jones Global Real Estate Security Index.

Exhibit 2– Benchmark Allocations

	Benchmark	**Portfolio Range**
Asset Allocation		
Equity	50%	30%-70%
Bonds (Investment Grade)	40%	20%-60%
Commodities	6%	4% to 8%
Real Estate Companies	4%	2% to 6%

Other Alternatives	0%	0%-3%

Allocations: Benchmark and Minimum / Maximum Investment Range

The Fund's asset allocation approach is designed to give students flexibility in allocating assets across different equity sectors and asset classes, while ensuring adequate diversification. The benchmark allocation for equities, for example, is 50% with a maximum of 70% and a minimum of 30%.

Exhibit 3 – Asset Allocation Benchmarks

Benchmarks	Description	B'berg Ticker
Equity	S&P Global 1200 Index Total Return	SPG1200T
Bonds	BarCap US Agg. Float Adjusted Index	LBUFTRUU
Commodities	Deutsche Bank Commodity Index	DBC
Real Estate	D.J. Global Real Estate Security Index	DWGRST

Note: The equity benchmark is the S&P Global 1200 Index rather than the S&P 500 Index, reflecting the global nature of the fund.

The importance of asset allocation in explaining returns is emphasized with reference to the insights of Ibbotson (2000). The Fund is structured to give students wide discretion in allocating across asset classes while maintaining diversification.

Increasing Student Learning Through Peer Mentorship

The SMIF is designed to replicate key elements of a professional investment management company's organizational structure. It is a two-semester academic program for twenty-eight undergraduate finance students. In the first semester of the program, fourteen students are selected and assigned roles as analysts across each equity sector and asset class. In the second semester, they become portfolio managers who mentor analysts and gain the ability to vote on all transactions. Three of the portfolio managers are selected by the faculty instructor to serve as managing directors, overseeing the Fund's overall activities. The managing directors play an essential leadership role in ensuring that the Fund is effectively "student-managed" in its truest sense. Portfolio managers are also assigned roles such as Chief Economist, Risk Managers, Pitch Coordinators, and Options Strategists. The students are supervised by a faculty instructor who reports to the University's Chief Investment Officer.

Students are given broad leeway within pre-approved investment constraints, and second-

semester portfolio managers make the final decisions within those parameters. This "earned trust" is important in giving students agency over the outcome of their decisions and ownership of the Fund's performance. This progression of responsibilities from one semester to the next, culminating in second-semester portfolio managers' ability to make final decisions as a group, ensures continuity in the management of the Fund and consistency in understanding the portfolio's holdings and strategy.

Each weekly class features a discussion of relevant current events, followed by an "Around the World' review in which analysts report on specific developments in their sector and security holdings. This stimulates discussion about any potential impact on the investment thesis underlying the investment. Risk management is addressed utilizing the Bloomberg Multi-asset Risk System.

Over the course of the semester, each student presents a comprehensive research report on a new investment proposal. These reports emphasize the development of an investment thesis that presents a variant perspective. Valuation methods employed include DCF, comparative financial ratios, NAV, sum-of-the-parts analysis, and other methods as appropriate. Students are asked to think deeply about the appropriate metric and to consider which metrics industry analysts favor to evaluate the underlying business. Neumann (2017) offers many of these as a framework incorporated into cashflow valuation models, potentially a successful model for SMIF valuations.

Risk Reduction through Diversification

As a global balanced fund, Fordham's SMIF benefits from multiple levels of risk reduction:

Equity Diversification – reduces unsystematic risk by investing in a minimum of 30 individual stocks and ETFs across the 11 GICS equity sectors. This is the basic strategy of all SMIFs. Fordham SMIF also invests in non-U.S. stocks to further increase diversification.

Bond Diversification – bonds provide a steady income stream, a reservoir of funds to deploy, and often trade with negative correlation to equities across most market cycles. This is the basic risk-reduction strategy for all balanced funds.

Less-Correlated Asset Classes – risk can be further reduced by investing in less-correlated asset classes, such as commodities, real estate, and alternative assets. This is the strategy that distinguishes the Fordham SMIF.

Put Option Hedges – risk in the equity portion of the portfolio can be reduced by buying puts on the S&P 500 Index ETF (SPY) or other indices as a hedge. The Fordham SMIF uses deep out-of-the-money puts to protect against a "Black Swan" event. Put options can also be used to

hedge risk in other asset classes and provide insurance against a market downturn.

