BRONCO ASSET MANAGEMENT

REQUEST FOR PROPOSAL

November 8, 2023

Prepared For:

CFA Society Orange County

STUDENT MANAGED INVESTMENT FUND

California State Polytechnic University, Pomona

BRONCO ASSET MANAGEMENT

3801 W. Temple Ave,
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November 8th, 2023

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University Overview

Founded in the Fall of 1938, California State Polytechnic University, Pomona (Cal Poly Pomona, or CPP) approaches higher education with a “Learn by Doing” philosophy.

Beginning with a class of 110 students as a satellite campus of California State Polytechnic College - San Luis Obispo, Cal Poly Pomona (CPP) is now a member of the 23-campus California State University (CSU) System, serving over 27,000 students of all backgrounds, including over 2,100 graduate students. CPP is ranked amongst the best public universities in the West and is nationally ranked in numerous categories, such as return on investment, diversity, social mobility, and overall ranking of 3rd in public universities in the West. CPP currently offers bachelor’s degrees in 80 majors, 39 master’s degrees, 13 teaching credentials, and a doctorate across 9 distinct academic colleges. The College of Business Administration (CBA) at Cal Poly Pomona continues the overarching philosophy of hands-on learning for students majoring in Finance, Accounting, and other relevant management disciplines. The Finance, Real Estate, and Law (FRL) Department at the CBA serves over 1,000 students in the major and offers a broad curriculum covering investment management and analysis, as well as niche courses such as Derivatives, Valuation, Financial Modeling, Multinational Financial Management, and Applied Portfolio Management. Additionally, the FRL Department hosts the Dr. J. Douglas Ramsey Financial Markets Room (Bloomberg Lab), complete with twelve Bloomberg terminals. In order for students to get experience with real-world applications, several finance classes have been moved to the lab during lecture hours and have begun integrating Bloomberg terminals into the investment analysis curriculum. The lab is extensively used by our Student Managed Investment Program. CPP also provides various other resources such as the WRDS analytics module, CRSP and Compustat Databases, the Value Line Investment Survey, and a vast collection of academic and industry papers through our Library database. When complemented with a wide range of specialized investment courses, students graduating from Cal Poly Pomona gain a competitive edge in the job marketplace.

Departments

College of Business Administration

Finance, Real Estate, and Law Department

Accounting

Computer Information Systems

Technology Operations Management

International Business and Marketing

Graduate Programs

College of Letter, Arts, and Social Sciences

Economics Department

College of Engineering

Computer Engineering Department

Majors & Minors Offered

Undergraduate Programs

Bachelor of Science in Finance, Real Estate, and Law
Bachelor of Science in Accounting
Bachelor of Science in Economics
Minor in Finance
Minor in Real Estate
Minor in Accounting
Minor in Economics

Graduate Programs

Master of Business Administration
Master of Science Business Administration
Master of Science in Accountancy
Master of Science in Economics
Master of Science in Business Analytics

Investment Courses

Undergraduate Courses

FRL 3000 - Managerial Finance
FRL 3301 - Investments
FRL 3671 - Corporate Finance Theory
FRL 4041 - Financial Modeling
FRL 4311 - Financial Derivatives
FRL 4331 - Seminar in Portfolio Management and Capital Markets
FRL 4401 - Evaluation of Financial Policy
FRL 4611 - SMIF Senior Project
FRL 4631 - Business Forecasting
FRL 4671 - Business Valuation
FRL 4862 - Real Estate Investment Analysis
FRL 4990-01 - Applied Portfolio Management

CFA Preparation

Cal Poly Pomona (CPP) is a member of the CFA University Affiliation Program. Our Finance, Real Estate, and Law (FRL) curriculum covers more than 70% of the topics within the CFA Level 1 Candidate Body of Knowledge (CBOK), including ethics. As a result, many of our students are better equipped to take the CFA Level 1 exam post-graduation. Because of our affiliation with the CFA Institute, the institution has awarded our students scholarships. The FRL Department partners with the student-run Finance Society and Student Managed Investment Club (SMIC) at CPP to inform students about the CFA exam and its long-term benefits. These organizations host events and guest speakers to discuss how the CFA can be an essential tool to further students' careers. SMIC also organizes a study group for CFA Level 1 candidates.

Student Managed Investment Fund

Our SMIF program started in 2017, with the catalyst being a group of students who wanted to compete in the CFAOC competition! The competition has provided a platform for our program structure and content.

Through the commitment of administration, faculty, and most importantly our SMIF alumni, we have grown our program to approximately $500,000 in assets in three portfolios. Additionally, we expect to add substantially to our assets under management with future already committed donations. Most importantly, the SMIF program has had a very influential role in job opportunities and careers for our alumni, as evidenced by the tremendous feedback we receive from graduates and employers.

The Student Managed Investment Program consists of three components: Coursework, Bronco Asset Management (BAM), and the Student Managed Investment Club (SMIC). We are also supported by the campus Finance Society.

Coursework

The Coursework consists of one semester of portfolio research/construction (FRL 4990) during Fall and one semester of hands-on management of the constructed portfolio during Spring (FRL 4611).

Bronco Asset Management (BAM)

Bronco Asset Management is the actual portfolio management arm of our program. BAM staff consists of students who have previously completed the FRL 4990 course and SMIF alumni that serve as mentors. BAM manages all portfolios on an annual basis, with the first half of the year being part of the coursework and the second half of the year being a volunteer commitment as a condition of admittance into the program. Students actively manage the portfolio year-round, closely monitor market events, work with clients, and maintain investment records.

Student Managed Investment Club (SMIC)

The Student Managed Investment Club was established with the primary objective of exposing financial literacy to Cal Poly Pomona students. Through its weekly workshops, it aims to empower students in their financial journeys by covering essential topics in personal finance and investment fundamentals. We frequently host seasoned industry experts who share insights into subjects such as fundamental security analysis and portfolio theory.

SMIC acts as the backbone of the university's Student Managed Investment Fund (SMIF), offering managerial and educational support to the program. Most importantly, SMIC takes the lead in preparing students for recruitment and training for SMIF. In essence, both SMIC and SMIF create an academic space that facilitates in-depth discussions on financial matters, with a specific emphasis on portfolio and equity strategies.

Finance Society

The Finance Society is a student-run organization designed for students who share a common goal of pursuing careers in finance and investment management. This organization provides students with valuable opportunities to explore various career paths within the finance sector as well as gain insights by networking with alumni and industry professionals.

It hosts weekly seminars and welcomes guest speakers to delve into the different roles and aspects of the financial industry. The Finance Society is best known for its annual trading simulation and mock interviews, which replicate real-world financial scenarios, providing students with practical experience.

The members of this club are intellectually driven and motivate each other to strive for leadership positions within the finance industry.

Campus Culture and Support

A hands-on academic experience, that's the secret to Cal Poly Pomona's campus success. The university follows a polytechnic approach where the motto is "learn by doing". Our first hand experience mixed with valuable resources brings life to a campus full of passion.

Unfailingly, Cal Poly manages to promote a diverse and valued community. It does this by encouraging students to join clubs, attend sporting events, join intramural sports, and take advantage of the many student services offered on campus.

More specifically, with the University's College of Business Administration, several programs are offered to prepare students for successful careers including: BAM, CFA SMIF, CFA Institute Research Challenge, Dr. J. Douglas Ramsey Bloomberg Lab, and the Argus University Challenge. With the help of our phenomenal faculty, CPP provides an abundance of resources to support student success. CPP FRL Department Chair, Wei Yu, recognizes SMIF through her incredible support and allows all students to access the Bloomberg Terminals. Our SMIF Program Director, Pawan Tomkoria passionately dedicates significant time and energy to ensure the success of the program.

Team Structure

Our team of 20 students was strategically divided into four groups, each tasked with managing specific segments of our investment process. We established four economic analysis teams dedicated to the United States, Europe, China, and other select Asian countries. Once these economic evaluations were concluded, we restructured our teams to analyze the eleven domestic equity sectors, along with international markets and fixed income. This approach served to expand our team's collective knowledge and played a pivotal role in cultivating our collaborative skills. Furthermore, our class is supported by mentors who bring their professional experience to our program. They contribute their diverse perspectives and innovative ideas, enriching the overall capabilities of the SMIF team. The BAM team structure is shown in our Organization Chart in Appendix I.

Internal Communications

The BAM team communicates through scheduled meetings and an array of different telecommunications such as Zoom, Slack, email and text messaging. A shared Google drive is accessible to all SMIF team members in order to reference all documents, data, presentations, and research discussed during class. The team has business continuity through holidays, including summer months. The BAM team will meet every week during academic sessions and every other week during non-academic sessions.

Meeting Schedule

Required coursework meetings are held weekly at 5:30PM every Thursday in the Dr. J. Douglas Ramsey Bloomberg Lab on campus. Additional mandatory meetings are conducted virtually on Tuesdays on an as-needed basis. BAM meetings are held virtually every Sunday at 8:00PM. SMIC meetings are held on Tuesdays at noon, while Finance Society meetings are held on Thursdays at Noon.

Program Incentives

CPP grants 6 academic units to students participating in the SMIF program, credited as FRL 4990 Applied Portfolio Management and FRL 4611 SMIF Senior Project.

Selection Process

Admission to the Applied Portfolio Management course (FRL 4990) is selective and based on an application followed by an interview process. However, SMIC club membership is open to all students. In addition to the minimum CFA Orange County requirements, applicants should have many of the following characteristics:

1. High overall academic performance.
2. Majoring in a business-related field.
3. Bloomberg Market Concepts certification (mandatory).
4. Completion of the core Finance course "FRL 3000" (mandatory).
5. Have taken an additional investment-related course.
6. Practical knowledge and understanding of the financial markets.
7. Have prior investing experience
8. Ability to work in a collaborative team environment (mandatory).
9. Willingness to commit significant time to course work (mandatory).
10. Genuine enthusiasm and a deep interest in an investment-related career (mandatory).
11. Exhibit strength in articulating and communicating financial concepts.

Any exceptions to the above must be approved by the course faculty

Replacement Process

All SMIF members are required to make a one year commitment to managing the portfolio. Those departing after the year will be replaced by qualifying new members every year. All fund management positions are filled through a voting process.

Background of Students and Faculty

Bronco Asset Management (BAM) is led by a dynamic and diverse team of undergraduate and graduate students who share a profound passion for investments and wealth management. These students have not only showcased unwavering commitment but have also completed various investment and finance-related courses, thereby equipping themselves with the knowledge that serves as the cornerstone of BAM's success. The diverse background and experiences within the group provides a multifaceted approach to decision-making, a key aspect in our achievements.

BAM consists of a roster of high-achieving individuals and prominent campus leaders who actively engage in extracurricular activities. Many team members have earned esteemed scholarships and distinctions, such as placement on the Dean's and President’s honors list. Our team is set apart by our track record of securing internships and launching careers with industry giants including, PIMCO, Capital Group, Citigroup, Goldman Sachs, JP Morgan, DoubleLine, Research Affiliates, Cathay Bank, EY, Bank of America, MassMutual, LPL, Edgewood Ventures, Wilshire Associates, UBS, and Travelers.

The BAM team consists of an eclectic group of individuals that bring experience, intellectual capital, and enthusiasm together. Each student offers a unique background, a wide array of knowledge, and an intense interest in investment research. This provides the team with multiple insights and viewpoints on a variety of topics. Our team embodies the "Learn by Doing" philosophy that Cal Poly Pomona is known for. CPP also takes pride in its student diversity which is reflected in our investment team as well. The CPP team consists of diligent and knowledgeable individuals who strive to provide its clients with the best possible product through a balanced reward/risk management, while also embodying a high standard of ethics and transparency.

SMIF alumni stay heavily engaged with BAM and provide ongoing guidance to the team. Their experience and knowledge is invaluable in all aspects of portfolio construction and management; their effort is truly appreciated by the current students. We believe the involvement of alumni is a significant differentiator for CPP.

In addition to our student body and alumni, Professor Pawan Tomkoria, our Faculty Advisor, brings over 30 years of experience in the medical and electronics industry. He has held various roles in finance, general management, and international business. Professor Tomkoria's unique blend of industry insight and academic excellence provides students with an invaluable mentorship, preparing them for real challenges of the investment world.

Furthermore, our Faculty Advisor and Department Chair are deeply committed to the SMIF program, dedicating substantial time and resources to BAM's growth and success. Their unwavering focus on the client and year-round portfolio management fosters a culture that is both supportive and challenging, propelling students to reach their fullest potential. This dedication ensures that BAM continues to thrive and achieve new heights in investment and wealth management.

Why our team is uniquely qualified

The BAM team possesses several unique qualifications that set us apart in managing investment portfolios. With a successful track record managing the CFAOC funds for six years, we combine an eclectic, diverse team infused with experience, intellectual depth, high energy, and unwavering enthusiasm. Our decision-making is rooted in deep fundamental analysis and strong ethical values, further enhanced by team members with personal investing experience. Each team member meticulously applies their financial knowledge to construct data-driven portfolios grounded in thorough research and well-supported projections. Finally, our commitment to excellence doesn't stop there. Our unwavering focus centers on our clients and their specific needs and requirements. We diligently monitor the portfolio in real-time, ensuring that it aligns with our client's objectives on a year-round basis, including during non academic sessions.

Investment Philosophy

BAM/SMIF strives to maximize risk-adjusted returns for our clients while keeping their objectives and expectations at the core of our investment decisions.

Our investment decisions are driven by fundamental research meant to build long-term wealth for our clients.

The portfolio construction and management processes are positively impacted by a diverse team that provides multiple perspectives.

All decisions will undergo a rigorous analytical process. We will remain adaptive with our portfolio in order to accommodate fluctuating market conditions.

We believe markets are efficient in the long-term although short-term inefficiencies do occur. By utilizing an active management approach, we can capitalize on those opportunities to add additional value for our client.

Our approach will balance risk and reward with a conservative inclination.

Overall, the Student Managed Investment Fund will embody Cal Poly Pomona's "Learn by Doing" philosophy.

We will continue to evolve our program at CPP, building upon guidance and contributions from our SMIF alumni.

BAM SMIF will operate with competence, diligence, and in an ethical manner, by placing the interest of the client before our own.

Passive Management

The BAM team follows an active strategy in the management of our portfolios. However, if any sector makes up less than approximately 10% of our overall equity portfolio, it will be represented by a broad sector Exchange-Traded Fund (ETF). Due to their relatively low allocation weights, investing in ETFs for these sectors helps reduce unsystematic risk through diversification. We also choose ETFs to optimize the use of BAM's limited resources.

Given the above, we will invest in ETFs for six sectors: Energy, Utilities, Real Estate, Materials, Communications, and Consumer Staples.

Additionally, our international investments will be represented by an actively managed mutual fund. Within the Fixed Income portion of our portfolio we take an active approach to allocations within fixed income sub-asset classes, and then use ETFs to invest in each class.

Market Overview & Asset Allocation

Introduction

As a basis for investment decisions BAM utilizes an investment philosophy focused on maximizing risk-adjusted returns that prioritize client objectives. Our capital market outlook is driven by fundamental analysis with a top down approach aimed at generating long- term wealth for the client. Our analysis begins by assessing global economies, developing a consensus and then utilizing our analysis for equity and fixed income research. BAM employs sources from Bloomberg, IMF, FRED, and more to conduct research. Allocation of capital is determined based on an economy's level of alignment with our investment priorities.

BAM's analysts have diligently prepared status reports on the economic condition of the United States of America (U.S.), the European Union (EU), China, Japan, India, and South Korea. Our capital allocation will be founded on this analysis.

U.S. Economic Outlook

BAM's U.S. economic outlook begins with the consensus from the following sources: Bloomberg, the United States Federal Reserve (Fed), the International Monetary Fund (IMF), the European Union Commission, and The Wall Street Journal (WSJ). After analyzing the consensus, BAM formulates its own outlook on the trajectory of the U.S. economy. The current market and BAM consensus are shown in the table below.

For 2024, BAM agrees with consensus that the U.S. Economy will experience slow GDP growth at 1.0%. The slow growth is attributed to rising interest rates and higher inflation putting downward pressure on real GDP. The increasing interest rates will cause consumers to cut back on discretionary spending. As the economy and labor markets remain hot, we expect to see higher than expected inflation at 2.9%.

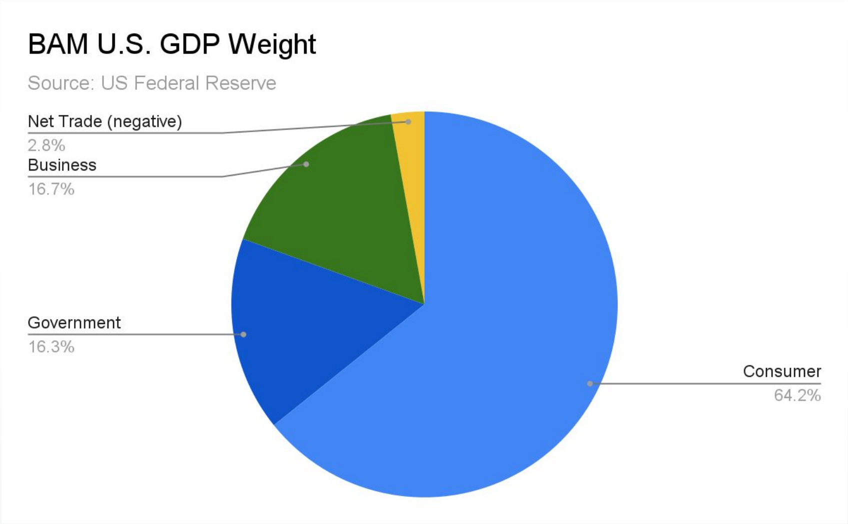
We are expecting Corporate Spending to slow down as higher interest rates put downward pressure on consumer spending, and as interest expenses increase. We expect Government Expenditures to grow at 3.6% as federal budgets are projected to increase. Net exports are projected to remain constant, as the U.S. remains an import economy.

We expect inflation to decrease but remain relatively high at 2.9%, until interest rate adjustments show a larger impact in US spending. As the U.S. goes through higher interest rates, and inflation, this will lead businesses to cut back on spending. With regards to unemployment BAM believes that the U.S. demographics support a continuing shortage of workers and therefore a stable unemployment rate. As a result our unemployment forecast is below consensus. Additionally, we expect the economic slowdowns to decrease the 10 year Treasury Bond yield.

U.S. Economic Indicator Bloomberg Projections				*BAM Projection*	
	2022A	**2023A**	**2024E**	**2024 BAM**	**2025 E**
GDP Growth	1.7	2.0	1.0	1.0	1.8%
CPI%	8	4.1	2.7	2.9	2.3%
Unemployment	3.9	3.7	4.3	3.7	4.2%
10 year Treasury	3.9	4.5	4.6	4.0	3.6%
Source: Bloomberg					

Last Updated: October 31, 2023

To arrive at our assessment of the market consensus, BAM conducted its own deep research into the U.S. economy. U.S. GDP comprises four types of spending: Consumers, Businesses, Government, and Trade (Net Exports). In our research we found Net Trade to be insignificant contributor to GDP growth. Each component's relative contribution and our outlook for 2023-24 are discussed below:



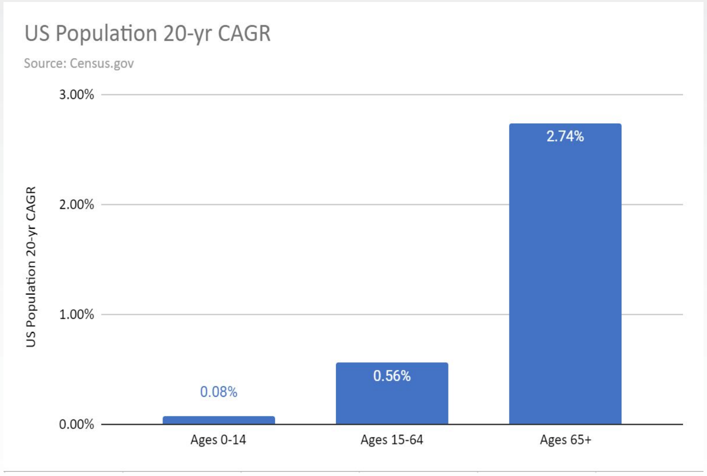
Consumers and Impact on Inflation and Rates

Consumer Spending

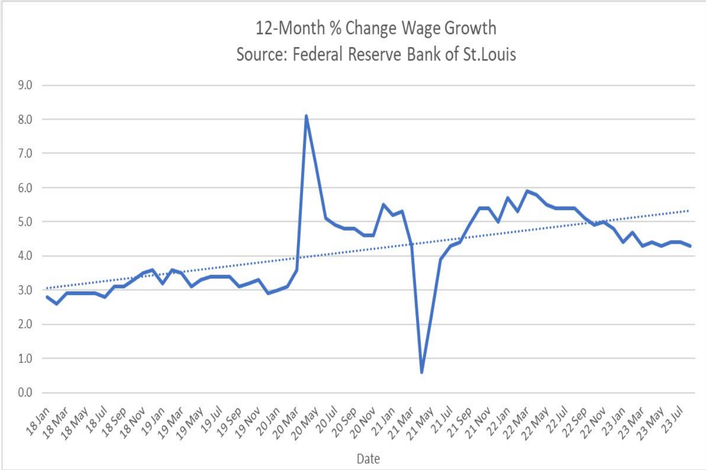
Consumer spending is the largest driver of Gross Domestic Product (GDP) in the United States, accounting for approximately 64%. BAM posits that consumer spending is driven by consumer income and spending habits. When determining our projections for future income we took into account potential labor force size, wage inflation, and consumer savings and borrowing.

We observe a five year trend indicating sluggish growth of 0.22% in the U.S labor force. Over the past five years, the future labor pool (ages 0-14) grew at a low rate of 0.21%, while the rate of retirees (aged 65+) grew at a more rapid rate of 3.29%. The trend is further evident when comparing new jobs added to the actual growth in the labor pool. These data suggest the U.S. will experience an ongoing pattern of limited labor force growth in the near future. Analysis of the working age population demonstrates a tight labor market, which has the potential to constrain economic growth while simultaneously propelling wage inflation.