A Note on the Sharpe Ratio as a Measure of the Risk-Adjusted Return

The Sharpe Ratio is calculated by subtracting the risk-free rate (10-year US Treasury Bond yield) from the investment's return and then dividing the excess return by the standard deviation of the investment's return.

Balanced Funds typically have Sharpe ratios <1.0, reflecting their conservative asset allocation mix. For example, the ten-year Sharpe ratios for Vanguard Wellington Fund, the BlackRock Global Allocation Fund, and Fordham's Global Balanced SMIF are 0.76, 0.56, and 0.50, respectively.

Some Shortcomings of the Sharpe Ratio Include:

- Risk is defined by the volatility of returns, a definition challenged by value investors.
- Assumption of a normal distribution of returns
- Sensitivity to the time period measured
- Dependence on historical data, which may not predict future returns
- Reliance on a constant risk-free rate
- Does not consider credit risk and liquidity risk

Innovating the Secret Sauce Formula and Recipe

The evolution of global financial markets and the investment management industry necessitates that SMIFs continue to innovate and modernize to effectively prepare students for careers and provide a valuable learning experience. Among potential innovations are expanding the universe of asset classes, adopting innovative research tools, including artificial intelligence, updating financial modeling techniques, and exposing students to younger guest speakers and advisers who can provide a pathway into investment management careers. While learnings from the Graham-Buffett tradition remain valuable, particularly in areas such as market psychology and the role of compounding capital, modern finance careers depend on the ability of students to adapt to pod-shop structures and deploy tools such as multiples analysis and reverse DCFs to extrapolate market expectations of future growth. In fact, in terms of enhanced financial technology learning, Payne and Tanner (2010) demonstrate that integrating Bloomberg and

financial modelling techniques boosts both learning outcomes and post-graduation workplace confidence. This aligns well with the Fund's requirements that all students be Bloomberg-trained and include appropriate, quantitatively based financial models in their pitches.

At Fordham's Student Managed Investment Fund, we have found that innovations including expanded assets classes available for investment, deployment of artificial intelligence in the investment process, introduction of value-added research techniques, adoption of a broader set of analytical tools depending on the particular investment, and bringing in younger guest speakers with diverse experience have furthered the Fund's success and adapted the student experience to prepare them for future careers.

Expanded Asset Classes: One particularly valuable way to engage students is to expand the universe of potential asset classes. The Fordham Global Balanced SMIF has been able to utilize a dedicated pair of students successfully focused on commodities to identify the growing role of commodity ETFs as an effective form of portfolio hedging and a source of alpha. In Spring 2025, the Fordham Global Balanced SMIF increased its exposure to gold ETFs and expanded into cryptocurrency by taking a small position in a publicly traded bitcoin ETF. Providing a broader scope of investment opportunities and exposure to non-traditional asset classes in a global balanced SMIF has several benefits.

Among the benefits is giving students the ability to analyze and participate in broader market conversations. Many of students' peers and increasingly major institutions, including University endowments and global asset managers like BlackRock, are investing in gold and bitcoin as hedges against movements of the U.S. dollar. They also serve as speculative investments. Broadening the SMIF investible universe allows students to gain a better grasp of the interlinked nature of global financial markets. For example, the stockpiling of physical gold in London, Chinese regulatory changes on bitcoin, or the potential U.S. government creation of a strategic bitcoin reserve can impact a wide range of investments within a portfolio of stocks, bonds, and alternatives.

While performance remains important and scaling such bets to appropriate limit risks remains a key consideration, giving students the license to be creative and think broadly about investing in new and innovative segments of the global financial markets inspires them to engage fully in the SMIF experience and makes them better analysts for prospective employers. In an academic context, enabling such investments and providing guardrails, SMIF Funds should consider the Fordham SMIF example by bringing in experienced guest speakers to lecture on the topics and consult with their endowment's chief investment officer before taking such steps. Education and communication to stakeholders are essential components of growing the

opportunity set for students.

Artificial Intelligence: The rapid adoption of artificial intelligence in the investment industry presents unique challenges for student managed investment funds. While many educators have restricted the use of widely available AI programs such as ChatGPT and DeepSeek in the classroom, we advocate for the training and adoption of AI tools as aids for SMIF research. Arming students with the power to experiment with AI methods such as ChatGPT, paired with Deep Research, can help them improve their investment research process and make them more attractive to potential employers. Given that a large percentage of the market's value today lies in firms whose futures depend on their effectiveness in winning market share, developing innovative hardware and software related to artificial intelligence, such as Nvidia and Microsoft, it is essential for them to have first-hand experience utilizing these tools to be able to evaluate those companies' prospects. While AI cannot replace investment judgment, it can help quickly identify key points of an investment thesis or prompt students to consider risks they may have initially missed, given their relative lack of experience.