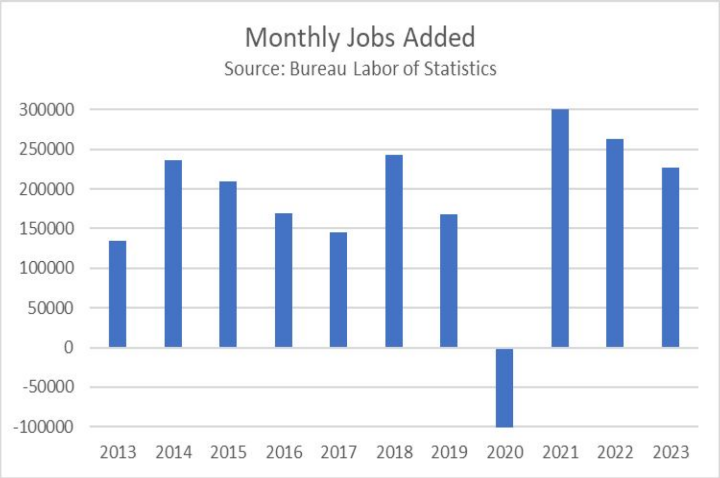
The median wage inflation growth over the past 3 years is approximately 4.3% which is slightly higher than the 20-year wage growth median of 3%. We believe that the tightening labor pool and lack of labor force is contributing to this higher wage growth. During COVID, the median wage growth spiked artificially and peaked at 8.1% in April 2020 while also taking its lowest dip in April 2021 to yield growth of only 0.6%. Eventually, after COVID, wage growth began to increase and stayed steadily around 4.3%.

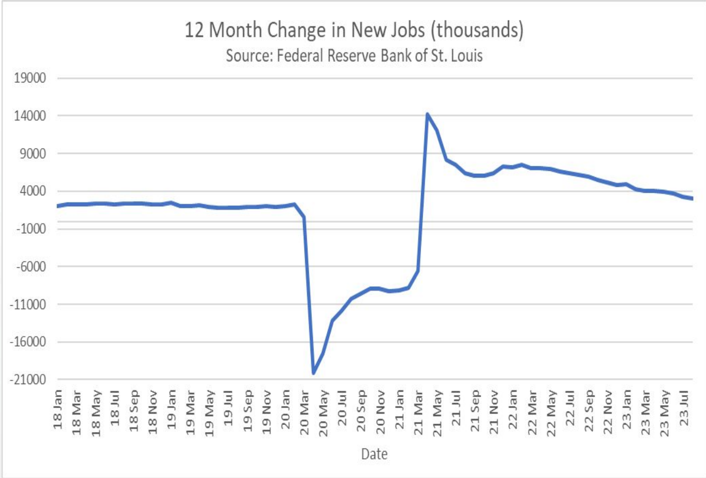


The future of U.S. workers is not high enough to meet increasing labor demands, as shown by the 0.08% and 0.56% 20 year growth CAGRs for 0-14 and 15-64 year olds.



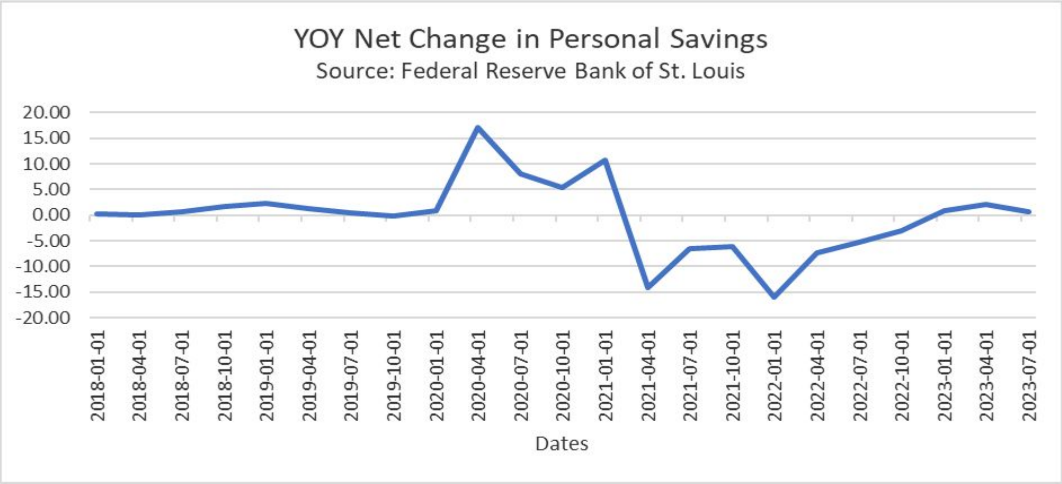
Wage growth has been slightly higher than historical levels

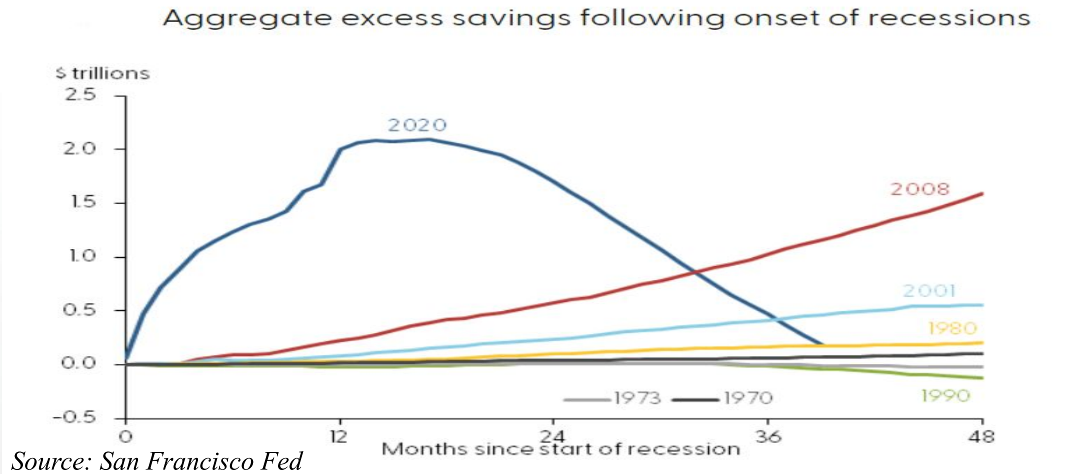




We expect monthly jobs to revert back to pre-pandemic levels

The final factors that contribute to consumer spending are savings and debt. Consumer savings peaked at approximately 26% during April of 2020, soon after the $1400 stimulus checks were released to the public. We believe consumers have depleted a majority of their savings since Covid through revenge spending, particularly, during a high inflationary period. With low consumer savings and tight monetary policy, we believe the average consumer will increase savings while current interest rates remain high. We expect a 1% increase in consumer savings, a number we expect will slow economic growth. Given the currently high interest rates, we anticipate consumers will be inclined to reduce their borrowing in an attempt at not increasing their debt.





Source: San Francisco Fed

Consumers have spent almost all of their excess savings from the 2020 recession.

BAM concludes the labor supply will remain tight leading to a continued increase in wages. Consumer wages and a gradually increasing labor pool allow us to believe economic growth will be driven by high consumer spending.

However, excess post-covid spending, which caused heavy declines in savings suggests that the average consumer is not as healthy as earlier; ultimately implying slow growth for the economy.

Inflation

BAM's projection for inflation is at 2.9% which is slightly above the consensus projection of 2.7%. Inflation is driven by wage growth and the change of prices of different commodities, therefore, our inflation projection was calculated through an evaluation of the Bloomberg Commodities Index and through solid assumptions of the U.S. economy. Our baseline assumption is that the U.S. economy is made up of 70% labor and 30% materials. Our next assumption is that U.S. wage growth for the next year is 4.3%.

To determine the materials weight of inflation, we used the December and January futures prices of WTI Crude, Copper, Corn, and Soybean, as well as calculating the weight of energy, agriculture, and metals from the Bloomberg Commodities Index. Next, we designated the year-over-year change in WTI Crude, Copper, Corn, and Soybean futures to represent each of the commodity classes. The materials weight of inflation was determined by multiplying the overall weight change of materials prices, -0.53%, by 0.3 (30% materials assumption), and coming out to -0.16%. The labor weight of inflation was computed as 3.01%, calculated by multiplying the 4.3% wage growth by 0.7 (70% labor assumption). After adding both results (3.1% and -0.16%), we came to our projection of 2.85% inflation.

Commodities Futures Prices (Dec 24)

	Dec- 23	Dec - 24	YoY Change
WTI Crude	$84.39	$77.29	-8.95%
Copper	$356.55	376.95	5.72%
Corn	488.75	517.25	5.83%
Soybean	1288	1253.25	-2.70%

Source: Bloomberg

Commodities Weights of Change

Energy composite *(YoY Change * Energy Commodity Index Weight) =*	-2.99%
Metals Composite *(YoY Change * Metals Commodity Index Weight) =*	1.95%
Agriculture Composite *(YoY Change * Agriculture Commodity Index Weight) =*	0.51%
Total Commodities Change (Sum of Energy, Metals and Agriculture Composite) =	-0.53%

Source: Bloomberg Commodities Index on (10/16/23)

Inflation Calculation

Labor Weight	70%	Materials Weight	30%
Wage Growth	4.3%	Commodities Change	-0.53%
Total Labor Weight of Inflation *(Labor Weight * Wage Growth) =*	3.01%	Total Materials Weight of Inflation *(Materials Weight * Commodities Change) =*	-0.16%

BAM 2024 Inflation Projection	
Inflation Projection *(Total Labor Weight + Total Materials Weight)*	2.85%

Interest Rates

Inflation has accelerated at an alarming rate over the last 2-3 years leading to aggressive rate hikes by the Fed in order to curve inflation. Fed rates are currently hovering between 5.25%-5.50%, with the most recent hike occurring in August 2023. The Consumer Price Index has been consistently trending down since the high of 9.1% in the second quarter of 2022 (Figure A). The Fed wants Personal Consumption Expenditures (PCE) to drop to 2% (Figure B) and remain there, but inflation has not been decreasing as fast, leading us to believe the Federal Reserve will keep interest rates between 5.25% and 5.5% for a longer period of time as they wait for inflation to dwindle. Once inflation does subside, the Federal Reserve may begin to explore the possibility of lowering interest rates.

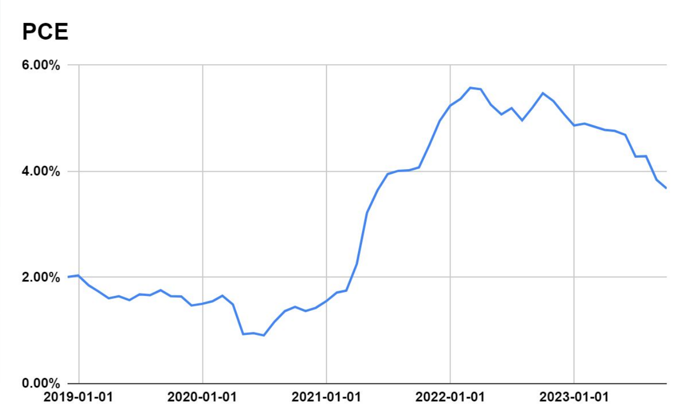


Figure A (Source: Bloomberg)

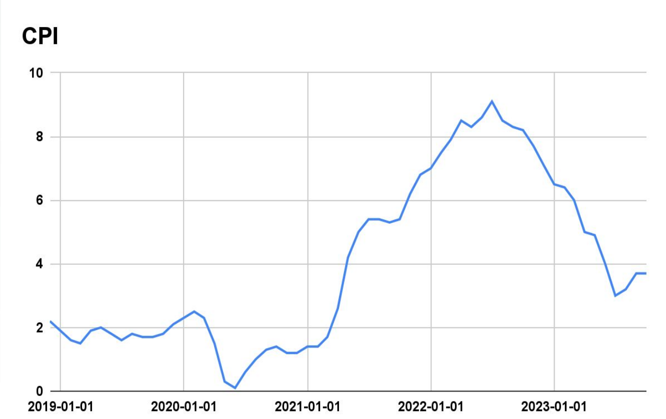


Figure B (Source: Bloomberg)

Consumers Summary

We believe that consumer spending will still be relatively strong, increasing by 3.6% in 2024 due to strong wage growth resulting from a slowly growing labor force, a tightening labor market, and a consistent amount of consumer borrowing as observed from previous years. However, we project that consumers will begin to slightly increase their savings after the heavy post-pandemic spending spree which depleted their stimulus savings. Ultimately, BAM forecast that strong wage growth will push inflation slightly higher than consensus projections.

Business Expenditures Analysis

Business Expenditures contain two sub-categories Non-Residential Investments (78%) and Residential Investments (22%).

NON-RESIDENTIAL INVESTMENTS

We believe corporate profits will drive business spending. Current data shows U.S. corporate profit decreased by approximately 3% year over year in Quarter 2 of 2023. As we expect economic growth next year, we expect corporate profits to grow slightly above nominal GDP or approximately 5%. While high interest rates will cause buyers to be more hesitant to spend on bigger investments as interest expenses increase, investments for labor productivity and security will be positive drivers.

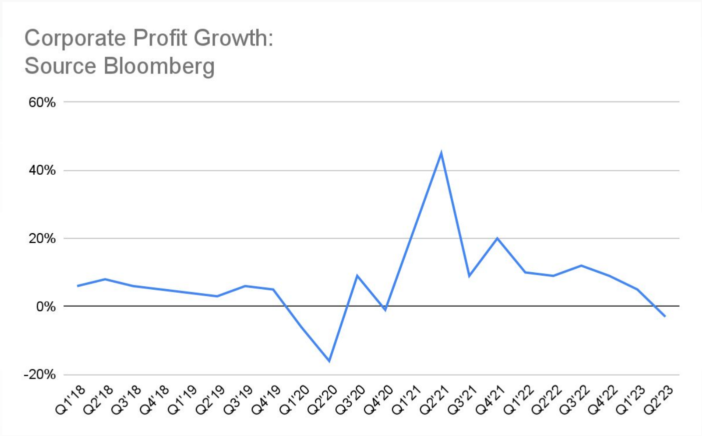


Figure C

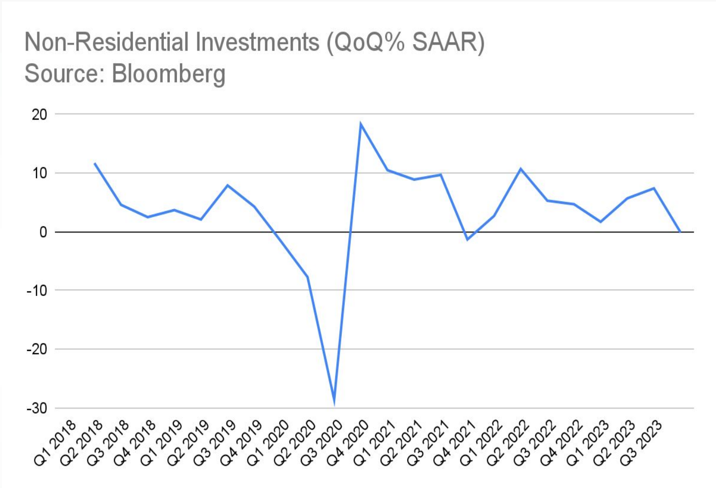


Figure D

U.S. Dollar Outlook

The U.S. Dollar remains the world's reserve currency and a reliable store of value for investors worldwide. The US dollar has risen 4.5% in 2023 but a much more substantial 17% over the last two and a half years. As we look out to the end of 2024, the futures market is forecasting approximately a 7% depreciation. This should provide some tailwind in terms of corporate profits and support business investment. A weakness in the dollar may additionally help exports.

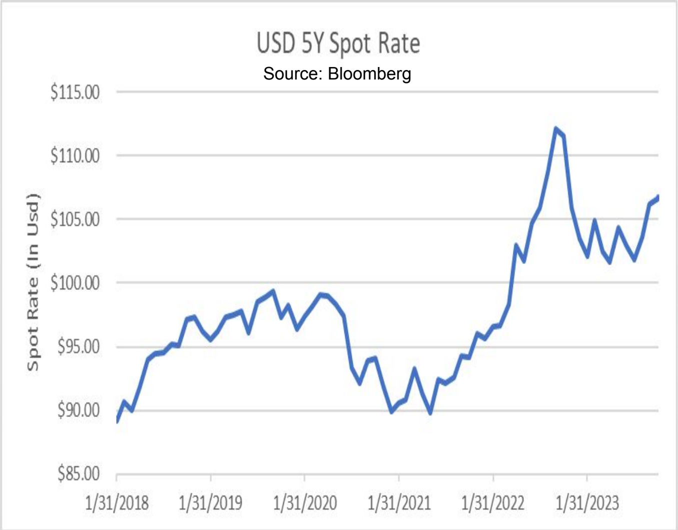


Figure E

RESIDENTIAL INVESTMENTS

Consumer income and mortgage rates have a huge impact on the economy. As interest rates rise, we see consumers become more conscious of financing homes. As we see home prices increase along with interest rates increase, we expect to see home affordability (Figure G) continue to decrease. These factors have led to a decrease in home sales (Figure F) and new housing construction; however, there is some support for new construction as existing homeowners are hesitant to sell and roll over their low mortgage rates. This holdout effect has led to lower supply and increased prices. As a result, we expect home sales to slow down as consumers cut back on spending due to higher interest rates, which will be a drag on GDP.

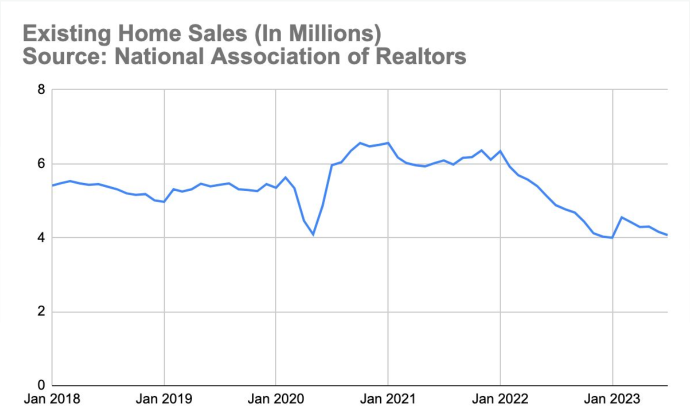


Figure F

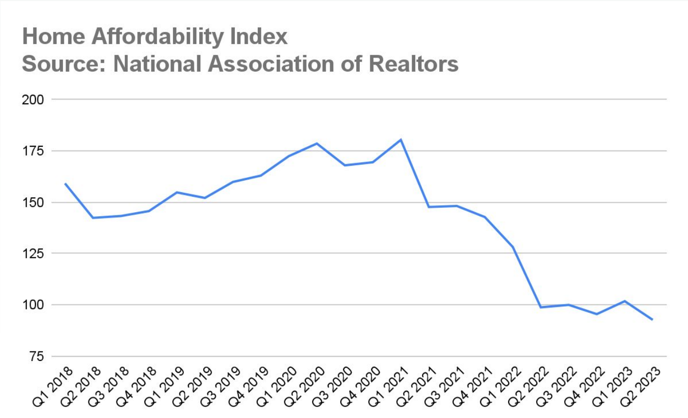


Figure G

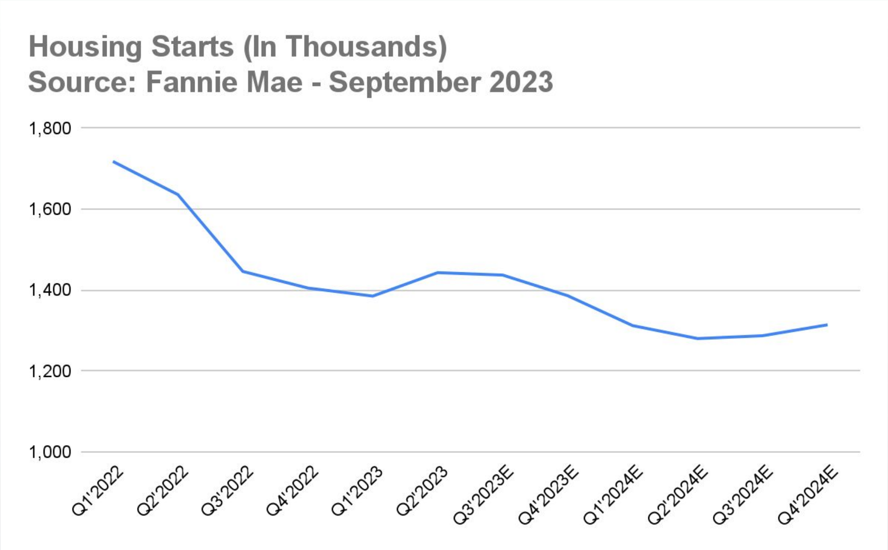


Figure H

Government Expenditures Analysis

Current estimates show government spending will grow nominally at 3.6% in 2024 due to high federal budgets and planned spending. Federal government budgets are projected to increase by one trillion dollars next year and state and municipal governments will grow proportionally to the federal government. Although estimates show growth, there is concern over this projection being overly-optimistic due to political gridlock, high debt levels, and overall large deficits. Congressional gridlock may prove getting new spending approved to be difficult, especially as public concern for high debt levels and a large deficit grows. Public debt still has not lowered to pre-pandemic levels. These factors lead us to believe there is risk for smaller growth.

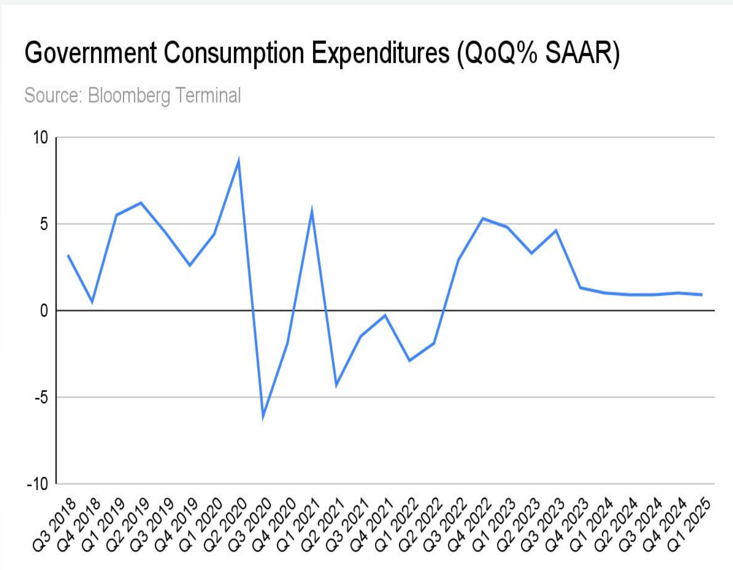


Figure I

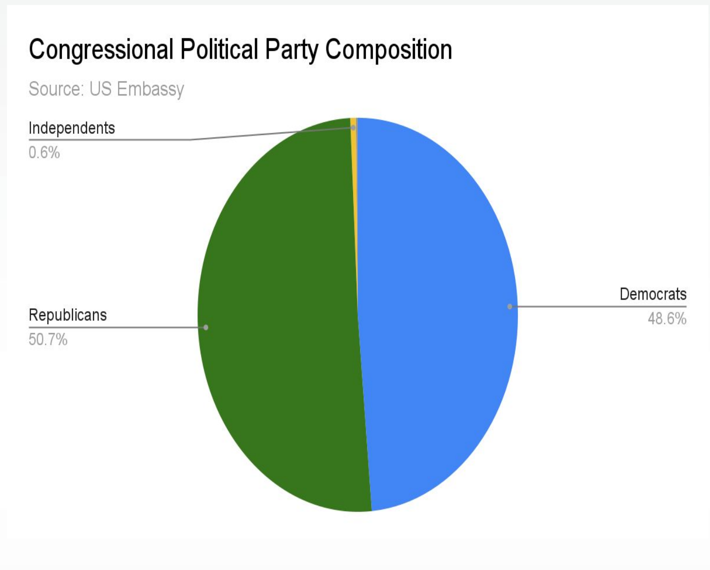


Figure J

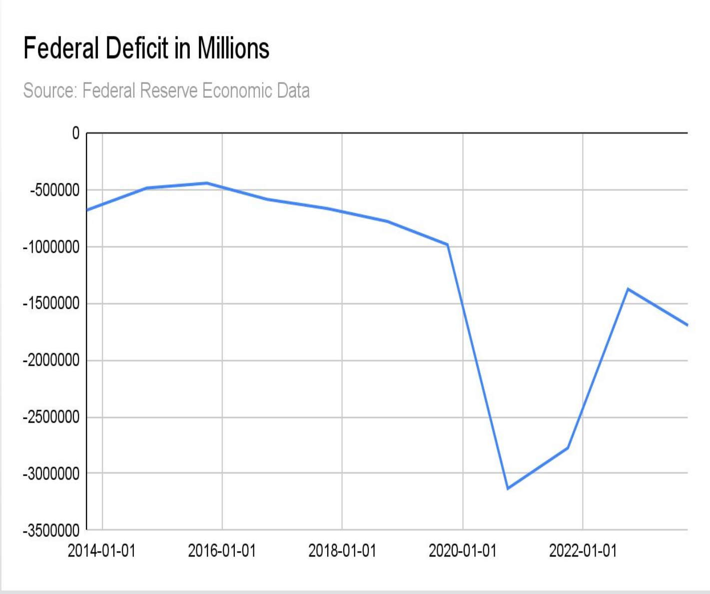


Figure K

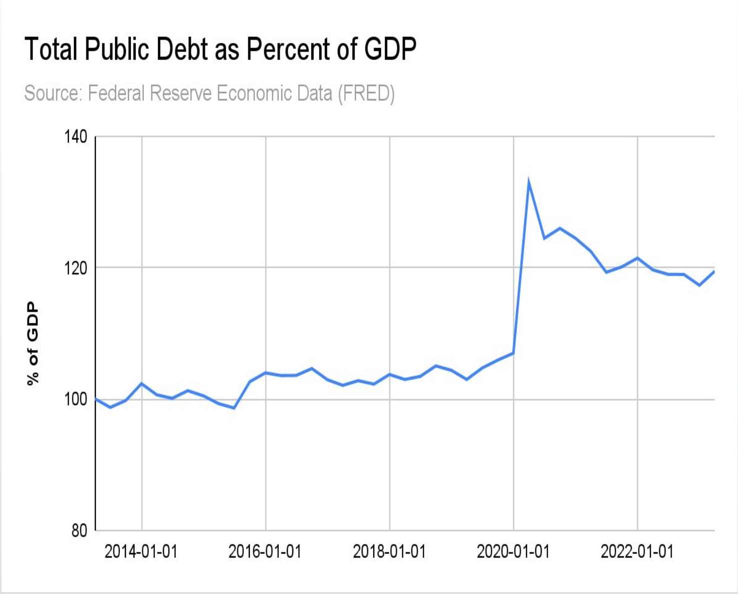


Figure L

Net Trade Analysis

The United States has the highest trade imbalance in the world. The US trade deficit is expected to be nearly $1 trillion in 2023 and is projected to detract -0.1% from GDP growth. We do not expect trade to have a significant impact on growth.

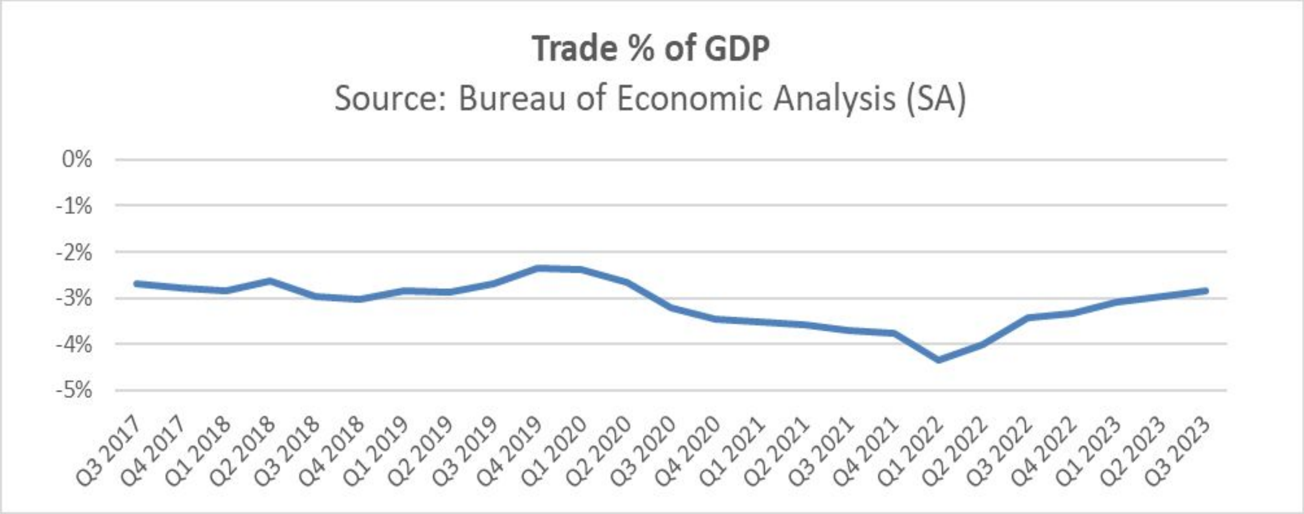


Figure M

U.S. Economic Outlook: Summary

After evaluating consumer, corporate, and government spending as well as net trade, we believe that the U.S. economy will grow at a slow rate aligned with consensus. We conclude that demographics will lead to a tighter labor market and high wage growth which will increase consumer income and spending, leading to slightly above consensus inflation. However, we believe that high interest rates and depleted COVID-19 savings will slightly deter the high potential for consumer spending. Furthermore, we believe that high interest rates will put downward pressure on corporate profit margins. BAM also expects inflation to have harmful effects on consumer spending. As a result, we believe interest rates will come down later in 2024. We believe that government spending will increase due to high projected budgets; however, we believe that there are potential headwinds that can slow government spending such as the political gridlock, and the increase in government deficit post-COVID. Finally, we believe that trade will remain an insignificant factor in GDP growth.

E.U. Economic Outlook

The table below summarizes the consensus outlook on the EU economy derived from Bloomberg, ECB. and IMF.1313

European *Union*					
Consensus	**2021**	**2022**	**2023E**	**2024E**	**2025E**
GDP Growth	6.0%	3.5%	0.6%	1.1%	1.8%
CPI%	2.7%	8.9%	6.3%	3.0%	2.3%
10 Year Yield	0.57	3.56	3.50	3.20	3.15
Unemployment	7.4%	6.5%	6.7%	6.6%	6.8%
Source: Bloomberg					

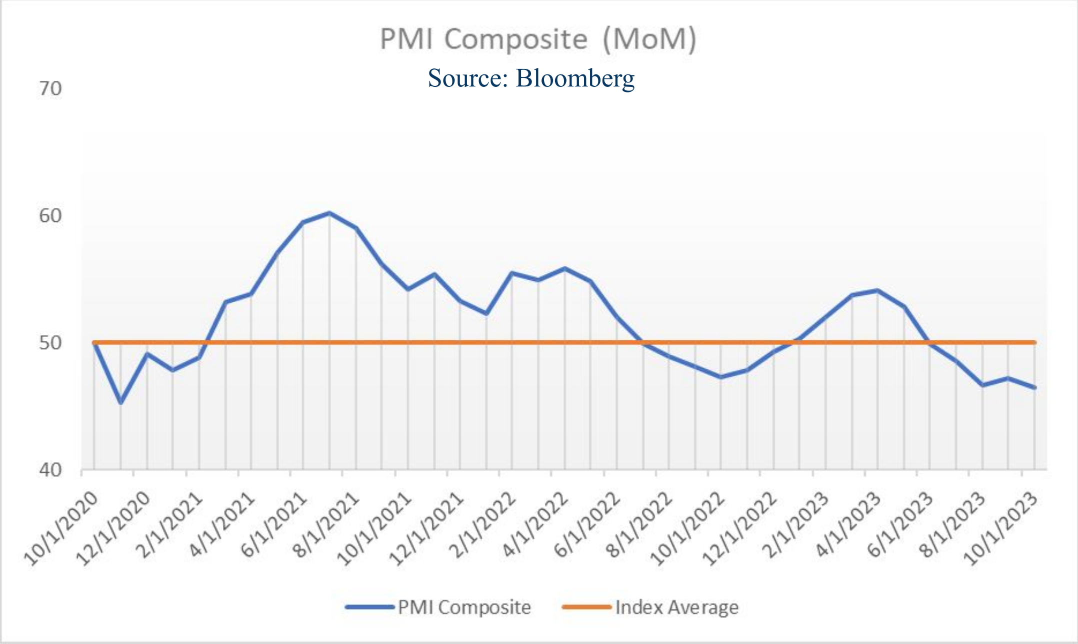
Last Updated: October 25, 2023

Europe faces the difficult task of simultaneously subduing inflation, sustaining economic growth, and preserving financial stability, as it grapples with the fallout of the energy crisis, geopolitical headwinds fueled by Russia's invasion of Ukraine and the aftermath of the COVID-19 pandemic. While declining, inflation still remains above the ECB's medium term inflation target of 2%. Growth has collapsed since the middle of last year as inflation lowered households' real incomes. A recession was avoided this winter thanks to sharply lower energy prices and government relief measures. Following the fastest tightening in decades, monetary policy is starting to have an effect, and financial sector risks have materialized. The European Commission has trimmed its 2023 and 2024 forecast for economic growth for the EU economy as demand continues to suffer and the bloc's largest economy Germany slipped into a recession this year. The OECD however, projects GDP growth to slow to 0.9% in 2023 and then gradually recover and strengthen to 1.5% in 2024.

Purchasing Managers Index - Composite

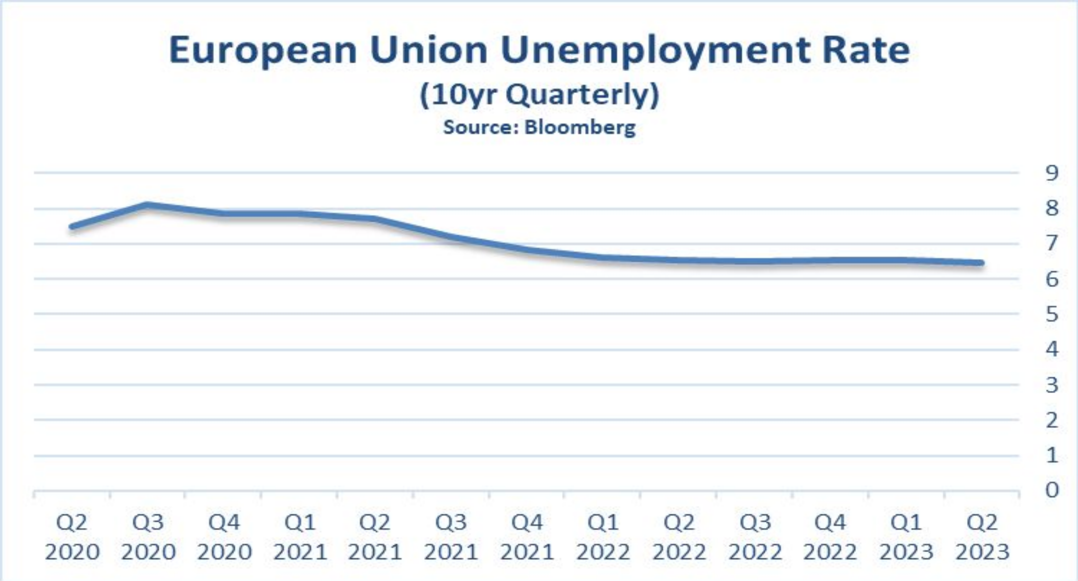
Composite PMI for the Eurozone has been on the decline for 6 consecutive months starting in May 2023. This has been a noticeable decrease in PMI for the Eurozone excluding the pandemic in the past 2 decades. Manufacturing PMI has not been above the 50 benchmark for a consecutive 16 months. This downward trend in manufacturing confidence is attributed to the war in Ukraine as transportation, raw materials, and costs of energy continue to rise. On the other hand, service confidence decline is due to the decline in orders; a signal to the market the beginning of the contraction period going into 2024.

Economic activity broadly stagnated over the first half of the year and is likely to remain subdued in the coming months. Weaker foreign demand and tight financing conditions are dampening growth, especially in the manufacturing sector. The services sector, which had been resilient so far, is now starting to decrease closer to manufacturing levels. Lastly, geopolitical headwinds have been the main contributors to the decline leading to the poor performance in PMI surveys.



Unemployment

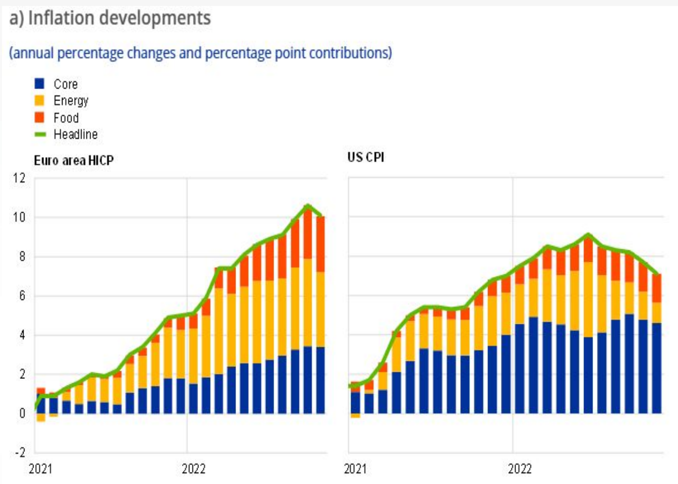
The labor market in the EU suffered disruptions from the COVID-19 pandemic and the war in Ukraine. The EU's "4 employment guidelines" are to boost demand for labor, enhance labor and skills supply, improve the efficiency of labor markets, and promote fairness by combating poverty and promoting equal opportunity. BAM recognizes the historical success and increased efforts of the EU in lowering their unemployment rate, however, we also expect that the current monetary policy will have an impact on unemployment rates as the economy slows down. BAM anticipates that these factors combined will result in a slight increase in unemployment rate; contributing further to the slow economic growth.

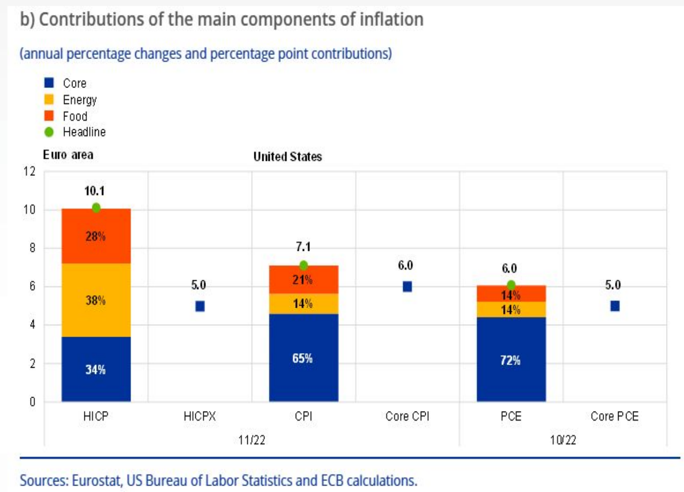


INFLATION AND INTEREST RATES

Even with UK inflation easing, the Bank of England has remained firmly hawkish despite markets getting increasingly dovish regarding the near term policy path. The European Central Bank's key interest rate will remain at 4% as it opted to pause in October after 10 consecutive hikes. The ECB repeated its message that rates at current levels would help bring inflation to target if "*maintained for a sufficiently long duration*." The Bank of England, Swiss National Bank and U.S. Federal Reserve all held rates steady in September.

Underlying inflation, however, is proving more stubborn than headline inflation, which includes energy, food, and other more volatile items. Bringing it back to target efficiently, remains a matter of urgency. Prolonged inflation means prolonged high real interest rates, which will hurt private and public investment and therefore future growth. The key rate is set to remain at a record high of 4%, after 10 consecutive hikes that began in July 2022 and pushed real rates back into positive territory for the first time since 2011.





Headline inflation has increased sharply in the euro area and has been higher since July 2022. Relative to the US, energy prices, post russia separation have been a major driver and continue to be a bigger factor than the US. We believe the EU will struggle to bring inflation down to their target.

E.U. Economic Outlook Summary

The near-term economic outlook for the euro area is bleak, owing largely to weaker domestic demand. High inflation and tighter financing conditions are dampening spending. This is weighing especially on manufacturing output, which is also being held down by weak external demand. Services remain more resilient, particularly in contact-intensive sub sectors such as tourism, but momentum is slowing in the services sector. The economy is expected to remain weak in the short run, but with a positive outlook for the future. In the long run, falling inflation, rising incomes, and improving supply conditions should support the recovery.

BAM remains cautious in Europe Equities' exposure compared to US equities and sees little evidence of optimistic sentiment in the region. The relative growth, inflation and policy differential between Europe and US has led us to deviate from European exposure regardless of potential growth prospects.

China Economic Outlook

China, the globe's second-ranking economy, has become a central figure in international commerce, technology, and politics. While China's economy is anticipated to show strength following the elimination of its zero-COVID policy, it has thus far failed to demonstrate this. Despite a spark in GDP growth after lifting of the policy, China now finds itself struggling with subsequent challenges including geopolitical tensions, internal property market concerns, high fiscal debt, and an aging population. These challenges have caused China to miss its targeted 5% GDP growth for the year, it's lowest growth target in decades. As China struggles to reach its growth targets and stabilize its property sector, BAM expects China to continue facing economic headwinds for the foreseeable future.

China's Economic Outlook

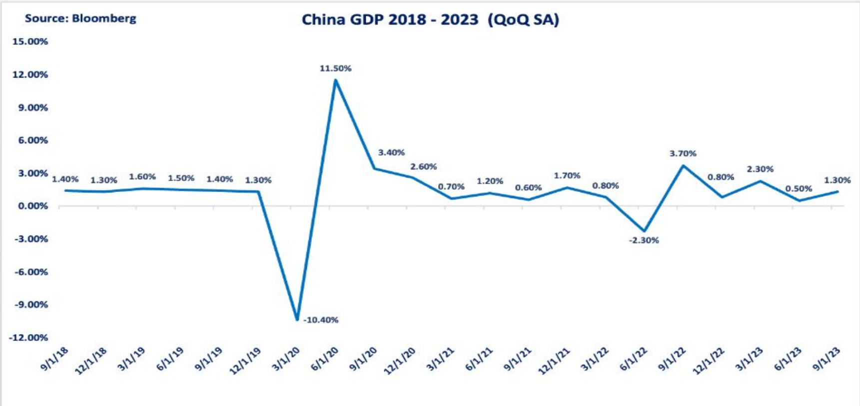
Consensus	2023E	2024E	2025E
GDP Growth Rate	5.2%	4.5%	4.5%
CPI %	0.5	1.8	2.0
10-year Rates	2.6	2.6	2.5
Unemployment Rate	5.2	5.0	4.9

Source: Bloomberg

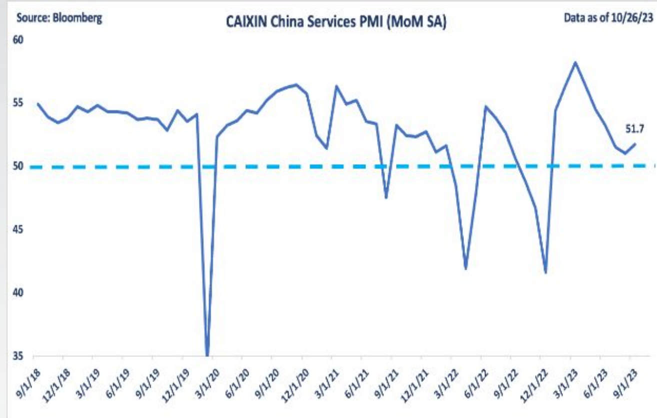
Last Updated: October 27, 2023

Gross Domestic Product

In Q2 of 2023, China's GDP growth slowed to 0.8%, a decline from the 2.3% registered in Q1. This shift reflects the diminishing post-COVID economic rally, largely due to decreased consumer demand. Two critical sectors, manufacturing and real estate, have significantly influenced this GDP downturn. Manufacturing downturn affected both China's domestic landscape and global supply chains. Real estate, which accounts for 29% of China's GDP, is grappling with turbulence. In August 2023, China's Manufacturing PMI rose slightly to 49.7 from 49.2 in July. Values under the 50-mark highlight a contracting manufacturing sector, evident for five months. This prolonged contraction hints at reduced business optimism, possible job cuts, and supply chain disruptions, threatening China's trade balance—especially since exports and services comprise 20.8% of China's GDP. Services PMI for August 2023 dipped to 51 from 51.5 in July. While some segments like healthcare remain stable, others like retail may face challenges amidst the uncertain economic climate.