Value Added Research: Another modern technique that student managed investment funds can use to differentiate themselves is encouraging students to take an active role in qualitative value-added research. This includes interviewing executives, surveying students on their purchasing habits, visiting retail stores, and consulting journalists covering companies within their investment universe. These skills, which go beyond the typical analysis of financial statements, can help differentiate investment proposals and demonstrate a deeper grasp of business models and industry trends that employers find attractive and can yield superior investments. They can also be combined with the artificial intelligence tools described above.

At Fordham, we have observed students deploying AI innovatively to perform value-added research, such as using an AI call center application to call retail stores to inquire about product availability and demand trends. This widened the scope of inquiry and data set beyond the sample size they could achieve by manually calling stores. Such properly designed surveys can put student SMIF on a stronger footing versus the institutional investors they are competing against in the market. It is the role of the SMIF faculty instructor to challenge students and ensure they deeply understand the research process and do not rely solely on the algorithm's logic to make an investment decision.

Additional Tools: Connecting traditional academic finance education to modern practices at investment firms requires SMIFs to take a leadership role in broadening the toolkit available to our investing students. Traditional corporate finance taught at the undergraduate level relies heavily on teaching students discounted cash flow (DCF) analysis. While such methods are

commonly used in Wall Street investment banks and private equity firms, many buy-side firms, such as hedge funds and long-only asset managers, rely on multiples analysis or reverse DCF models that focus on the implied future expectations of the current stock price. Continuing to evolve the templates and tools used in a SMIF program to align with current market practices remains a key objective, and Fordham's Global Balanced SMIF has worked to incorporate this in our curriculum. Other tools, such as liquidation analysis, sum-of-the-parts valuation, and earnings power value, are worthy of discussion, as many activist and value-oriented firms use these methods in their investment analysis over DCF methodology.

The proliferation of pod shops and the focus on near-term earnings by market participants present another opportunity for SMIFs to adapt. A sector- or asset-class organizational structure allows students to begin developing specialized knowledge in a particular industry or asset class, thereby improving their attractiveness to prospective employers. For example, biotech-focused pods want to hire students with a proven interest in the industry or the beginnings of specialized knowledge in the sector. The deep dive and knowledge transfer enabled by the two-semester SMIF mentorship structure prepares students for such career opportunities.

Guest Lecturers: For professors teaching such courses, it is essential to continue adapting to these modern practices by bringing in guest speakers and advisers who are early in their careers. As industry structure evolves, they gain insight into recruiting practices, the demand for skills, and the methodologies firms use to expand their hiring. Exposing students only to "industry legends" can provide valuable historical perspective and wisdom but may underprepare them for the professional opportunities available today. We advocate a mixture of both types of guest speakers and advisers for students.

One such method that professors can use to bridge this gap is to identify smaller investment firms (sub-$1 billion) that are often led by investment managers in their 30s who run a small team of analysts or operate as sole proprietorships. These managers tend to be more interested in engaging with students in a detailed fashion and may benefit from student research support, creating a natural mentor-mentee dynamic and potential internship or career opportunities. This mimics the structure of many pod-shops where there has been a rapid expansion of hiring opportunities for top students.

Other Applications of the Secret Sauce

Responsible Investing SMIF (RI)

The Global Balanced SMIF's success triggered the exploration of additional innovative programs.

Following the successful track record of student experience outcomes and risk reduction by the Global Balanced Fund SMIF (GBF), a trajectory of good news ensued: significantly higher numbers of students receiving front-office offers; superior compensation and bonuses; and additional top-20 MBA and MS/MSQF acceptance of SMIF alumni. At the same time, the Fordham Finance and Business Economics Area, as well as the Gabelli School of Business (GSB) as a whole, both rose in national rankings (Faculty Area within the top 15 and the GSB undergraduate school attaining top 20) with its SMIF program highlighted as a key component of the student experience. The secret sauce's mission-driven, market-focused, peer-mentorship application seemed to stir the pot among students, faculty, and school success.