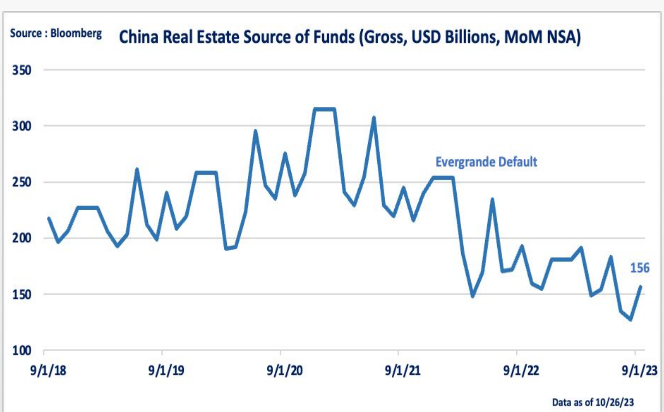


China GDP



China: Real Estate Sector

Significant disruptions in China's real estate sector are epitomized by Country Garden's daunting RMB 48.9 billion ($7 billion) loss in H1 2023 and subsequent defaults in October 2023. These struggles symbolize broader challenges in the real estate sector, exacerbated by issues like overbuilding and excessive borrowing. Moody's rating downgrade and Fitch's grim home sales forecast amplify these concerns. BAM believes the real estate sector's contribution to China's GDP, an economic bedrock, cannot be understated. A crisis here could induce a larger economic downturn. The sector's distress stems from the Evergrande default in 2021, which constricted financing avenues for real estate, affecting households and the broader economy. Furthermore, a marked drop in consumer confidence since 2022 suggests a cautious trend among households. As a result, heightened savings and reduced property investments could lead to a drop in aggregate demand and subsequent economic slowdown.

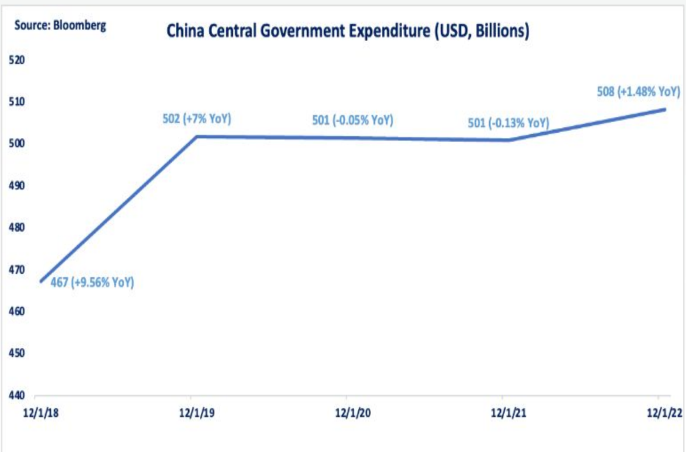


China's RE Source of Funds

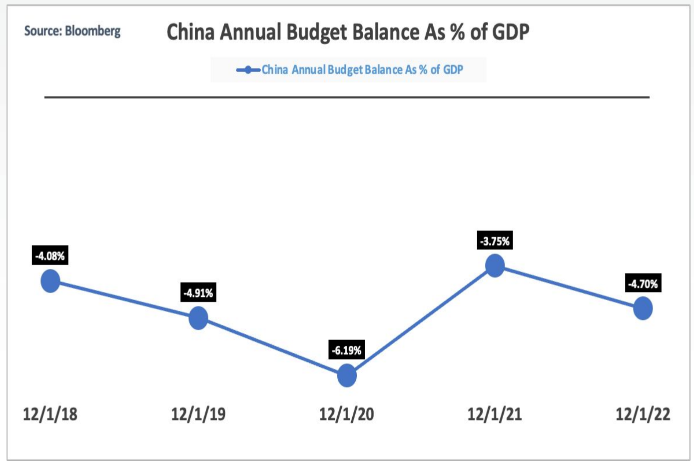
China Consumer Confidence

Chinese Stimulus Stalemate

In response to these challenges, conventional economic wisdom would advocate for Keynesian stimulus measures. However, under President Xi, there's a clear leaning towards fiscal restraint, especially considering the prevailing budgetary deficit. Furthermore, it is clear that Xi is fixated on global security rather than domestic economic performance. This can be seen in the figures shown below, which display a slowdown in the support from the central government. Still, the People's Bank of China (PBOC) has made subtle monetary adjustments. Lowered interest rates and reductions in foreign exchange reserves aim to boost liquidity. Additionally, proposed tax breaks in sectors like childcare hint at efforts to encourage spending and lighten household financial strains. The questions remains, however, if China is willing to lift consumer confidence and solve a troubled property sector.



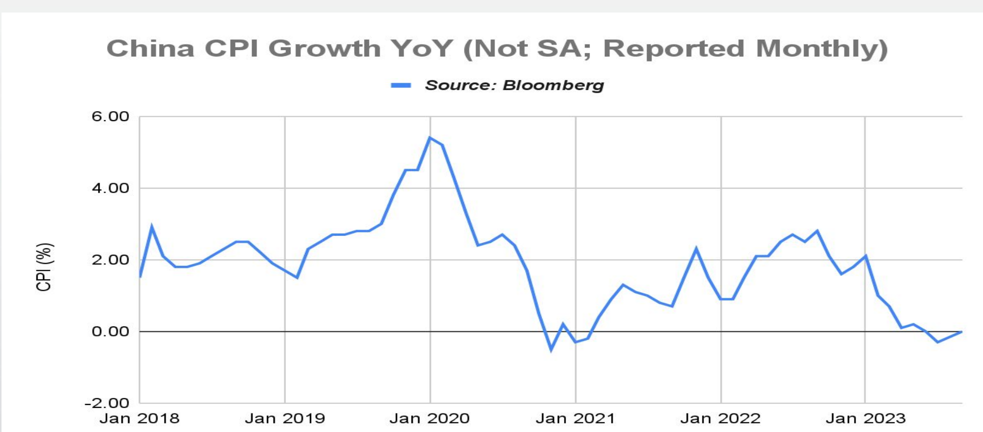
Government Spending Trend



Budget Balance % of GDP Trend

Inflation

The prevailing analysis of China's economic growth indicates an evident deceleration, which is further corroborated by the Chinese Consumer Price Index (CPI) data. Since the beginning of this year, the CPI has consistently exhibited a downward trend, signaling substantial deflationary pressure on the Chinese economy. Notably, prices of essential commodities, particularly staple foods, have displayed a significant decline of approximately 1.7% on a year-over-year basis, with pork, in particular, experiencing a staggering 26% drop. This pervasive deflationary environment in China is contributing to a decline in consumer spending, necessitating companies to adjust their pricing strategies and increase savings.

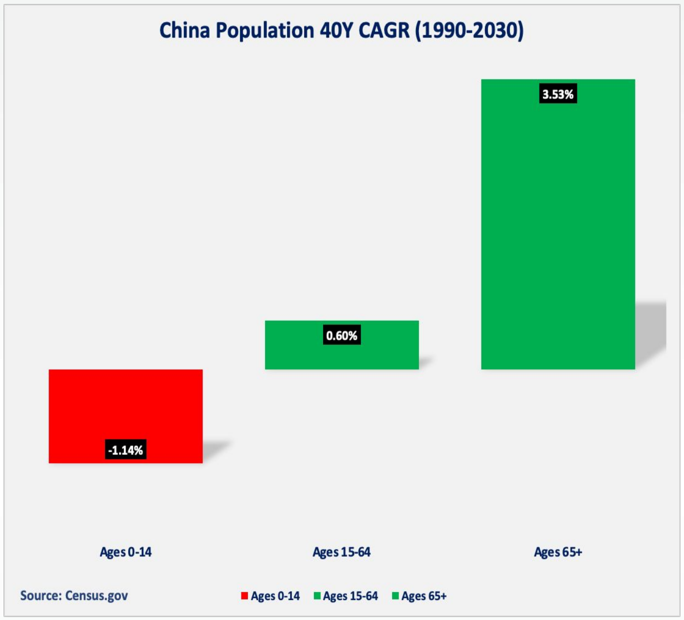


Consumer Price Index

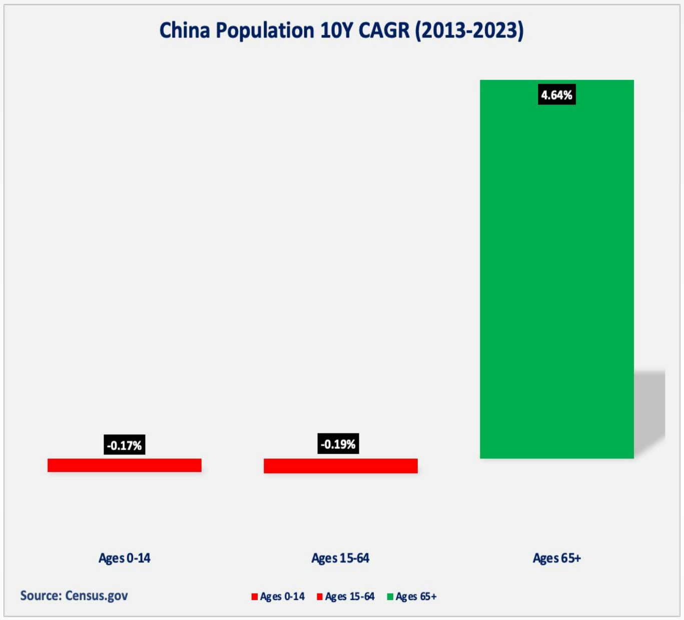
Unemployment

Demographics:

China's demographics provide supporting evidence to the expected continued decline in their economy. The population is expected to decline based on their CAGR for 40 and 10 years. China's population is evidently becoming older. Looking at China's 40 year demographic CAGR from 1990-2030 there is a -1.14% decline in ages 0-14, representing a 0.60% increase in ages 15-64, and a huge 3.53% increase in ages 65+. China's 10 year population CAGR provides nearly the same outcome with a -0.04% decrease in ages 0-14, -0.05% decrease in ages 15-64, and a drastic 1.14% increase in ages 65+. This may have negative effects on social security and pensions as the retired population continues to increase drastically and the working age population continues to decrease. With a decrease in the working age population there may be a tighter labor supply, output may decrease, demand may decrease, and this can also lead to real estate prices decreasing.



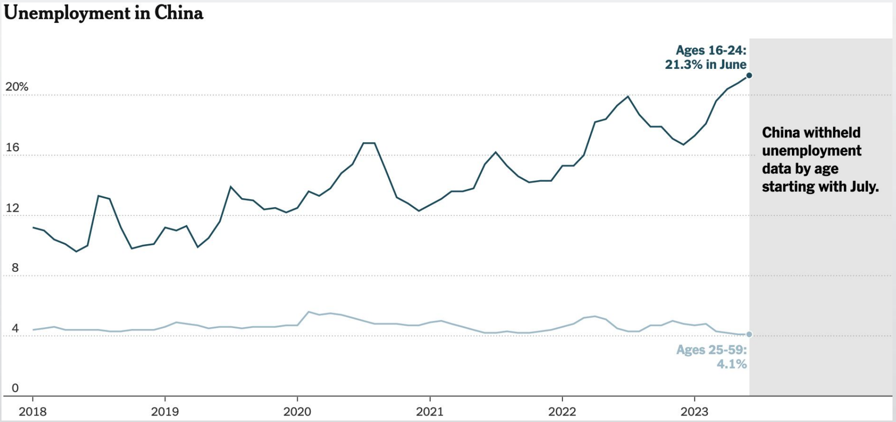
China Population 40Y CAGR



China Population 10Y CAGR

Unemployment:

Youth unemployment in China hit a record high of 21.3% as of June 2023 when last reported. China stated they will suspend reporting unemployment numbers. There are a few beliefs on what could have started this trend, but many point to China's "Zero Covid" measures implemented in early 2020 as the culprit. The policy caused economic volatility, caution in hiring workers, interrupted education, and difficulty to land internships that would ultimately lead to jobs.



Unemployment in China

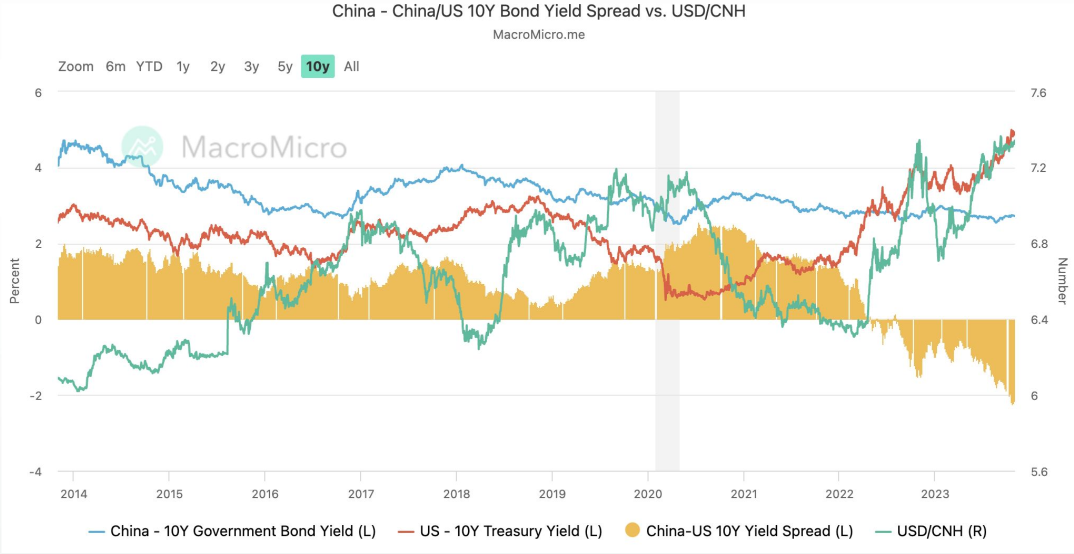
Source: The New York Times

One of the main drivers for unemployment is insufficient demand from businesses as they are uncertain about the future and would rather avoid expanding. This leads to less recruitment and higher resource costs attributed to new hires needing to be trained.

The Chinese government is also blamed for the rising unemployment. The government's crackdowns on the technology, real estate and education industries have also played a large factor in the rise in unemployment. Many of the educated youth held jobs in these industries where regulatory actions caused massive layoffs. These regulations forced companies and investors to be more cautious about expanding, ultimately forcing more meticulous recruitment. Investors and executives stated that an "ever-tightening government control of information is making it harder to do business in China". Policymakers introduced measures to try to lift confidence and boost youth employment by offering subsidies to encourage private-sector companies and state-owned enterprises to hire more. Along with pressuring colleges and universities to do more to help graduates get jobs.

Interest Rates

Based on the current economic trends, it is evident that the Chinese economy is experiencing a period of weakening. Consequently, the Chinese yuan is expected to depreciate. In contrast, the upward trajectory of the U.S. bond yield is likely to persist due to the recent two-year inflationary trends. The Chinese bond yield is anticipated to remain relatively low in order to mitigate the impact of the economic slowdown.



China Economic Outlook Conclusion

We believe the Chinese economy will continue to struggle to grow; they will experience disinflation, struggle with unemployment and a weak currency, and continue to see global geopolitical headwinds. Unfortunately, BAM does not see this as an attractive investment.

South Korea Economic Outlook

South Korea

Consensus	2022	2023	2024E	2025E
GDP Growth	2.6	1.2	2.1	2.3
CPI%	5.1	3.5	2.3	2.0
Unemployment	2.9	2.8	3.1	3.3
10-YR Yield	3.74	3.84	2.99	2.79

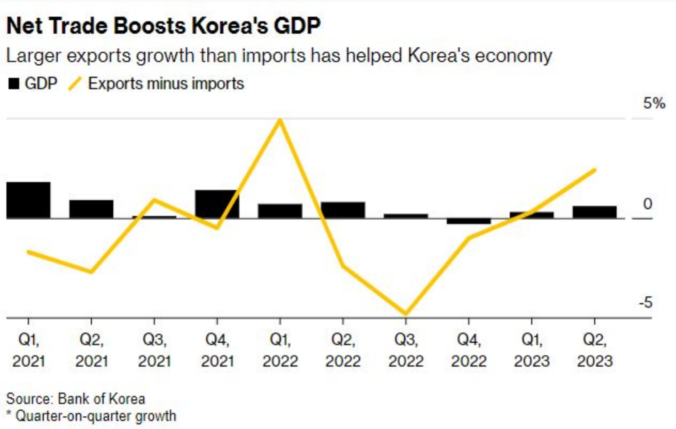
Source: Bloomberg

Last Updated: September 7, 2023

Despite seeing marginal growth in the Republic of Korea's GDP since the start of 2022, BAM continues to express concerns regarding its stability. Both economic and political challenges linger, not allowing us to be in line with analyst consensus.

Consumer Sector

South Korea's Gross Domestic Product has shown resilience after the effects of the COVID-19 pandemic and the war in Ukraine. Consensus forecasts the trade-reliant economy will grow 1.2% this year and will continue to rise up to 2.3% growth in 2025. Despite positive estimates, credibility regarding the growth is questionable. The majority of recent growth stands on South Korea's heavy reliance on low imports and higher exports. As a consequence, the consumer segment of the economy is weak with retail sales demonstrating a 3.2% drop in July from a month earlier, pulled down by low demand and tight monetary policy. The downturn in private consumption is expected to deepen further as high interest rates continue to hurt spending. Consumer sentiment also weakened in August on growing worries of sluggish growth.

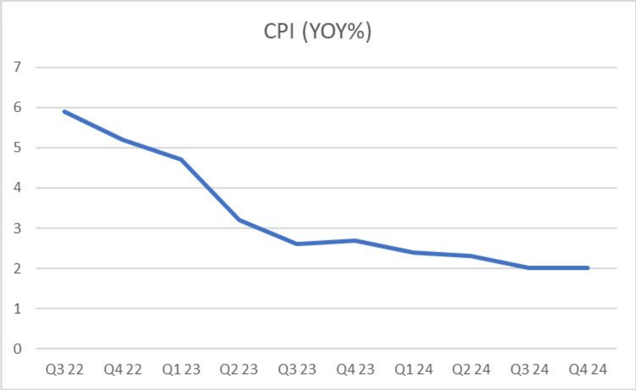


Net Trade Boosts Korea's GDP2 (Source: Bank of Korea)

Retail Sales Change (Source: Bloomberg)

Inflation

Inflation pressures for South Korea have eased, demonstrating a CPI lingering somewhere around 2.6%, slightly above the 2% target. In order to reach their target, South Korea held a hawkish bias, strictly tightening its monetary policy and severely impacting domestic demand. As a result, household borrowing has decreased due to high rates and falling prices in the residential property market.

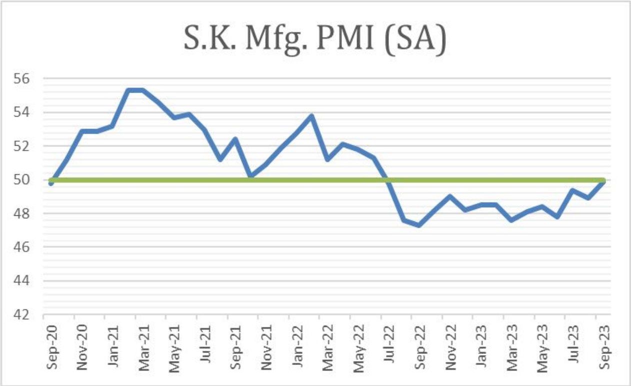


South Korea's CPI (Source: Bloomberg)

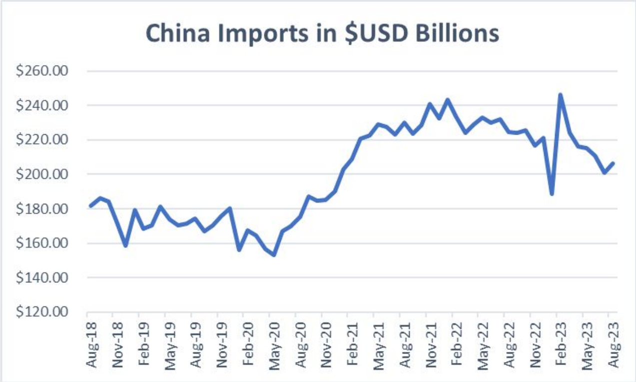
Business Sector

The South Korean government has a direct influence on the economy. However, the government has been unable to spend money on the areas of the economy that spur growth. Fiscal stimulus has instead been diverted towards COVID-19 relief. Moreover, The PMI Manufacturing Index (as seen below) has contracted which is a result of Korea's weak net exports (as seen in the graph on the right titled, "South Korea Net Exports (Monthly)". Due to the recent change in government spending and several economic headwinds, BAM believes the forward market prospects for South Korea are unfavorable to economic growth.

South Korea's Exports (Source: Fred)



South Korea's Manufacturing PMI (Source: S&P Global)



China's Exports to SK (Source: Fred)

South Korea Outlook: Summary

Even with modest GDP growth, concerns about the strength and consistency of its economic performance remain. The nation's heavy reliance on trade is impeded by two main factors: a lack of substantial strength in the semiconductor industry and declining exports to China. In summary, South Korea is expected to face continuing economic headwinds into 2024 and does not appear an attractive investment for BAM.

Japan Economic Outlook

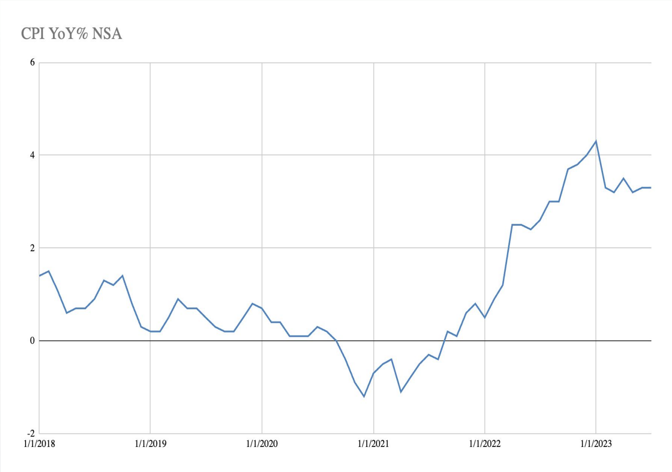
Japan Economic Outlook				
Consensus	**2022**	**2023**	**2024E**	**2025E**
GDP Growth	1.1	1.6	1.0	1.0
CPI%	2.5	3.0	1.9	1.4
Unemployment	2.6	2.6	2.4	2.3
10 Year Yield	0.42	0.68	0.75	0.93
Source: Bloomberg				

Last Updated: September 7, 2023

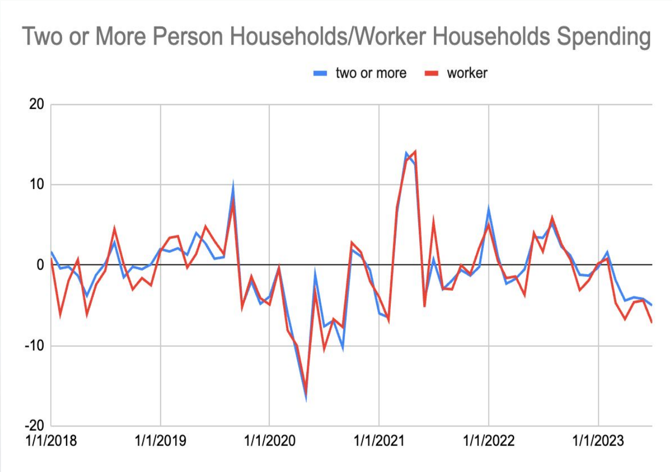
Inflation and Consumer Spending

Japan has successfully recovered from the pandemic's impact but grapples with significant inflationary pressures. The Q2 Consumer Price Index (CPI) reached 3.3%, the highest level since 2001. These mounting inflation concerns raise the possibility of the Japanese Central Bank departing from its long-standing near-zero interest rate policy to align with the global trend of raising interest rates.

High inflation has also instilled reluctance among Japanese consumers to spend, resulting in a concerning -5.0% decrease in two or more person household spending, even as the 2nd quarter GDP exhibited annualized growth of 6.0% compared to Q1 2023. This growth is primarily export-driven and obscures the underlying issue of sluggish domestic demand, with consumer spending having sustained a downward trend for nearly seven months.



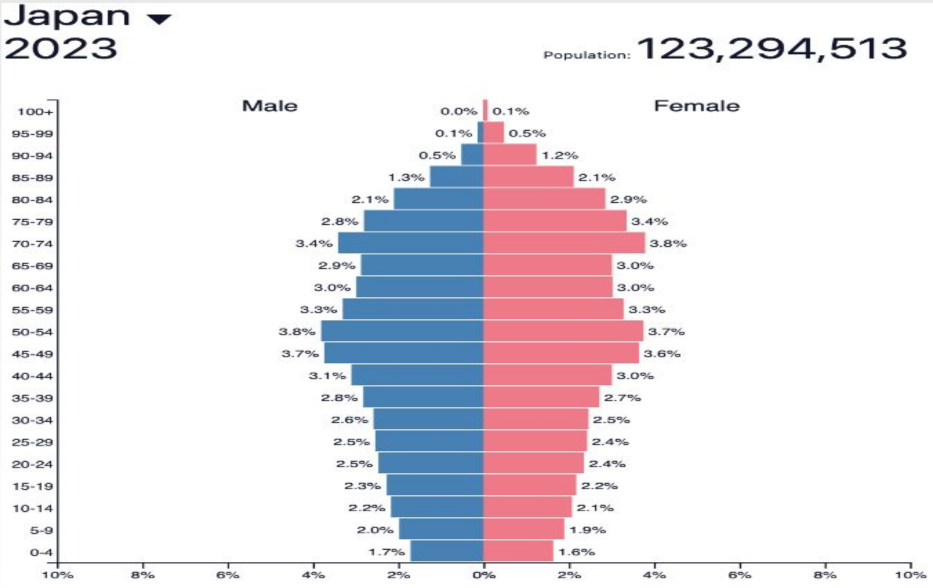
Source: Bloomberg



Source: Bloomberg

Demographics

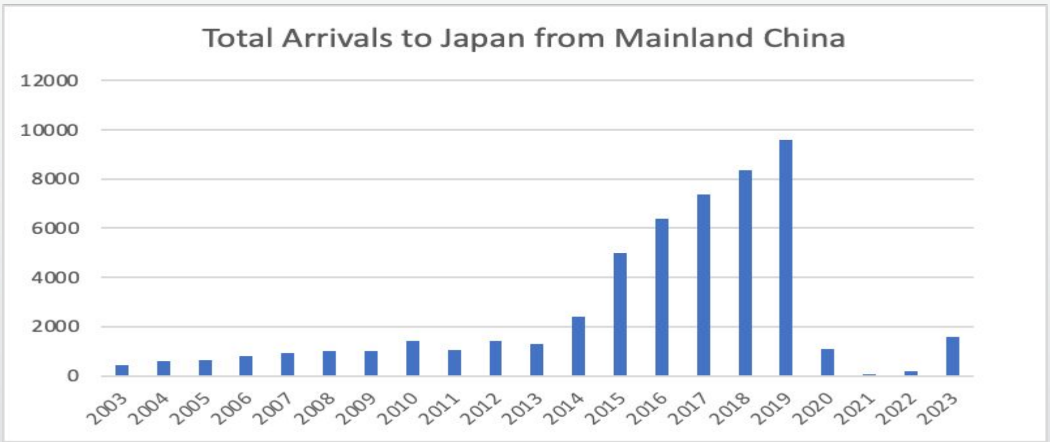
The nation confronts substantial challenges due to adverse demographic trends, marked by a diminishing working-age population. The median age currently stands at 49.1, with a projected age of 51.3 by 2025.



Japan's Demographic (Source: PopulationPyramid.net)

Geopolitical Tensions with China

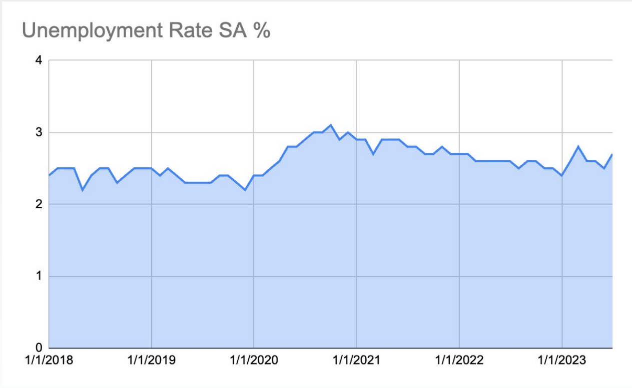
BAM has expressed concerns regarding Japan's exports to China and its manufacturing operations within China, crediting these concerns to escalating geopolitical risks in the region. These uncertainties have also raised apprehensions about the decline in inbound tourism from China, which holds substantial importance for Japan. Prior to the 2020 pandemic, Chinese visitors not only surpassed those from other nations but also constituted the highest-spending group. In 2019, Chinese tourists accounted for 30.3% of total inbound visitors, according to the Japan National Tourism Organization, with their share of total spending by inbound tourists even more significant at 36.8%, as reported by Bloomberg. Depicted below is a measure of how Chinese tourism to Japan is affected after geopolitical tensions.



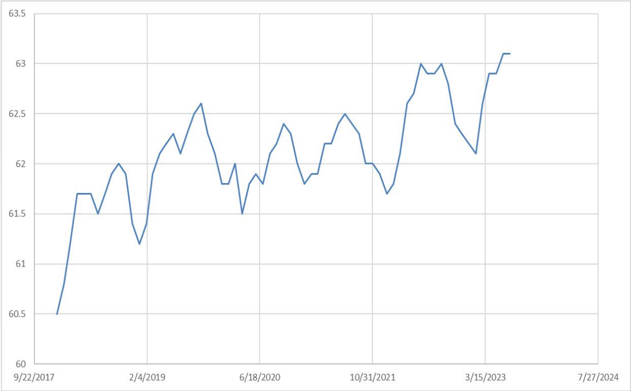
(Source: Bloomberg)

Unemployment

Japan's unemployment rate is currently exhibiting a gradual upward trend, currently standing at 2.7%. Internationally, this may appear low, however it surpasses any point observed in 2018 or 2019. This trend can be attributed to higher labor force participation rates juxtaposed with a decline in available job opportunities.



Source: Bloomberg



Labor Force Participation (Source: Bloomberg)

Japan Outlook: Conclusion

Considering these factors, we lean toward a strategy that prioritizes a focus on U.S. domestic equity markets while avoiding investments in Japan.

India Economic Outlook

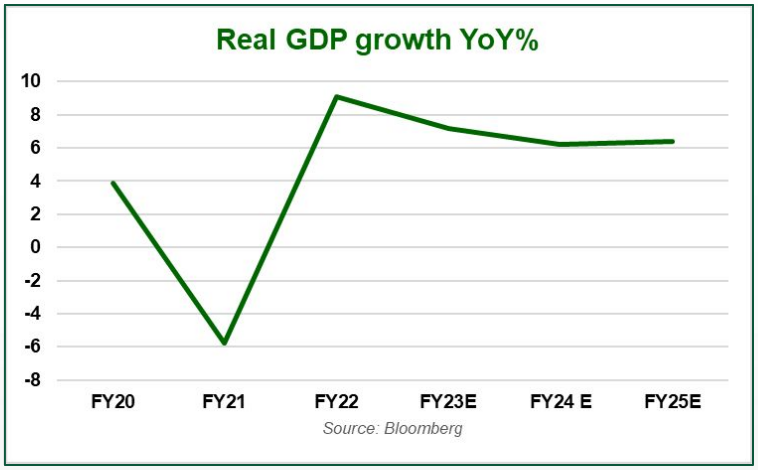
India Economic Outlook

Consensus	2021A	2022A	2023E	2024E	2025E
GDP Growth	-5.8	9.1	7.2	6.2	6.4
CPI%	5.1	6.7	-	5.5	4.6
10 Year Yield	6.5	7.3	7.2	6.8	6.8
Unemployment	6.0	7.7	6.3	-	-

Source: Bloomberg and GlobalData

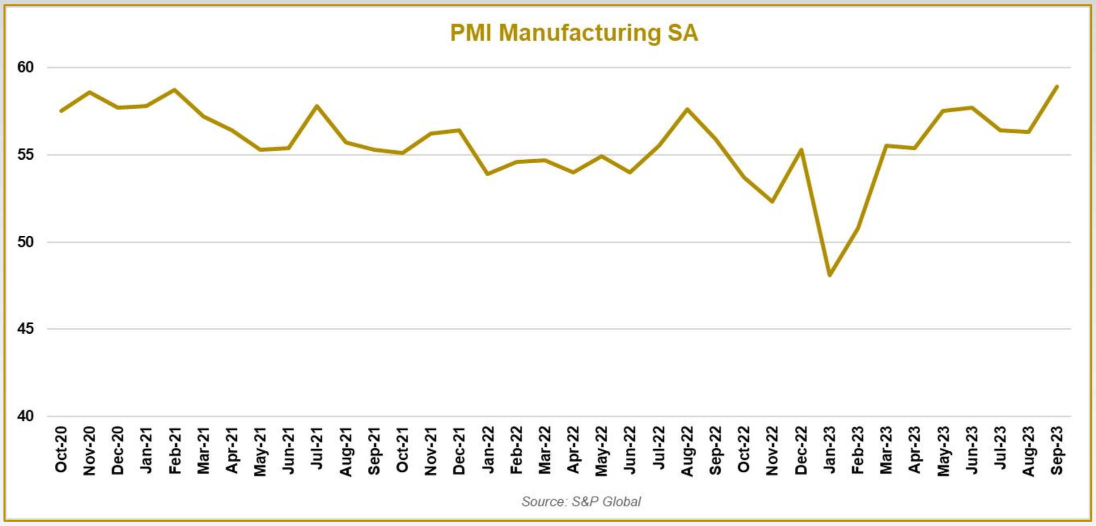
Last Updated: October 28, 2023

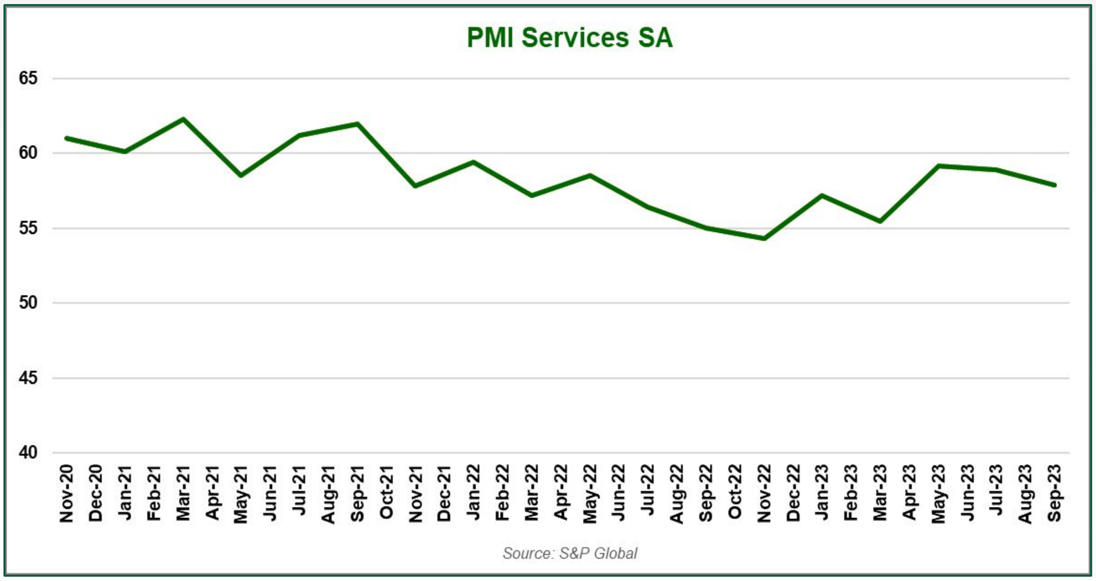
After enduring a turbulent economic downturn caused by the COVID-19 pandemic, India has demonstrated great resilience in its recovery. Several key factors, including impressive economic growth, favorable demographics, substantial infrastructure investment and rising tensions between the West and China, have not gone unnoticed. Bloomberg estimates that India will emerge as the world's third-largest economy by 2027.



Growth in Consumer and Business

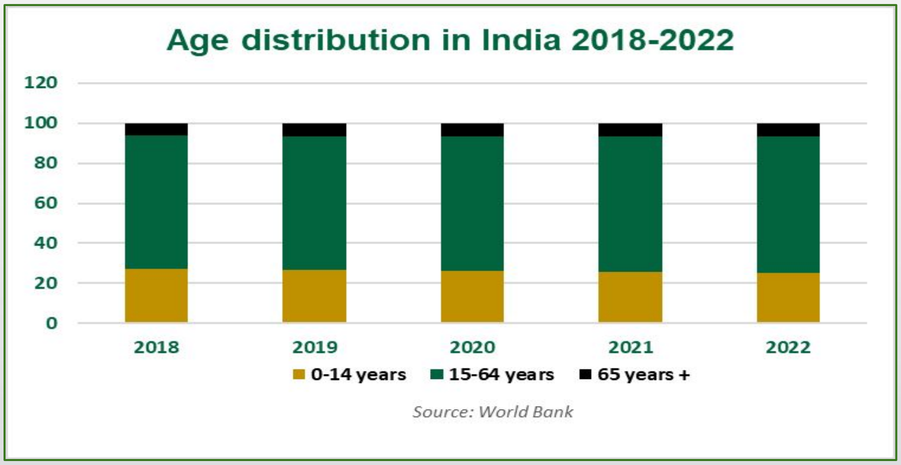
This systematic opportunity could potentially be leveraged by Western Countries looking to diversify away from China. Within India, services constitute a substantial portion of India's GDP, accounting for 54% and supported by robust consumer spending. Amid a fraught geopolitical climate and a transitioning macroeconomic environment, India has demonstrated a proficient return to normalcy, marked by strong growth. Their GDP (current and forecast) highlighted themes of growth and strength in both Services and Manufacturing PMI, consistently reporting readings above 50, indicating a continuous expansion.





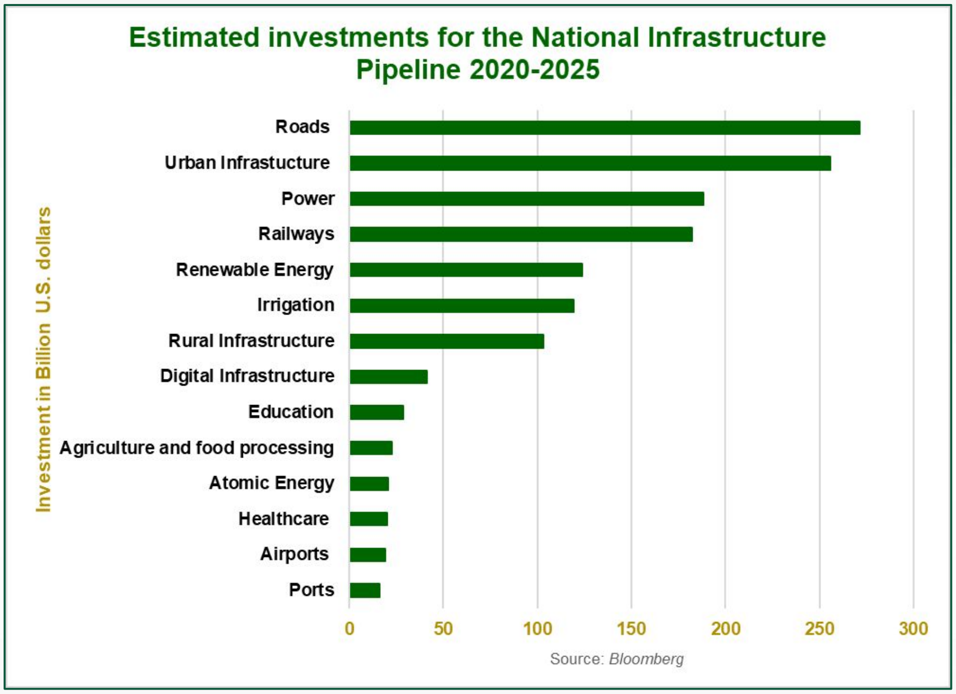
Demographics

Demographics reflect youthful perspectives for India. The country recently overtook China as the world's most populous nation, with a staggering population of approximately 1.43 billion people. However, what distinguishes India are its demographic advantages, characterized by a vibrant workforce, with a median age of 28.2 years. A stark contrast to China's median age of 39 years.



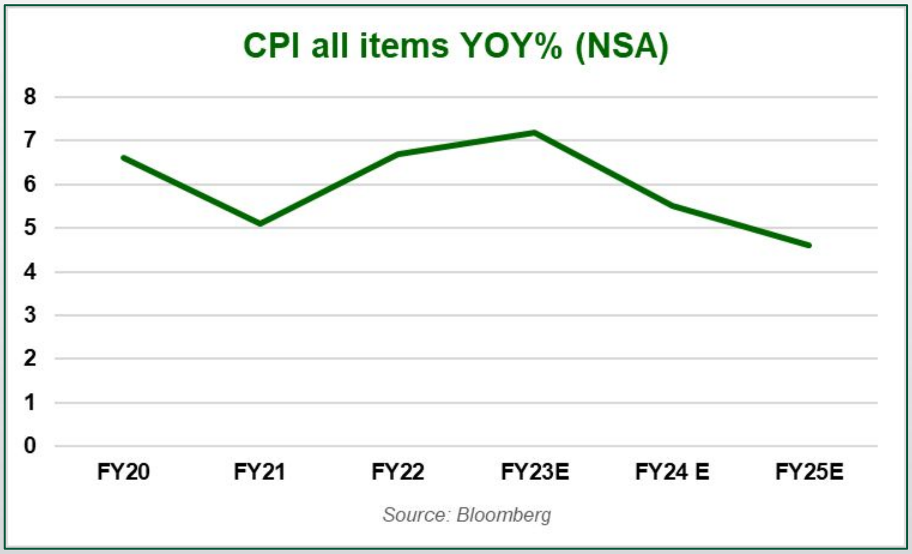
This impressive performance remains steadfast, not including the years affected by the economic challenges posed by the COVID-19 pandemic. Additionally, manufacturing contributes 20% to the GDP and holds the potential for further enhancement, especially as other nations seek to reduce their reliance on China. According to the United Nations manufacturing wages are currently low, with an annual salary of production workers of USD 2,000 versus USD 14,000 in China. This could be pivotal for India as the shift from China into India remains a common theme among Western Nations hoping to gain early market share and capitalize on this opportunity.

Historically, India has faced inadequate infrastructure which hindered job growth and economic productivity. The current administration is actively addressing this problem. This staggering growth (of GDP) has fueled India’s commitment to enhance its infrastructure. According to India's finance minister, there has been a 37% increase in infrastructure improvements. Roads and railways have remained a priority with the minister investing about $120 billion with the goal of stimulation of productivity and job growth. Additional investment is planned for future years as well. (graph below).



Inflation

The Consumer Price Index has remained high with an anticipated 5.5% projection for 2024. A primary driver of CPI has been high import prices which have further weakened the Indian rupee. While this may raise concerns, the rapid expansion of GDP gives us less concern as 5% is not an unusually high inflation rate for India.



Global Economic Summary

In general, the global economy is experiencing an economic deceleration, accompanied by relatively elevated levels of inflation and interest rates compared to the preceding years. Strong demographic factors place consumers in a robust position, lending support to consumer spending and shielding it from the likelihood of a recession. Overall, a decelerating global economy but still growing at a low level and avoiding a recession. Within this landscape, the United States continues to present itself as the most appealing investment prospect, while India shines as the world's fastest-growing major economy. Given the current conflict in the Middle East, these two markets look especially attractive from a risk perspective as well.

As a result, in regards to equities, adopting a defensive stance is appropriate, although staying invested is likely to yield better results than holding cash or bonds. Furthermore, recent declines in equity markets offer an opportunity to enter the market at more appealing valuations for the long-term.

With regards to fixed income, we expect interest rates to remain elevated for an extended period but we believe they will come down later in 2024 and we can capitalize from possible future rate cuts by taking some additional duration risk.