To capitalize on that success and, concurrent with a generous donation from a large GSB benefactor, a position was funded to develop additional innovative programs in finance. The goal was to develop additional experiential learning opportunities that capitalized on demonstrated success. The secret sauce of mission-driven, market-focused and mentored pedagogy was both successful and used as a guide to build an additional SMIF program. .

Discussions among faculty, administrators, and students (both undergraduate and graduate), as well as with alumni and industry professionals, consistently indicated that the program's emphasis should be on innovative teaching methodologies, hands-on learning supported by structured interdisciplinary content, a "team" approach, and responsible behavior. The terms "ethical," "mission-driven," and "responsible" were shared objectives when designing the fund.

One outcome resulted in a beta test for an additional SMIF. In this case, we identified the creation of a SMIF that might be precisely aligned with the University's Gabelli School of Business and the Jesuit-inspired missions associated with the Jesuit tradition. The secret sauce of mission-driven, market-focused, peer-professor mentorship was mapped to defined missions in the school. We specifically investigated Jesuit education principles, often referred to with the Latin phrases *cura personalis*, *homines pro aliis*, and *magis* (that is, taking care of the whole person, being men and women for others, and doing and being more, with *magis* traditionally interpreted as more, for the greater glory of God).

Identifying ways in which a Catholic, Jesuit-centered university could therefore contribute to these principles from a business and specifically, Finance, perspective, led to research on Catholic Social Teaching, and particularly the Papal Encyclical Rerum Novarum (Pope Leo XIII, 1891) and the Conference of Catholic Bishops writings on the economy widely known as the defining document for modern Catholic Social Teaching. It focuses on the responsibility of business and financial markets to responsibly improve the conditions of humanity.

Based on this research, a second SMIF was proposed – SMIF Responsible Investing. The newly appointed Chair of the SMIF RI Investment Committee worked with appropriate stakeholders across the University–Finance Area Chair, University Chief Investment Officer, students, alumni, faculty, and administration over a two-year period to structure and construct the new SMIF model. In this case, we followed a mission-driven, market-focused, mentorship model. The mentorship in this new SMIF was primarily focused on faculty mentorship of with the course's professor, a former senior portfolio manager with extensive expertise in ESG and responsible investing. The SMIFRI proposal was finalized, pitched to the Board of Trustees in 2024, and approved the same year for an additional $1 million allocation.

There were, however, differences in structure and content to the SMIF GBF, but the same ingredients were used: mission-driven, market-focused, and mentorship. For example, given the focus on responsible investing, which has become a key tenet of equity investors given their ownership nature of the underlying companies, a well-diversified, equity-only allocation strategy was established. Separately, unlike SMIF GBF, SMIF RI is structured as a graduate-level (MS in Finance, MSQF, and MBA) program. The Fund's responsible investing approach is defined not only by its selection of socially responsible firms as long-term investments, but also by students who demonstrate responsibility by serving as fiduciaries for a portion of the University's endowment. By using MSCI as its primary data source (along with other platforms such as Bloomberg for more fundamental analysis and ratios for models and quantitative calculations), and by attending lectures students learn to prepare professional-quality pitches.

Students develop their pitches using traditional fundamental analysis including both macroeconomic and company-specific metrics to determine attractive valuations, while most of the pitch is based on MSCI data, rankings, evaluation, and analysis. The overarching goal is to find those companies with excellent financial performance, but more so, have (according to ESG MSCI metrics) the potential for positive social impact and responsible stewardship of corporations in their business practices.

Throughout the term, students prepare these pitches and present them to the Investment Committee in the last month of the course. The Investment Committee is composed of four Finance Area professors, all with both academic (PhDs in Finance) and/or professional credentials (either consulting or Wall Street). Once presented, the four members of the Committee select those that meet the criteria and approve them for investment by the Fund.

Conclusion

Building on the existing literature, we propose lessons that can be learned from the Fordham Gabelli School of Business experience in developing a sustained, successful student managed investment fund program. The goal of this program has been to deliver a student experience that provides real-world engagement with financial markets and prepares students for professional success. The secret sauce for this program has been its mission-driven, market-focused, and peer-mentorship model. The outcome has been improved student prospects and successful risk reduction for the stewardship of University endowment assets. The success of the Fordham Global Balanced SMIF has created opportunities for further innovation by expanding its investible universe to include new emerging asset classes, increasing exposure to new investment techniques, and adapting practices to meet the evolving nature of the asset management industry. Further, the success of this program has encouraged support for additional opportunities at the graduate level, with the introduction of a Responsible Investing SMIF that adheres to the same core principles and offers an additional opportunity for exceptional student experiences.