Capital Market Outlook

BAM's capital market outlook is formulated through a comprehensive analysis of our economic outlook, employment of the Capital Asset Pricing Model (CAPM), and anticipated fixed-income yields. To implement the CAPM, we defined the market as the Russell 3000, and subsequently applied an equity risk premium model devised by Professor Aswath Damodaran of NYU Stern, which enables us to derive expected market returns. The essential inputs within this model are as follows:

- Current level of Index (S&P 500, October 2023): 4200
- Expected cash payout (dividends + buybacks) as % of earnings= 79.77%
- Expected earnings growth rate for the next 5 years: Top-down consensus 7.63%
- Current long-term risk-free rate: 10 Year T-bond = 4.92%
- Expected growth rate in the long term after year 5 = 4.92%

Under these assumptions, our financial model has generated an expected return of 10.01% for U.S. equities. The Capital Asset Pricing Model (CAPM) guides our approach to forecasting future returns for both developed and emerging international equities. In the context of domestic fixed income, we utilize the yield to worst metrics from the Bloomberg Barclays Aggregate Bond Index. Our cash yield projections are derived from the 3-month Treasury Bills (T-Bills) yield.

The table below presents historical and anticipated returns for various asset classes. We place greater confidence in the expected return column as it offers a more relevant perspective on the current economic landscape. This preference stems from the historical data, which pertains to a period when interest rates were declining, while today, we find ourselves in a period of increasing rates.

Asset Class	Index	Expected Return	10 yr Historical Return	10 yr Standard Deviation	Expected Return Models & Assumptions
Domestic Equities	R3000	10.01%	13.53%	15.22%	CAPM
Developed Markets	M1EA	9.16%	6.10%	14.92%	CAPM
Emerging Markets	M1EF	8.64%	4.50%	17.05%	CAPM
U.S. Fixed Income	AGG	5.65%	1.58%	4.29%	YTW
Cash	T-Bill	5.43%	1.05%	0.40%	YTW

Asset Allocation

In our pursuit to obtain an optimal asset allocation, we engaged in a comprehensive portfolio optimization exercise, underpinned by an advanced Excel model. Based on this Excel model, our portfolio was constructed by assimilating the following key benchmarks:

- Russell 3000 Total Return Index (U.S.)
- MSCI Developed Markets Total Return Index (DI)
- MSCI Emerging Markets Total Return Index (EM)
- Barclays U.S. Aggregate Bond Total Return Index (AGG)
- Bloomberg U.S. Treasury Bills 1-3 Month Total Return Index

Two evaluative scenarios were explored: the first, drawing insights from our current capital market forecast, and the second, based on the records of historical capital market trajectories. After careful consideration, our conviction gravitates towards the "Expected Returns" scenario, deeming it more aligned with the prevailing macroeconomic landscape.

Adhering to our client's distinct investment policy, we instituted the following allocation parameters:

- Fixed Income: Encompassing a restrictive bandwidth of 20-40%.
- Equities: Constrained within the bounds of 60-80%.
- Cash Equivalents: Restricted to a maximum 20%.
- Foreign Equities: Confined to 30%.

Guided by these precise constraints, the subsequent calculations illustrate the resulting asset stratification, specifically tailored to:

- Maximize Return Potentials
- Minimize Systematic Risk
- Maximize Sharpe Ratio

Portfolio Optimizer Results

10-yr Historical			
Metrics	**Max Ret.**	**Min. St Dev**	**Max SR**
Return	**11.04%**	**6.03%**	**8.49%**
Standard Deviation	**15.84%**	**11.17%**	**11.99%**
Sharpe Ratio	**0.70**	**0.54**	**0.71**
Allocations % U.S. / DI / EM / AGG / Cash	**80/0/0/20/0**	**30/13/17/20/20**	**60/0/0/20/20**

BAM Expected Returns				
Metrics	Max Ret.	Min. St Dev	Max SR	Tactical Adjustment Max SR
Return	9.13%	6.68%	7.90%	8.39%
Standard Deviation	15.84%	10.65%	11.19%	13.04%
Sharpe Ratio	0.58	0.63	0.71	0.64
Allocations % U.S. / DI / EM / AGG+Cash	80/0/0/20	30/13/17/40	30/20/10/40	60/0/5/35

After considering BAM's Expected Returns, we discarded the Minimum Standard Deviation scenario because it had lower returns and similar risk to the Max Sharpe Ratio scenario. When comparing Maximized Returns and Max Sharpe scenarios, Max Return didn't appeal to us due to its significantly lower Sharpe ratio. We increased the allocation to fixed income since BAM believes the Fed is nearing the end of its rate hikes. An 80% equity allocation seemed too risky and undiversified.

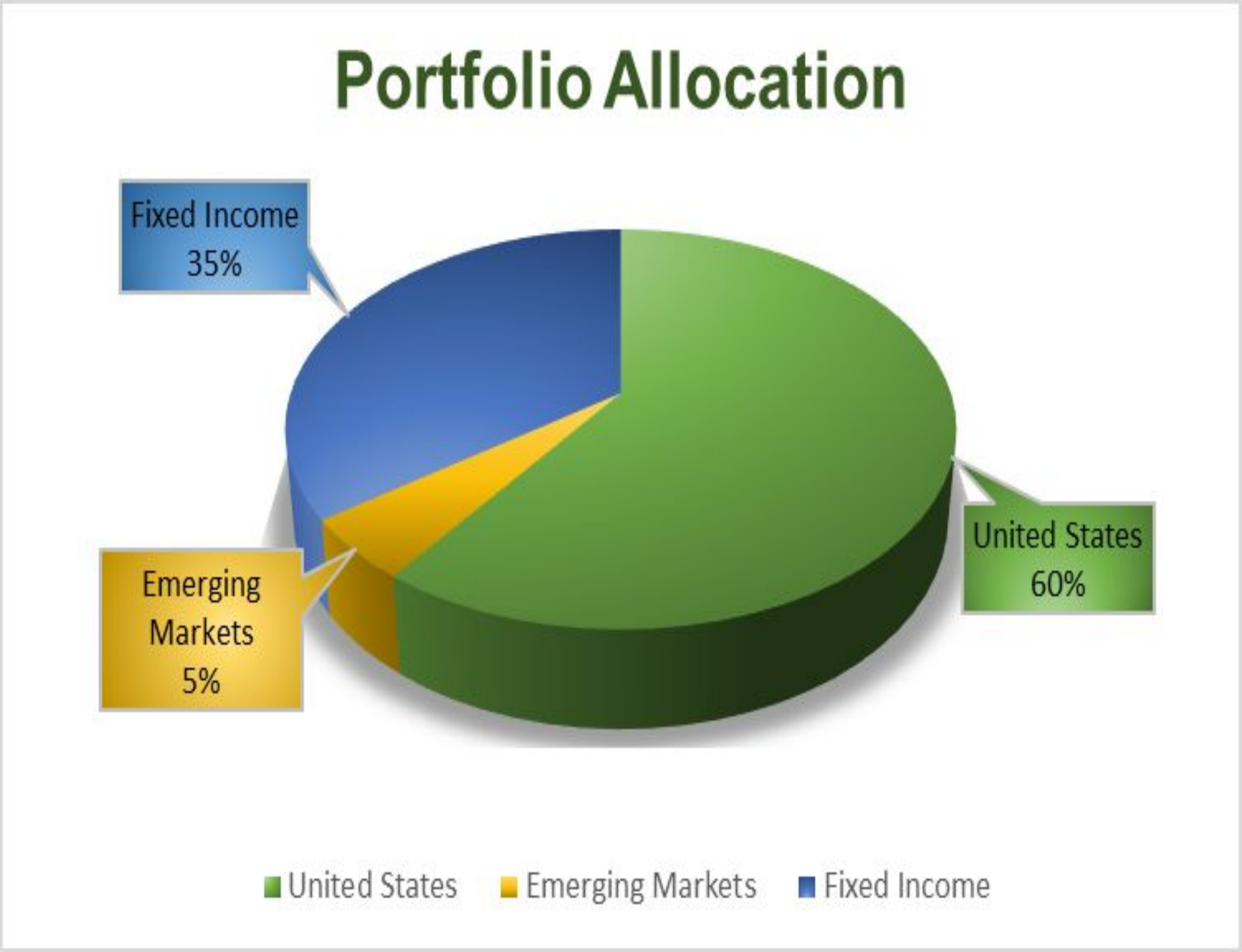
BAM foresees a stable interest rate trend with a slight decline in late 2024. Given the higher fixed income allocation in the Max Sharpe scenario and our economic outlook, we favor it. However, considering our economic outlook, BAM limited international equities to India due to weak growth and geopolitical risks in Europe, Japan, and China. So, we recommend reallocating to 60% U.S. equities and moving 5% from bonds to Emerging Markets (India) equities. This shift is driven by BAM's positive view of India as an investment hub and our desire for a bit of international diversification.

Due to the current flat yield curve, BAM has consolidated fixed income and cash into a single 35% allocation. Within this allocation, we have divided it as follows: 50% in AGG, 10% in short-term T-Bills, 25% in long-term Treasuries, and 15% in mortgage-backed securities.

Our choice of 50% in AGG aligns with consensus. However, we've allocated more to long-term Treasuries to increase duration and to short-term Treasuries and mortgage-backed securities to capture higher yields.

In international markets, we advise avoiding investments in the EU, China, South Korea, and Japan due to bleak economic forecasts and geopolitical risks. Conversely, BAM's international investment focus is solely on India, based on our optimism regarding its enduring economic stability and growth trajectory, which is expected to continue into 2024.

Furthermore, BAM's revised target asset allocation stands at 60% in Domestic Equity, 5% in Emerging Markets, and 35% Fixed Income. The ensuing portfolio asset allocations and projected metrics, grounded in our securities recommendations, are delineated as follows:



Category	Metric	CFA OC Benchmark	BAM Portfolio
Portfolio Allocations	Domestic equities	50.00%	60.00%
	International equities	20.00%	
	Emerging market		5.00%
	Fixed Income	30.00%	35.00%
Portfolio Performance	Return	8.49%	8.43%
	St Dev	13.58%	13.04%
	Sharpe Ratio	0.63	0.65

Performance Goals

Our mission is to exceed the CFAOC benchmark. Based on our economic and capital market outlooks, portfolio optimization, tactical adjustments, and securities selection, we expect our portfolio to return 8.37% with a standard deviation of 13%. Thus, allowing BAM to offer better risk-adjusted returns. Details on how the BAM portfolio metrics are calculated are further explained in the Equity Portfolio Characteristics section and Fixed Income section.

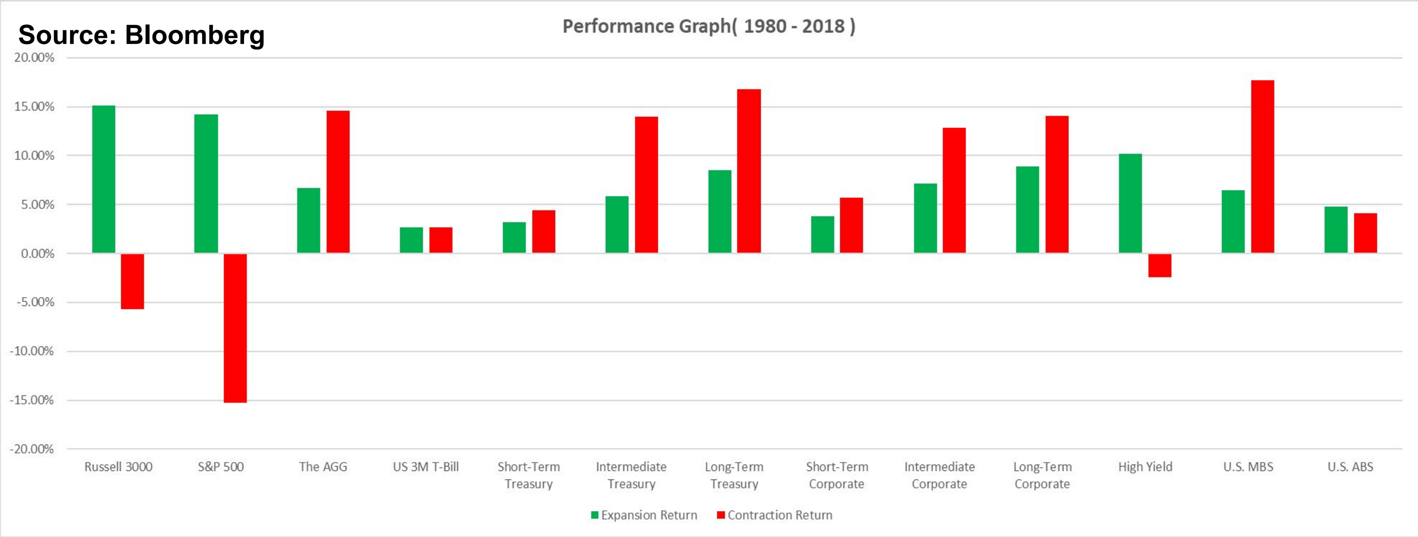
Fixed Income Valuation and Selection

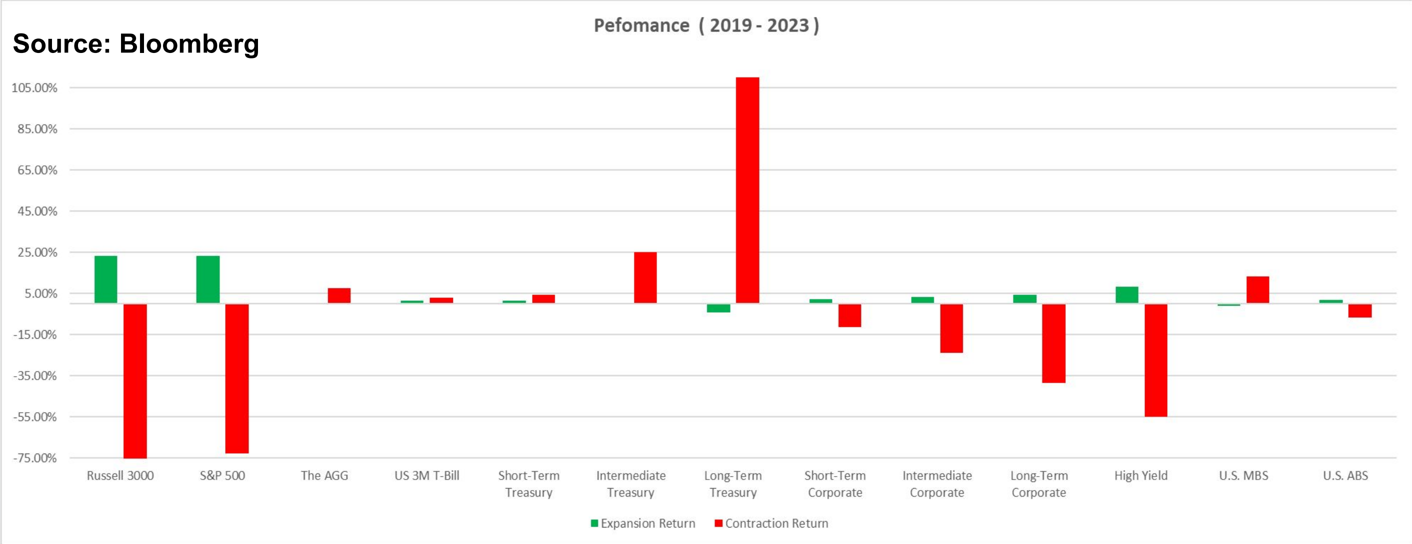
	Appropriate (X)	Inappropriate (X)
Cash (Money Market Funds)	X	
U.S. Treasury Notes and Bonds	X	
Investment Grade Corp. Bonds	X	
Securitized (ABS/MBS/CMBS/RMBS)	X	
High Yield Corp. Bonds		X
Developed International Debt		X
Emerging Market Debt		X
Preferred Stock		X

BAM decided to execute a 35% allocation for fixed income based on two premises. In the current economic environment, interest rates have a common theme of "higher for longer" but modest cuts expected in 2H of 2024. Furthermore, the economy is undergoing a phase of decelerating growth. As a result, the team's fixed-income approach targets three decision drivers:

1.) BAM's economic outlook is aligned with consensus, and the AGG index represents the consensus within fixed income.
2.) BAM believes there is potential risk to the economy skewing more towards downside than upside. Adding duration can provide potential capital appreciation and a hedge to equities.
3.) Short-term T-Bills and Agency Mortgage Securities provide higher yields without additional credit risk.

BAM has opted to avoid certain securities, such as Corporate, Asset-Backed, high-yield, Non-Agency, and Preferred Stock assets, due to their insufficient additional yield compared to Treasuries and Agency MBS. BAM's analysis encompassed various fixed-income sub-assets in both expansionary and contractionary economic phases see below). Our research shows that in the anticipated scenario of a slowly growing to mildly recessionary economy, Treasuries and Agency MBS are poised to potentially outperform other investments. Furthermore, we approached investing in developed and emerging markets with caution, given their notable credit risk relative to the U.S. and the added complexity of currency risk.





Our Bond portfolio encompasses some duration, high yield, and low credit risk. Our goal was to construct a portfolio that would provide capital preservation, income generation, and potential capital appreciation in case of an economic downturn.

It includes various components:

- iShares Core U.S. Aggregate Bond ETF (AGG): We allocated 50% of the portfolio to the AGG, a well-diversified fund with a low expense ratio, consisting of approximately 68% Treasury and Agency Securities. We believe this provides a well-balanced risk-reward scope.
- SPDR Portfolio Long-Term Treasury ETF (SPTL): We invested 25% in SPTL, a long-duration Treasury ETF expected to perform well in declining interest rate environments.
- Ishares MBS (MBB): We allocated 15% to MBB, agency-backed securities that historically offered extra spread. They have shown consistent performance in expansionary and contracting periods (Graph Above).
- U.S. Short-Term Treasuries (SGOV): Finally, 10% was allocated to SGOV for liquidity preservation and attractive yields. SGOV is a low-risk investment with a high yield to worst and zero default risk.

	Minimum	Average	Maximum
Yield to Worst (%)	5.14	5.51	5.90
Duration (Years)	0.10	7.61	14.96

TARGET FIXED ASSET SECTOR ALLOCATION

As previously stated, we limited our fixed income to Treasury, Agency MBS, and benchmark AGG fund. We do not allocate by industry or sector.

Equity Valuation and Selection

Passive vs. Active Management

BAM employs an active management approach driven by rigorous economic and fundamental research. Along with our our individual equity selections we invest in ETFs in six key sectors: Communications, Materials, Utilities, Energy, Consumer Staples, and Real Estate, accounting for 26.5% of our equity portfolio. For Fixed Income and International investments, we utilize ETFs and mutual funds. Our strategy optimally balances our resources while diversifying to minimize firm-specific risk.

Top-Down vs Bottom-up

Our firm believes that the markets are efficient in the long term, however, short-term inefficiencies are inevitable which potentially provide opportunities. Using a Top-Down approach, allows us to position our portfolio to capitalize on those opportunities while balancing risk for our clients. Our extensive research and active analytical processes are key to identifying these existing inefficiencies. Based on our firm's extensive academic research, we have decided to employ a growth strategy at an undervalued price, commonly known as the "Growth at a Reasonable Price (GARP)" (see Fundamental Factors for a detailed breakdown of the GARP strategy).

Fundamental vs Quantitative vs Technical

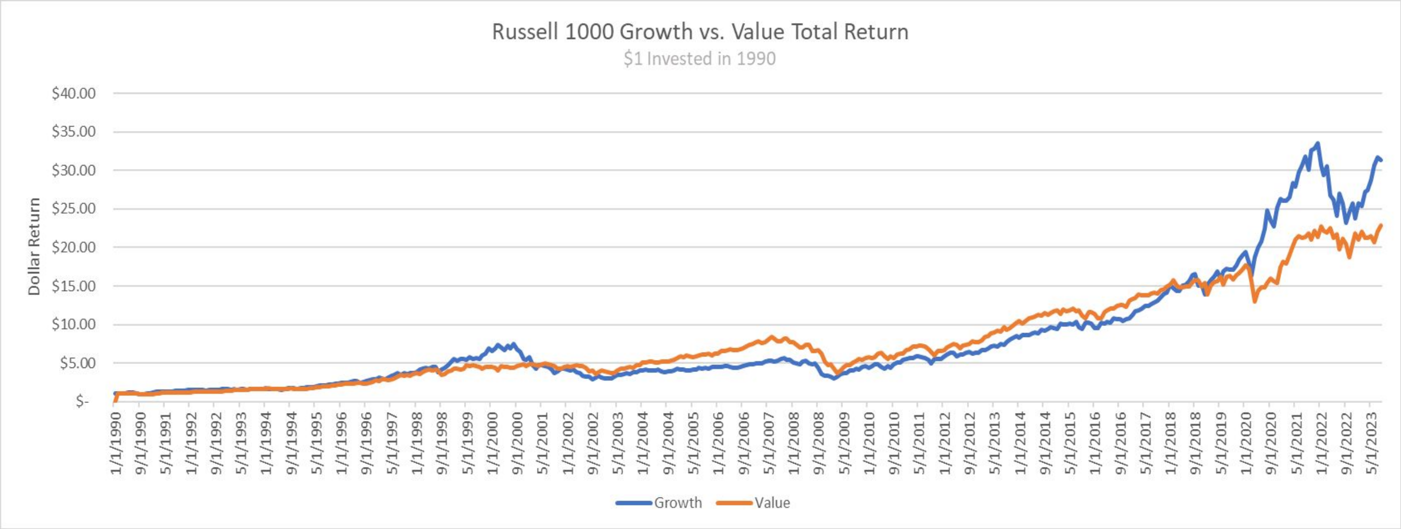
Our strategy places fundamental analysis at the forefront. We base all equity investment decisions on in-depth research. We avoid quantitative and technical strategies, aligning with our investment philosophy. Instead, we employ a security screening tool with the following metrics:

- Country of Domicile: United States
- Global Industry Classification Standard (GICS) Sector
- Market Cap≧ $2 Billion
- Revenue Growth (2018-2023 Historical CAGR) (Higher is Better)
- Revenue Growth (2023 vs 2025)
- EPS Growth (2018-2023 Historical CAGR) (Higher is Better)
- EPS Growth (2023-2025) (Higher is Better)
- Price/ Earnings-to-Growth (PEG) (Lower is Better)
- Price-to-Free-Cash Flow (Price-to-Book for Financials) (Lower is Better)
- Gross Profit to Total Assets (Relative to Sector; excluding Financials)
- Return on Invested Capital (ROIC) (Higher is Better)
- EBIT/Interest (Higher is Better)

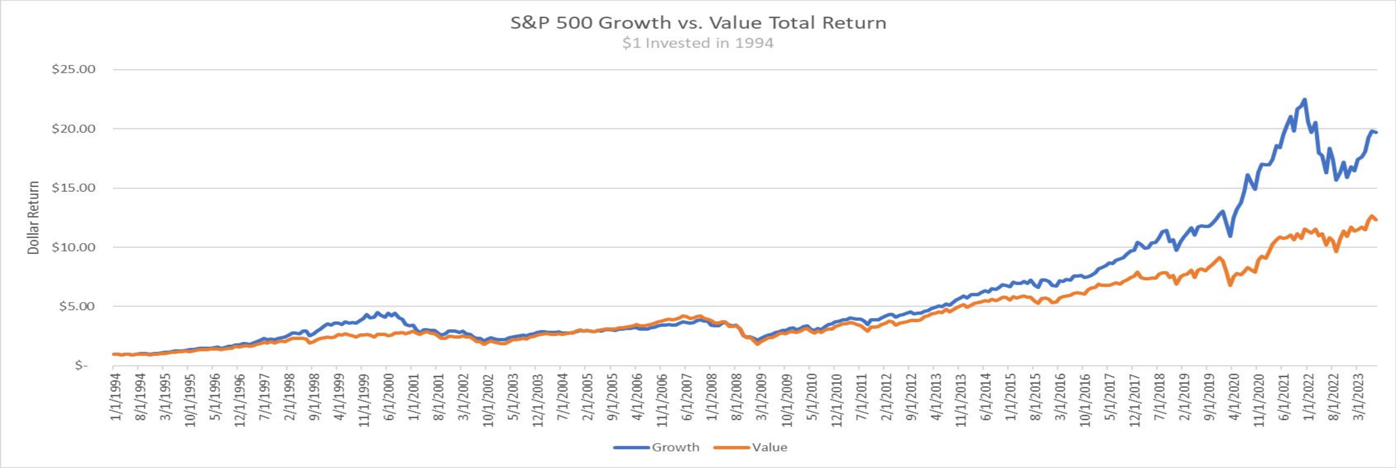
Value vs. Growth

This year our firm follows Growth at a Reasonable Price (GARP), a strategy that emphasizes growth while also taking into account crucial fundamental value factors like the PEG ratio, price to free cash flow, and return on investment capital. We made this strategic shift after analyzing the long-term total returns of large-cap and small-cap equities using the Russell 1000, Russell 2000, and S&P 500 indices, which exhibited the outperformance of large-cap growth.