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Appendix 1: The Derivation of Equation (7.13) in Bodie et al. (2021, P. 205)

The Derivation of Equation (7.13) on Page 205:

Maximize the Slope of CML:

$$S_p = \frac{E(r_p) - r_f}{\sigma_p},$$

where, $E(r_p) = r_A \cdot w_A + r_B \cdot (1 - w_A) - r_f$

$$\sigma_p^2 = w_A^2 \cdot \sigma_A^2 + (1 - w_A)^2 \cdot \sigma_B^2 + 2 w_A \cdot (1 - w_A) \cdot Cov_{A,B}$$

Set $x = w_A$.

Let $u(x) = r_A \cdot w_A + r_B \cdot (1 - w_A) - r_f$

$$v(x) = (\sigma_p^2)^{\frac{1}{2}}$$

$$\Rightarrow u'(x) = r_A - r_B, \quad -\frac{1}{2}$$

$$v'(x) = \frac{1}{2}(\sigma_p^2)^{-\frac{1}{2}} \cdot (\sigma_p^2)'$$

$$\Rightarrow v^2(x) = \sigma_p^2$$

$$\left(\frac{u(x)}{v(x)}\right)' = \frac{u'(x) \cdot v(x) - v'(x) \cdot u(x)}{v^2(x)}$$

$$u'(x) \cdot v(x) = (r_A - r_B) \cdot (\sigma_p^2)^{\frac{1}{2}}$$

$$v'(x) \cdot u(x) = [r_A \cdot w_A + (1 - w_A) \cdot r_B - r_f] \times \frac{1}{2}(\sigma_p^2)^{-\frac{1}{2}} \cdot (\sigma_p^2)'$$

$$\Rightarrow \left(\frac{u(x)}{v(x)}\right)' = \frac{(r_A - r_B) \cdot (\sigma_p^2)^{\frac{1}{2}} - [w_A \cdot (r_A - r_B) + r_B - r_f] \times \frac{1}{2}(\sigma_p^2)^{-\frac{1}{2}} \cdot (\sigma_p^2)'}{\sigma_p^2}$$

Set $\sigma_p^2 = a$

$$\Rightarrow \left(\frac{u(x)}{v(x)}\right)' = \frac{(r_A - r_B) \cdot a^{\frac{1}{2}} - [w_A \cdot (r_A - r_B) + r_B - r_f] \times \frac{1}{2} \cdot a^{-\frac{1}{2}} \cdot (\sigma_p^2)'}{a}$$

Rewrite the numerator on the right side, and set the equation to be zero:

$$\Rightarrow \frac{a\cdot\left\{(r_A-r_B)\cdot a^{-\frac{1}{2}}-\frac{1}{2}\cdot a^{-\frac{3}{2}}\cdot[w_A\cdot(r_A-r_B)+r_B-r_f]\cdot(\sigma_p^2)'\right\}}{a}=0$$

$$\Rightarrow (r_A-r_B)\cdot a^{-\frac{1}{2}}-\frac{1}{2}a^{-\frac{3}{2}}\cdot[w_A\cdot(r_A-r_B)+r_B-r_f]\cdot(\sigma_p^2)']=0$$

$$\Rightarrow (r_A-r_B)\cdot a^{-\frac{1}{2}}=\frac{1}{2}a^{-\frac{3}{2}}\cdot[w_A\cdot(r_A-r_B)+r_B-r_f]\cdot(\sigma_p^2)'$$

$$\Rightarrow (r_A-r_B)\cdot\frac{a^{-\frac{1}{2}}}{a^{-\frac{3}{2}}}=\frac{1}{2}[w_A(r_A-r_B)+r_B-r_f]\cdot(\sigma_p^2)'$$

$$\Rightarrow (r_A-r_B)\cdot a=\frac{1}{2}\cdot[w_A(r_A-r_B)+r_B-r_f]\cdot(\sigma_p^2)'$$

$$\Rightarrow a=\frac{1}{2}\cdot\left(w_A+\frac{r_B-r_f}{r_A-r_B}\right)\cdot(\sigma_p^2)'$$

$$\Rightarrow 2a=\left(w_A+\frac{r_B-r_f}{r_A-r_B}\right)\cdot(\sigma_p^2)'$$

$$\Rightarrow 2\cdot[w_A^2\cdot\sigma_A^2+(1-w_A)^2\cdot\sigma_B^2+2w_A\cdot(1-w_A)\cdot Cov_{A,B}]$$