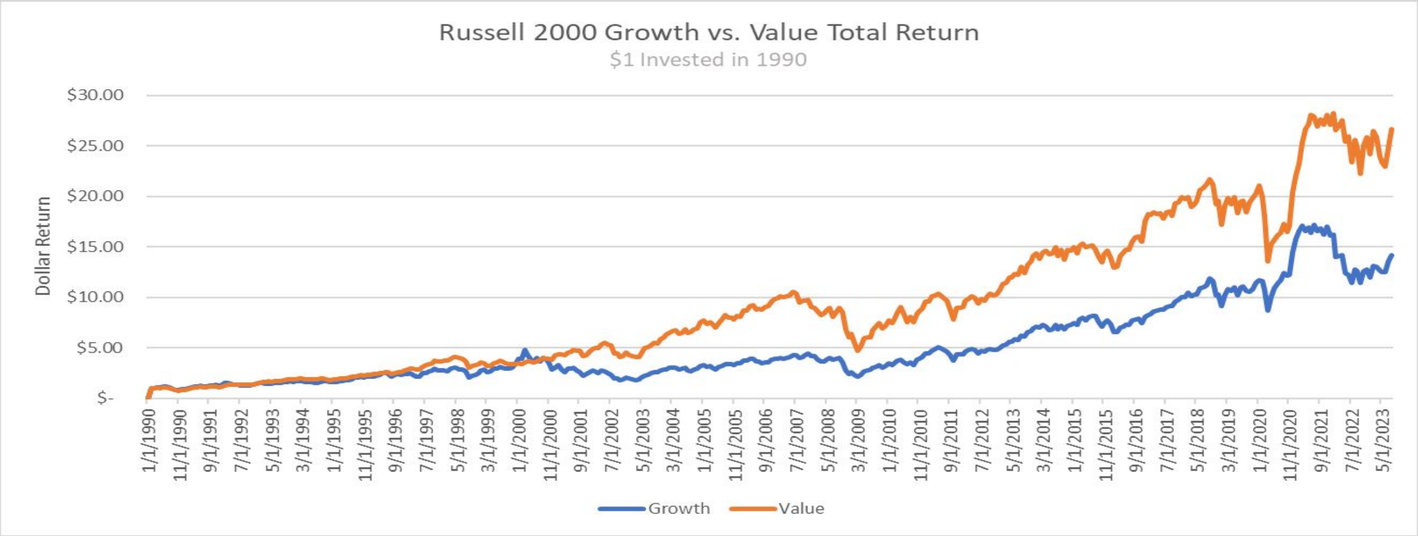
While simultaneously examining the above indices, we found little evidence that value has consistently outperformed growth except for the upside in value premium during the post-Dotcom era. BAM believes the tax cuts in 2017 contributed to the benefit of highly profitable large-cap companies. Perhaps a much bigger factor is likely the underlying factors of the economy have structurally changed, emphasizing a disruptive and technologically driven economy. This change is seen in the recent drivers of growth including, AI, electric vehicles, renewable energies, work-from-home, and data solutions. We believe these trends are long-lasting and will continue to favor growth.



The graph above compares the performance of large cap growth versus large cap value. We see that growth outperformed during the Dotcom bubble but value did better up to the financial crises. Post 2009, the two strategies performed similarly until the pandemic, post-pandemic growth has reasserted itself in a very strong fashion.

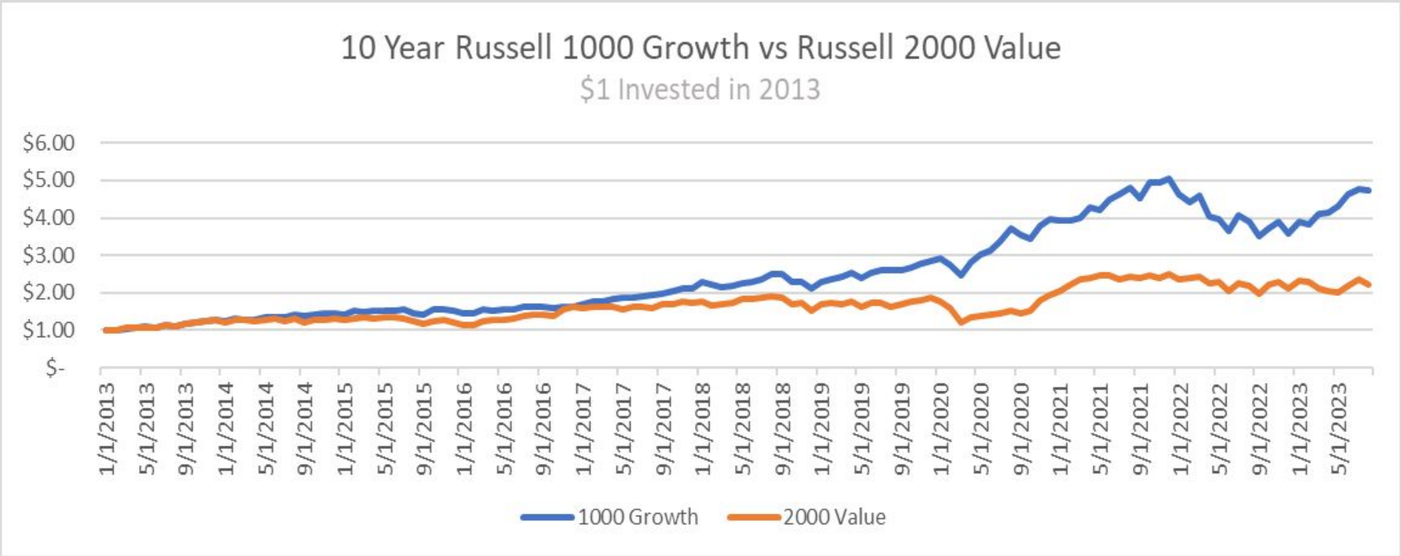


Above graph is for the S&P 500 and shows very similar results to the Russell 1000.



We also analyzed performance of the small cap sector using the Russell 2000 index. As the above graph shows, small cap value tends to dominate growth other than briefly during the dotcom bubble.

Broadly speaking, growth does better in large caps and value does better in small caps. Next, we compared the performance of these two outperforming strategies against each other.



The graph above demonstrates the spread between the two best performing indices which was the Russell 1000 growth and the Russell 2000 value. Therefore from analyzing the highest performing growth index and value index we see that large cap growth still tends to dominate even small cap value for the past 10 years.

Based on the above analysis, BAM is proposing a GARP strategy in large cap stocks. We define large cap based on the Russell 1000 Growth index, namely cap over $2 Billion.

While there have been several research papers proposing that Value can outperform, we believe the macro factors of lower taxes and structural shift in the economy make some of these arguments less appealing. One such paper promoting Value investing was the 2021 paper titled “Value versus Glamour Stocks: The Return of Irrational Exuberance?”, by Bellone and Carvalho of BNP Paribas. BAM does not follow a pure Value approach but one interesting aspect of Bellone and Carvalho’s study is the sector-neutral aspect of their analysis. Bellone and Carvalho show that a sector-neutral approach is a better application of Value and has higher returns than a broad Value index. Most Value indexes are not sector neutral and are market cap weighted. While BAM is not using the same exact methodology, our GARP approach borrows this concept by applying it on a sector-by-sector basis whereby each holding within a sector is equal-weighted. This should aid in taking some advantage of the sector-neutral methodology.

Large-Cap vs. Mid-Cap vs. Small-Cap

We use a minimum market cap of $2B as a decision tool, beyond the CFAOC requirements and the growth/value research discussed above.

International vs. U.S.

The figures below compare the 10-year Average Historical returns and volatility (standard deviation) of domestic versus international equities:

	Average Return	Standard Deviation
Russell 3000	13.53%	15.22%
MSCI Developed Markets	6.10%	14.92%
MSCI Emerging Markets	4.50%	17.05%

Currently, international stocks have underperformed domestic equities. This can be attributed to some crucial factors. For example, Emerging markets generally have higher volatility, slower growth, and higher geopolitical risk. Based on this myriad of factors BAM has decided to focus mainly on U.S. equities, except India. India is projected to become the fastest-growing major international economy in the following years. Due to this, our firm decided to allocate 5% of our portfolio in India and 60% in United States equities. While our international allocation is small relative to the benchmark, the correlation between domestic and international markets has risen dramatically over the recent decades. The correlation illustrates how the diversification benefit of investing internationally isn't as strong as it was previously (R3K-MSCI Developed correlation: 90%, R3k-MSCI Emerging Correlation: 74%). The recent development of the correlation between international and domestic stock supports our reasoning as to why we chose to allocate a smaller portion to international markets. Although our portfolio will be heavily invested in the United States, many of our companies do generate revenue overseas, providing our portfolio exposure to international markets.

Market Timing vs Sector Rotation vs Long Term Hold and Buy

BAM doesn't engage in market timing. Instead, our firm recognizes that different sectors perform uniquely in various economic cycles. Currently, our economic analysis suggests the U.S. is in the late-cycle phase, perhaps nearing a recession. We assessed all 11 sectors, and their performance relative to the economic cycle (using the Fidelity paper), and used this research to guide our sector allocations.

In the table below, you will find the actual sector weights of the Russell 3000, our team's recommended sector allocations, and the rationale behind these choices in comparison to the Russell 3000.

Sector Allocation	R3000 Weight	BAM	Reasoning
Information technology	24.4%	27.00%	We believe that post covid has changed the US economy to be more technology focused.
Healthcare	12.9%	12.90%	Neutral
Industrials	13.10%	12%	Late stage economy cycle shows Industrials does not perform well nor has very high growth.
Consumer Discretionary	14.7%	11.40%	Late stage economy shows CD suffers and it is not a high growth sector.
Financials	10.20%	10.20%	Neutral
Communication	7.40%	7.40%	Neutral
Consumer staples	5.10%	7.00%	CS as a defensive sector that can help balance the portfolio.
Energy	4.30%	3.50%	Energy suffers in a late stage economy and transition to green will hurt oil and gas industry
Utilities	2.80%	3.50%	Utilities as a defensive sector that can help balance the portfolio
Real Estate	3.00%	3.00%	Neutral
Materials	2.10%	2.10%	Neutral
Total	100%	100%	

Security Selection and Valuation

Our security selection process encompasses our economic analysis, sector allocations, equity strategy (GARP), fundamental factor-based screening (see below), specific security analysis including our BAM 13 framework (see research section), and DCF and DGM valuation. Each security analysis is presented to the firm and included in the portfolio based on a majority vote.

Security Valuation Methodology

The valuation method begins with establishing screening criteria that our team uses to determine securities that fit our investment philosophy and equity strategy. After the screening process, we compare each security using the BAM 13 framework. Next, we review company SEC filings and equity research reports such as Argus, Value Line, J.P. Morgan, and Barclays. Additionally, we reviewed quarterly earnings reports and management presentations. Finally, we review each company’s industry outlook using these similar sources and IBIS World database. Reviewing these reports helps BAM understand each company’s competitive position in its respective market. Additionally, our firm evaluates a company's intrinsic value using Discounted Cash Flow (DCF) and Dividend Growth (DGM) valuation models. All these measures are implemented for an analysis heavily based on fundamentals.

Market Capitalization and Liquidity

We adhere to the client's criteria and our Growth vs. Value research, screening for companies with market caps over $2B. Additionally, we consider an average daily trading volume of at least 50,000 shares as a standard liquidity measure.

Fundamental Factors

In executing our GARP strategy, we use the following financial metrics in our screening process:

- **Country of Domicile U.S.**
- **Market Cap: ≥ $2 Billion**
- **GICS Sector**
- **Revenue Growth: 2018-2025**
- **Revenue Growth: 2023 vs 2025**
- **EPS Growth: 2018-2025**
- **EPS Growth: 2023 vs 2025**
- **Price/Earning-to-Growth**
- **Price to Free Cash Flow**
- **Gross Profit to Total Assets**
- **Return on Invested Capital**
- **Ebit/Interest**

The components mentioned were designed specifically for BAM's GARP (Growth at a Reasonable Price) strategy, which emphasizes leveraging growth securities with good value. We considered three key metrics: growth, value, and management.

To determine which stocks, tend to outperform, we compared the historical performance of U.S. Growth and Value indexes. Our research revealed that U.S. Large Cap Growth outperformed U.S. Large Cap Value, U.S. Small Cap Growth, and U.S. Small Cap Value in the past decade, leading us to focus on large growth companies.

BAM's screening process involved assessing 5-year historical revenue growth and future revenue projections to identify high-growth prospects. To align with our GARP strategy, we examined two EPS metrics: 5-year EPS growth (adjusted CAGR) and projected EPS growth through 2025.

In addition to the growth metrics, we considered value metrics, such as PEG ratio, Price to Free Cash Flow and Gross Profits over Total Assets. Finally, we reviewed management metrics, focusing on Return on Invested Capital and the EBIT/Interest ratio to evaluate how well companies are managed.

Deviation Discipline

BAM will maintain our growth at a reasonable price strategy unless there's a significant economic change within the assumed one-year management period. In such a case, we'll adjust our asset and sector allocations accordingly.

If the portfolio underperforms the benchmark and has a Tracking Error of 2.5 or higher at mid-year, we will shift our domestic equities to lower allocation to the highest valuation stocks and add more value stocks.

See the proposed portfolio and benchmark characteristics below.

Equity Portions

BAM Portfolio	VS	Russell and MSCI
1.05	Beta	.95
21 Billion	Median Market Cap	103 Billion
17.6	FWD P/E	15.6
3.4	P/B	3.01
12.0%	EPS Growth 1 YR (23 vs 22)	10.2%
1.3%	Dividend Yield	1.90%

	Less Than	Approximately Equal to	Greater Than	Varies Widely
Market Capitalization				X
Portfolio Beta			X	
P/E Ratio			X	
P/B Ratio			X	
Dividend Yield	X			
Earnings Growth Rate			X	

Portfolio Construction

The portfolio construction process commenced with a reevaluation of our investment philosophy. Subsequently, we reviewed the CFAOC request for proposal to assess the client's objectives, time horizon, and risk tolerance. Adopting a top-down approach, we then conducted a comprehensive macroeconomic analysis to guide our global asset allocation strategy, focusing on key regions: the United States, China, the E.U., India, South Korea, and Japan. This analysis emphasized crucial economic indicators, including GDP, inflation, unemployment rates, and 10-year yields. Following this economic assessment, we turned our attention to evaluating asset performance, considering historical risk and return metrics for the following:

- Domestic Equities
- Fixed Income
- Cash (T-Bills)
- Emerging International Markets
- Developed International Markets

When analyzing these asset classes, we utilized a discount cash flow model developed by Dr. Damodaran to calculate the equity risk premium for domestic equities. Additionally, we constructed an Excel portfolio optimizer to observe the most efficient mix of the five assets to find the maximum returns, minimum risk, and maximum Sharpe ratio. Considering the optimizer only established the best mathematical allocation using historical data, we tactically adjusted the designation of our assets based on our economic outlook. Our firm placed less emphasis on emerging and developed markets and more on domestic equities to better align our investment philosophy as well as the client's risk profile.

Our target asset allocation is 60 percent domestic equity, 5 percent emerging markets (India), and 35 percent fixed income. The asset classes are discussed below.

Domestic Equities

The domestic equity portion of our portfolio is strategically allocated among all eleven GICS sectors as a risk management tool (Diversification). We first reviewed the allocation of each sector based on the allocation of our Russell 3000 benchmark. Then, we tactically adjusted our allocation after considering the economic cycle we are in (late to recessionary) as well as our underlying GARP strategy. To maximize the most efficient use of BAM's limited resources, the sectors that made up less than 10% of the total allocation were executed as ETFs. These sectors comprised approximately 26.5% of our domestic equity and comprised the following: Real Estate, Energy, Utilities, Materials, Communications, and Consumer Staples. The remaining domestic equity positions was divided into individual securities and consisted of the following sectors: Healthcare, Technology, Financials, Consumer Discretionary, and Industrials.

Equity Diversification Guidelines

Our portfolio diversification strategy allocates 60% to U.S. Equities, 5% to Emerging Markets, and 35% to fixed income. This allocation emerged from extensive research, including a global economic outlook, research papers, firm-wide discussions, and portfolio optimization. We initially sought to maximize the Sharpe ratio using the portfolio optimizer for an optimal risk-return balance, this resulted in a 30% U.S., 20% Developed International, 10% Emerging Markets, and 40% fixed income allocation. However, we made tactical adjustments to enhance return while maintaining a strong Sharpe ratio. The final allocation of 60% U.S. Equities, 5% Emerging Markets, and 35% fixed income yields an expected return of 8.43% with a Sharpe ratio of 0.65.

Our domestic equity portfolio is diversified through investing in all 11 sectors, when our sector allocation is less than 10% we diversify by investing in a broad sector ETF, and when the allocation is greater than 10% we would invest through individual stocks with each company being equally weighted within the sector.

To mitigate the risk associated with domestic stock investments, we slightly diversified into international markets. We allocated 5% of our portfolio to India due to the growth potential in their economy.

AVERAGE PERCENT INVESTED

The allocation of each security is listed in the table below. As clearly outlined in the RFP guidelines, no individual security occupies more than 5% of the overall portfolio. Each security has equal weight within its respective sector allocations.

Domestic Portfolio	**BAM**	**Number of Stocks**	**Average Weight per Security**
Information Technology	27%	7	3.86%
Healthcare	12.9%	4	3.22%
Financials	10.2%	3	3.4%
Consumer Staples	7%	ETF	
Industrials	12%	4	3%
Consumer Discretionary	11.4%	4	2.85%
Energy	3.5%	ETF	
Communications	7.4%	ETF	
Materials	2.1%	ETF	
Real Estate	3.0%	ETF	
Utilities	3.5%	ETF	
Total	100%	28	

Emerging Market Portfolio	BAM	Number of Stocks	Ticker
India	100%	Mutual Fund	MINDX
Total	100.00%	1	

NUMBER OF STOCKS AND FUNDS IN THE PORTFOLIO

Our domestic equity portfolio comprises 23 stocks and 5 ETFs across different sectors. Our international equity portfolio consists of one Mutual fund for our chosen emerging market that we deem the most desirable for investment.

	# of Funds	# of Stocks
U.S.	6	22
India	1	0

Equity Sell Discipline and Risk Management

At BAM we manage our equity risk through five different perspectives:

1. Analysis of Portfolio Excess Return Attribution
2. Real-time tracking of our portfolio performance versus CFA OC Blended Benchmark
3. Regular (Weekly) Review of Macro and Idiosyncratic risks
4. Equal weighting within each sector to minimize idiosyncratic risk
5. Monitoring our Equity Tracking Error

In compliance with the client's guidelines, a stock will be sold if it reaches a 30% stop-loss for all individual equities or if it increases to 10% of the equity portion of the portfolio. If the latter condition is met, BAM will sell the security until it is only 5% of the equity portion.

If our firms see negative changes in the fundamentals of a company or industry, we will conduct a thorough top-down security review and analyze the market's driver, sector performance, and individual company headwinds. If our analysis indicates a negative outlook, the stock will be sold, and another will be reviewed and selected to take its place.

When a stock reaches its intrinsic value, which was calculated by our DCF and DGM models, we will conduct a security review and update our analysis to determine if we should continue to hold said security. If we believe the equity has reached its temporary ceiling, it will be replaced by another security from the same sector.

If overall market conditions change, we will revisit our strategic asset allocation and sector decisions.

To ensure our portfolio does not veer too far from the benchmark, BAM uses tracking errors to measure our portfolio's performance. If the portfolio tracking error exceeds 2.5 by mid-year and portfolio returns are below the benchmark, BAM will shift its investment strategy from growth stocks and invest more in value. In the case of our portfolio exceeding the benchmark by more than 2.5%, then we will continue with our strategy.

It is expected that the BAM team will stay within the discipline described above.

Mutual Fund and ETF Selection

Domestic Equity

We decided to invest in an ETF if its overall allocation in our U.S. Equity Section was less than 10%. We made this decision as a result of attempting to minimize idiosyncratic risk and to optimize BAM's limited resources. BAM's final domestic equities ETF allocation is 26.5% of the U.S. equities sector, distributed across Communications, Consumer Staples, Energy, Utilities, Real Estate, and Materials.