$$=\left(w_A+\frac{r_B-r_f}{r_A-r_B}\right)\cdot\left[\begin{array}{l}2w_A\cdot\sigma_A^2+2(1-w_A)\cdot\sigma_B^2\cdot(-1)+2(1-w_A)\cdot Cov_{A,B}\\+2\cdot w_A\cdot Cov_{A,B}\cdot(-1)\end{array}\right]$$

$$\Rightarrow w_A^2\cdot\sigma_A^2+(1-w_A)^2\cdot\sigma_B^2+2w_A\cdot(1-w_A)\cdot Cov_{A,B}$$

$$=\left(w_A+\frac{r_B-r_f}{r_A-r_B}\right)\cdot\left[w_A\cdot\sigma_A^2-(1-w_A)\cdot\sigma_B^2+(1-w_A)Cov_{A,B}-w_A\cdot Cov_{A,B}\right]$$

Thus, the left side of the equation:

$$= w_A^2 \cdot \sigma_A^2 + (1 - 2w_A + w_A^2)\sigma_B^2 + 2w_A \cdot Cov_{A,B} - 2w_A^2 \cdot Cov_{A,B}$$

$$= \cancel{w_A^2 \cdot \sigma_A^2} + \sigma_B^2 - 2w_A \cdot \sigma_B^2 + \cancel{w_A^2 \cdot \sigma_B^2} + 2w_A \cdot Cov_{A,B} - \cancel{2w_A^2 \cdot Cov_{A,B}}$$

the right side of the equation:

$$= \left(w_A + \frac{r_B - r_f}{r_A - r_B}\right) \cdot \left(w_A \cdot \sigma_A^2 - \sigma_B^2 + w_A \cdot \sigma_B^2 + Cov_{A,B} - 2w_A \cdot Cov_{A,B}\right)$$

$$= \cancel{w_A^2 \cdot \sigma_A^2} - w_A \cdot \sigma_B^2 + \cancel{w_A^2 \cdot \sigma_B^2} + w_A \cdot Cov_{A,B} - \cancel{2w_A^2 \cdot Cov_{A,B}}$$

$$+ \left(\frac{r_B - r_f}{r_A - r_B}\right) \cdot \left[\begin{array}{l} w_A \cdot \sigma_A^2 - \sigma_B^2 + w_A \cdot \sigma_B^2 \\ + Cov_{A,B} - 2w_A \cdot Cov_{A,B} \end{array}\right]$$

$$\Rightarrow \sigma_B^2 - 2w_A \cdot \sigma_B^2 + 2w_A \cdot Cov_{A,B}$$

$$= -w_A \cdot \sigma_B^2 + w_A \cdot Cov_{A,B} + \left(\frac{r_B - r_f}{r_A - r_B}\right) \cdot \left[\begin{array}{l} w_A \cdot \sigma_A^2 - \sigma_B^2 + w_A \cdot \sigma_B^2 \\ + Cov_{A,B} - 2w_A \cdot Cov_{A,B} \end{array}\right]$$

$$\Rightarrow \sigma_B^2 - w_A \cdot \sigma_B^2 + w_A \cdot Cov_{A,B}$$

$$= \frac{r_B - r_f}{r_A - r_B} \cdot \left[w_A(\sigma_A^2 + \sigma_B^2) - 2w_A \cdot Cov_{A,B} - \sigma_B^2 + Cov_{A,B}\right]$$

Multiply $r_A - r_B$ to both sides of the equation above,

Thus, the left side of the equation becomes as follows,

$$\Rightarrow (r_A - r_B) \cdot \left(\sigma_B^2 - w_A \cdot \sigma_B^2 + w_A \cdot Cov_{A,B}\right)$$

$$= (r_A - r_B) \cdot \left[w_A \cdot \left(Cov_{A,B} - \sigma_B^2\right) + \sigma_B^2\right]$$

The right side of the equation becomes as follows,

$$\Rightarrow (r_B - r_f) \times \left[w_A \cdot \left(\sigma_A^2 - 2Cov_{A,B} + \sigma_B^2\right) - \sigma_B^2 + Cov_{A,B}\right]$$

Transpose the right side to the left side,

$$\Rightarrow (r_A - r_B) \cdot \left[w_A \cdot \left(Cov_{A,B} - \sigma_B^2\right) + \sigma_B^2\right]$$

$$- (r_B - r_f) \cdot \left[w_A \cdot \left(\sigma_A^2 - 2Cov_{A,B} + \sigma_B^2\right) - \sigma_B^2 + Cov_{A,B}\right] = 0$$

$$\Rightarrow (r_A - r_B) \cdot \left(Cov_{A,B} - \sigma_B^2\right) \cdot w_A + (r_A - r_B) \cdot \sigma_B^2$$

$$- w_A \cdot (r_B - r_f) \cdot \left(\sigma_A^2 - 2Cov_{A,B} + \sigma_B^2\right) + (r_B - r_f) \cdot \sigma_B^2$$

$$- (r_B - r_f) \cdot Cov_{A,B} = 0$$

$$\Rightarrow w_A \cdot \left[(r_A - r_B) \cdot \left(Cov_{A,B} - \sigma_B^2\right) - (r_B - r_f) \cdot \left(\sigma_A^2 - 2Cov_{A,B} + \sigma_B^2\right)\right]$$

$$+ (r_A - r_B) \cdot \sigma_B^2 + (r_B - r_f) \cdot \sigma_B^2 - (r_B - r_f) \cdot Cov_{A,B} = 0$$

For the coefficient of w_A,

$$(r_A - r_B)\cdot(Cov_{A,B} - \sigma_B^2) - (r_B - r_f)\cdot(\sigma_A^2 - 2Cov_{A,B} + \sigma_B^2)$$

$$= r_A \cdot Cov_{A,B} - r_A \cdot \sigma_B^2 - r_B \cdot Cov_{A,B} + r_B \cdot \sigma_B^2 - (r_B \cdot \sigma_A^2 - 2r_B \cdot Cov_{A,B} + r_B \cdot \sigma_B^2 - r_f \cdot \sigma_A^2 + 2r_f \cdot Cov_{A,B} - r_f \cdot \sigma_B^2)$$

$$= r_A \cdot Cov_{A,B} - r_A \cdot \sigma_B^2 - r_B \cdot Cov_{A,B} + \cancel{r_B \cdot \sigma_B^2} - r_B \cdot \sigma_A^2 + 2r_B \cdot Cov_{A,B} - \cancel{r_B \cdot \sigma_B^2} + r_f \cdot \sigma_A^2 - 2r_f \cdot Cov_{A,B} + r_f \cdot \sigma_B^2$$

$$= Cov_{A,B}\cdot(r_A - r_B + 2r_B - 2r_f) - r_A \cdot \sigma_B^2 - r_B \cdot \sigma_A^2 + r_f \cdot \sigma_A^2 + r_f \cdot \sigma_B^2$$

$$= Cov_{A,B}\cdot(r_A + r_B - 2r_f) - \sigma_B^2(r_A - r_f) - \sigma_A^2(r_B - r_f)$$

For the constant term of the equation,

$$(r_A - r_B)\cdot\sigma_B^2 + (r_B - r_f)\cdot\sigma_B^2 - (r_B - r_f)\cdot Cov_{A,B}$$

$$= \sigma_B^2 \cdot (r_A - r_B + r_B - r_f) - (r_B - r_f)\cdot Cov_{A,B}$$

$$= \sigma_B^2 \cdot (r_A - r_f) - (r_B - r_f)\cdot Cov_{A,B}.$$

Hence, the equation is rewritten as follows,

$$w_A \cdot [Cov_{A,B}\cdot(r_A + r_B - 2r_f) - \sigma_B^2(r_A - r_f) - \sigma_A^2(r_B - r_f)] + \sigma_B^2 \cdot (r_A - r_f) - (r_B - r_f)\cdot Cov_{A,B} = 0$$

Therefore,

$$w_A = \frac{(r_B - r_f)\cdot Cov_{A,B} - \sigma_B^2 \cdot (r_A - r_f)}{Cov_{A,B}\cdot(r_A + r_B - 2r_f) - \sigma_B^2(r_A - r_f) - \sigma_A^2(r_B - r_f)}$$

$$= \frac{\sigma_B^2\cdot(r_A - r_f) - (r_B - r_f)\cdot Cov_{A,B}}{\sigma_B^2(r_A - r_f) + \sigma_A^2(r_B - r_f) - Cov_{A,B}\cdot(r_A + r_B - 2r_f)}$$

Q.E.D.