International Equity

For our emerging market segment, BAM selected India. When determining our equity allocation, we aimed for an actively managed fund. Our evaluation considered fund expense ratios, AUM, tracking error, dividend yield, and short and long-term performance, leading us to choose the Matthew India Fund (MINDX). It is our opinion that emerging markets tend to have higher risk and lower corporate transparency. In this environment, we prefer to have a team of experts pick the specific securities rather than go with broad benchmarks. As a result, BAM decided to go with an actively managed fund ran by portfolio managers who are well tenured having over ten years of experience managing this fund. MINDX prioritizes sustainable growth through fundamental factors. Despite its 1.15% expense ratio, we find its outperformance and consistency justify the choice. Furthermore, the fund exhibits lower tracking errors compared to similar funds highlighting its resilience in an emerging market that is characterized by volatility and uncertainty.

Fixed Income

Based on our economic forecast, BAM had three specific goals with Fixed income:
-Having a high duration to take advantage of possible future rate cuts
-Achieve a high short-term yield via allocation to short term T-bills.
-Focusing on high credit quality due to the concern of recent rates remaining higher for longer than expected.

We used U.S. Treasuries to maximize duration while avoiding alternatives such as long-term corporate which did not provide adequate risk reward and had lower credit ratings. Furthermore, we allocated a portion of our assets into MBS and cash (T-bills) which provide higher yields and can be used to take advantage of rates remaining higher for longer. Finally, we invested half of our fixed income in the U.S. aggregate index which aligns with our economic outlook relative to consensus.

We analyzed fixed-income ETFs based on the following metrics: credit risk, yield-to-maturity, yield-to-worst, duration, and expense ratio. After carefully considering these metrics as well as our investment objectives, we chose the following four ETFs to add to our fixed income section: iShares Core U.S. Aggregate Bond ETF (AGG), SPDR Portfolio Long Term Treasury (SPTL), iShares MBS (MBB), and U.S. Short Term Treasuries (SGOV).

Sell Discipline-Mutual Funds and ETFs

Our strategy involves closely monitoring the performance of ETFs and mutual funds in comparison to their designated benchmarks. If any of these investments fall short of their benchmarks by 50 basis points or more, we'll initiate a sell. This approach enables us to safeguard against significant losses on underperforming assets while preserving the flexibility needed for our long-term investment horizon. When extensive research indicates a reasonable expectation that the ETF in question will return to our accepted performance range within a month, our team is open to deviating from our standard discipline.

When selecting the individual securities, we used a screener that applies our GARP equity strategy to filter for a pool of potential stocks. Additionally, we applied our BAM13 framework to check the securities from the screener for those that would be most healthy and have growth potential. After having our selected securities, we each administered a fundamental analysis and applied valuation models using DGM or DCF models to help assist our final recommendation. Allocations to individual securities were based on equal weightings within each sector while diversifying across industries. Our final domestic equity portfolio consists of six sector ETFs and 22 individual stocks covering the remaining five sectors.

International Markets

After making tactical adjustments to our portfolio optimizer, we allocated 5% of our assets to international equities, specifically in emerging markets. Based on our economic analysis, India was the only foreign market we wanted exposure to. BAM selected the Matthews Index Fund (MINDX), which best aligns with the team's strategy of large-cap growth. To minimize risk while capturing overall market performance, and because of the team's unfamiliarity with specific Indian securities, the team wanted an actively managed ETF. Altogether, India has exhibited better economic growth due to a more attractive labor market as a beneficiary of offshoring in comparison to alternatives such as China which is experiencing political and geographical turmoil. India’s focus on improving its infrastructure also offers a promising outlook when considering its long-term growth potential.

Fixed Income

For the fixed-income portion, we looked at the following sub-asset classes:

- Treasury Bonds (Short/Intermediate/Long)
- U.S. Aggregate Bond Indices (LBUSTRUU)
- Corporate Bonds (Short/Intermediate/Long)
- Municipal Bonds
- High-Yield Bonds
- Non-Agency and Agency MBS
- ABS
- Preferred Stock

To optimize our fixed income allocation, we began by evaluating historical performance in both economic contractions and expansions. Our firm is anticipating interest rates to reach their peak and foreseeing potential cuts in late 2024, we aimed for a longer duration compared to our benchmark, the U.S. Aggregate Bond Index, primarily using U.S. treasuries. However, in the event of prolonged elevated rates, we are prepared to leverage T-Bills, offering a relatively high yield with minimal risk. Furthermore, we incorporated MBS, historically robust performers, to enhance overall yield, all the while maintaining low risk by focusing on agency-backed investment-grade securities.

To surpass our benchmark, we strategically diversified sub-asset classes, achieving a higher duration (7.61) and a slightly lower yield-to-worst (5.51) than the benchmark's 6.10 duration and 5.48 yield-to-worst. Despite our present lower yield and increased duration in comparison to the benchmark, we anticipate the normalization of the inverted yield curve, resulting in faster drops in short-term yields relative to long-term yields. Consequently, our fixed income portfolio is expected to outperform the benchmark.

Pricing and Stop-loss Monitoring

Our firm will continuously track the CFAOC portfolio positions in real-time through a shared spreadsheet on Google Drive, with frequent security pricing monitoring. Performance and results will undergo analysis during regular BAM meetings. These meetings will occur weekly during the academic calendar and bi-weekly during non-academic sessions, combining in-person and virtual sessions throughout the year. In addition, we will maintain a close watch on weekly stop-loss levels, promptly identifying securities nearing the 30% stop-loss limit during these meetings, initiating the process for suitable replacements. Our monitoring will also extend to the top 5 under and over-performing securities to determine when a security review is warranted, along with reviewing securities within +/- 5% of intrinsic value.

Compliance

We vote on all equity selections, and all decisions are based on a majority vote. Adherence to CFAOC and BAM policies and guidelines is monitored by the Chief Compliance Officer. Furthermore, all decisions must be approved by the Managing Director, and all trades are executed by the Trader. The faculty advisor is copied on all trade proposals and has veto power on decisions.

Rebalancing

The portfolio will be rebalanced as necessary based on our analysis of economic conditions, sector weights deviations, and individual security weights deviation. Otherwise, BAM will rebalance annually to maximize time and cost efficiency, and minimize execution risk.

Risk Management

We manage risk through five different perspectives:

1. Weekly Review of Macro and Idiosyncratic risks

2. Real-time tracking of BAM Portfolio Performance versus CFAOC Benchmark

3. Analyzing Portfolio Excess Return Attribution

4. Monitoring the Equity Portfolio's Tracking Error.

5. Diversification across asset classes, geography, and within sectors.

A significant deterioration in any of these factors results in a deep review of potential portfolio actions. Within individual securities, BAM manages risk in three ways. First, we do a fundamental analysis of the company's operations and risks. Second, BAM diversifies across all eleven sectors, additionally, we equal weight within each sector to further reduce risk in individual securities. Finally, we monitor each security's individual performance on a weekly basis, including any news releases, management commentary, earnings releases, analyst reports, and other market changes. We are also implementing the use of Tracking Error as a risk control tool in our equities portfolio, as discussed in the Equity Sell Discipline and Risk Management section of this RFP. Within Fixed Income, we monitor risk via regular analysis of the U.S. economic outlook and its impact on rates. Should the outlook strengthen to the point of increasing expected rates, we would manage risk by lowering the duration of our bond holdings. We strongly believe this approach allows us to keep within reasonable levels.

CASH RESERVES AS RISK CONTROL

We do not intend to use cash reserves as a method of risk control. The cash will be fully invested within the portfolio throughout the year except during short periods between rebalancing. With Treasury securities giving a safe high yield, we find it unnecessary to hold cash.

Information Sources and Research

BAM’s primary source of information and data is the Bloomberg Terminal. Additionally, we use supplemental sources such as the IMF, World Bank, U.S. Bureau of Labor and Census Bureau, Financial Times, Wall Street Journal, the Value Line Investment Survey, WRDS analytics module, CRSP, Compustat Databases, IBIS databases, and a vast collection of academic and industry papers through our library. Our firm utilized prominent academic and industry research papers, financial journals, and publications; as well as historical and real-time financial data to inform our macroeconomic outlook, investment strategy, and individual security analysis. Our most recent addition to this research “library” is the following paper.

“RIM-based Value Premium and Factor Pricing Using Value-Price Divergence” by Lin William Cong, Nathan Darden George, and Guojun Wang. February 18, 2023

BAM's primary insight gleaned from Cong, George, and Wang's research centers on redefining the concept of value through the lens of the Residual Income Model (RIM). In this model, the notion of value is shaped by a company's prospective performance, incorporating monthly earnings forecasts and a three-period residual income calculation to estimate the intrinsic value (V) of equities within the firm. By contrasting the RIM valuation with market prices (P), we arrive at the "value-to-price" (V/P) ratio, which serves as a gauge for forecasting future stock returns. The subsequent step involves formulating the "value-price-divergence" (VPD) by averaging the V/P ratio of individual stocks and considering portfolio size.

These metrics, integral to the RIM's four-factor model, offer predictive insights into stock returns and have the potential to augment existing asset pricing models. The model's predictive strength lies in its forward-looking growth analysis, a perspective that aligns more with growth considerations than pure value. It represents a fusion of the two, providing a unique perspective on defining value based on future growth, indirectly correlating with our Growth at a Reasonable Price (GARP) strategy.

Furthermore, BAM continues to use the following papers that have been mentioned in prior proposals to you:

- “Value versus Glamor Stocks: The Return of Irrational Exuberance?” by Benoit Bellone and Raul Leote de Carvalho. August 27, 2021.
- “How Does Quality Work?” by Obenshain of Verdad Capital. October 4, 2021.
- “Is (systematic) value investing dead?” by Ronen Israel, Kristoffer Laursen, and Scott Richardson. March 14, 2020.
- “The Other Side of Value: The Gross Profitability Premium” by Novy-Marx. June, 2012.
- “The Business Cycle Approach to Equity Sector Investing” Fidelity Investments research. Sept. 30, 2022.
- “The Cross-Section of Expected Stock Returns” by Fama/French. June 1992

Unique Approaches to Information

To further enhance our qualitative and fundamental equity analysis, our team has adopted the BAM 13 analytical framework. This framework, broadly structured, evaluates historical and prospective growth, operational efficiency, and corporate governance. Its integration into our analysis enables the selection of companies that exhibit growth, efficient management, shareholder-focused operations, and superior performance relative to competitors.

We employ the 13 criteria listed below.

Criteria 1-3 focus on companies that are growing and leverage their top-line growth to increase their bottom line. Criteria 4-5 target companies that reside in growth industries and target companies that invest in future growth. Criteria 6-9 look at company stability, historical efficiency, and stable to conservative debt management. We have included criteria 10 because of the excessive inventory due to the recent oversupply of inventory after the easing of the supply chain caused by COVID-19 and the slowdown of consumer spending. Criteria 12 seeks to identify companies with good value while 13 identifies companies that are well-managed for their investors.

BAM 13

1. Future revenue growth 2023-2025 CAGR (Higher than industry growth between 2023 and 2025, %)

2. Future EPS growth 2023-2025 CAGR (higher than industry growth between 2023 and 2025, %)

3. Has EPS growth exceeded Revenue growth 2023-2025? (CAGR)

4. Industry Growth exceeds GDP growth 2025 vs 2023

5. Is R&D as a percent of sales flat or rising? 2025 vs 2023

6. Is the current year and next year forecast EPS trend flat or up over the last 90 days?

7.Is operating income margin improving 2019, 2021-2023 in a row?

8. Is Working Capital Turnover Ratio improving 2019, 2021-2023 in a row?

9. Is Debt/Equity Ratio flat or declining in 2019, 2021-2023?

10. Is Days Inventory on Hand declining or stable (trend Q4 2019 to Q3 2023)?

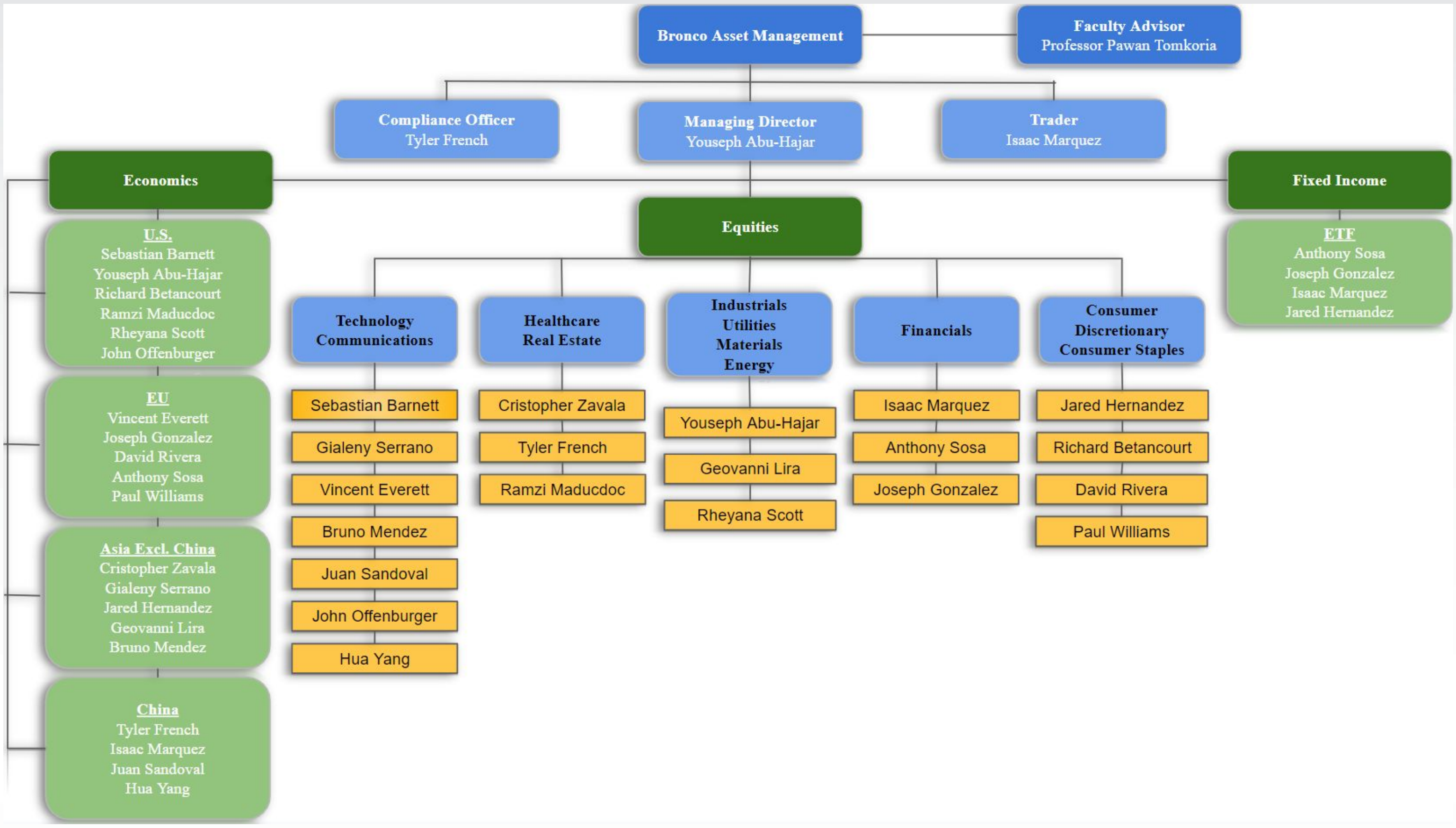
11. Is Net Insider Buying exceeding Selling over the last 4 quarters?

12. Is PEG Ratio below 2? (If not, use relative comparison)

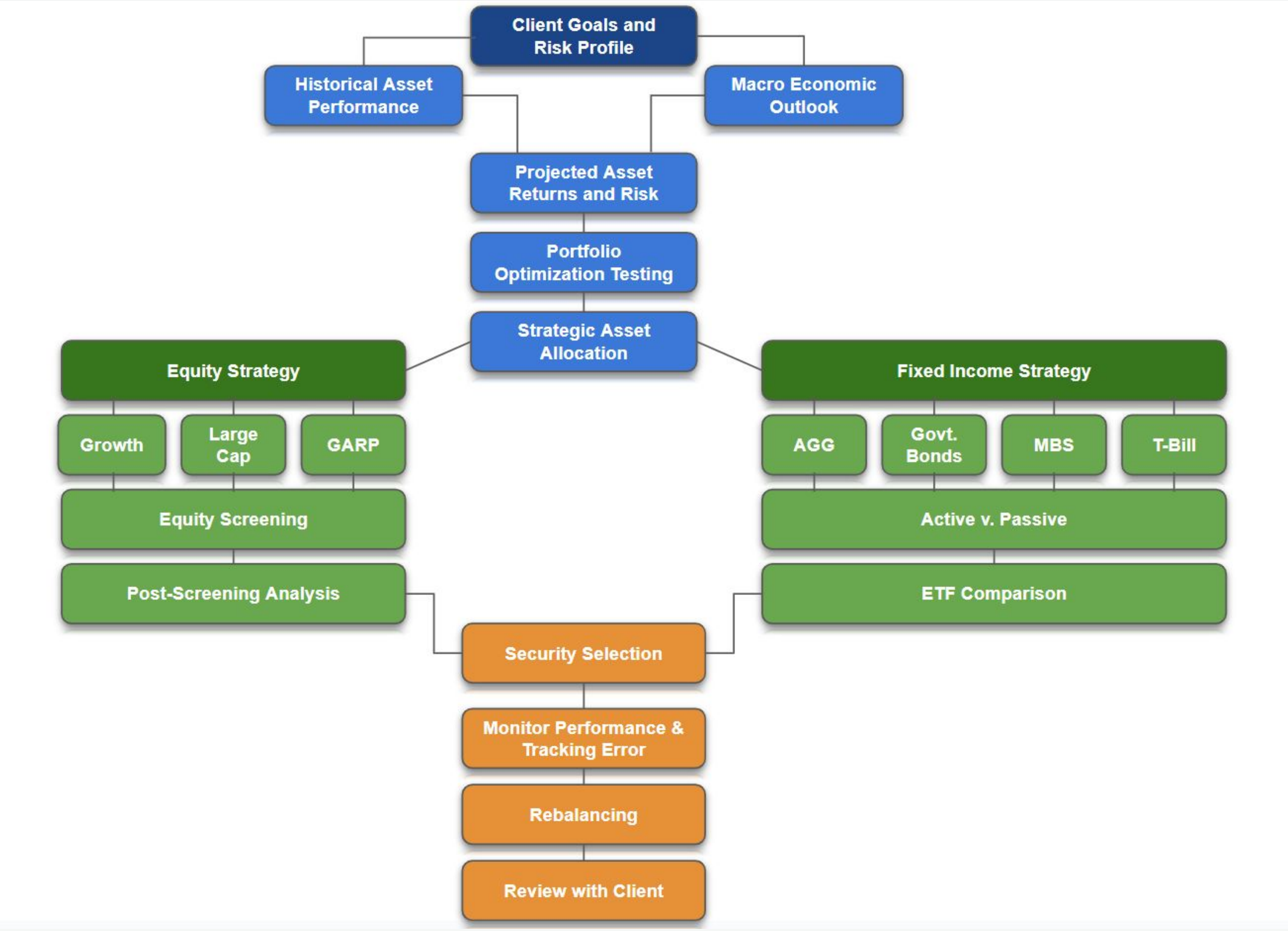
13. ISS Governance Quality Score (lower is better) (5 pass, 6 fail)

The BAM team allocated 60% of our time and resources into a top-down macro-economic analysis. We focused our efforts on constructing a world economic outlook and forecast, a capital markets outlook, optimizing portfolio asset allocation, and equity and fixed income strategies. For the remaining 40% of our time, the team focused on a bottom-up approach that consisted of sector allocation, stock screening, and individual fundamental equity analysis and valuation.

Appendix III: CPP BAM Organization Chart



Appendix IV: Investment Process Flowchart



Appendix V: CPP BAM Portfolio

Asset Class	Sector	Ticker	Name	Portfolio Weight
Domestic Equity	Information Technology	MSFT	Microsoft Corp	2.31%
		FTNT	Fortinet Inc.	2.31%
		ON	ON Semiconductor Corp	2.31%
		QCOM	Qualcomm Inc.	2.31%
		CRM	Salesforce Inc.	2.31%
		VRSN	Verisign, Inc.	2.31%
		ANSS	ANSYS, Inc.	2.31%
	Healthcare	HUM	Humana Inc.	1.94%
		UTHR	United Therapeutics Corporation	1.94%
		VRTX	Vertex Pharmaceuticals Incorporated	1.94%
		RMD	Resmed Inc.	1.94%
	Consumer Discretionary	TPX	Tempur Sealy International Inc.	1.71%
		FOXF	Fox Factory Holding Corp	1.71%
		PHM	PulteGroup, Inc.	1.71%
		HLT	Hilton Hotels Corporation Common Stock	1.71%
	Finance	DFS	Discover Financial Services	2.04%
		WEX	WEX Inc.	2.04%
		USB	US Bancorp	2.04%
	Industrials	HI	Hillenbrand, Inc.	1.80%
		STRL	Sterling Infrastructure Inc.	1.80%
		J	Jacobs Solutions Inc.	1.80%
		WSC	Willscot Mobile Mini Holdings Corp	1.80%
	Consumer Staples	XLP	Consumer Staples Select Sector SPDR Fund	4.20%
	Energy	XLE	Energy Select Sector SPDR Fund	2.10%

Appendix V: CPP BAM Portfolio

Asset Class	Sector	Ticker	Name	Portfolio Weight
Domestic Equity	Communication	VOX	Vanguard Communications Services Index ETF Fund	4.44%
	Materials	XLB	The Materials Select Sector SPDR® Fund	1.26%
	Real Estate	REZ	iShares Residential and Multisector Real Estate ETF	1.80%
	Utilities	XLU	The Utilities Select Sector SPDR® Fund	2.10%
			Total Domestic Equity Allocation	**60.00%**
Asset Class		**Ticker**	**Name**	**Portfolio Weight**
Emerging Markets	India	MINDX	Matthew's India's Fund	5%
Asset Class		**Ticker**	**Name**	**Portfolio Weight**
Fixed-Income	Short-Term Treasury	SGOV	iShares 0-3 Month Treasury Bond ETF	3.50%
	Long-Term Treasury	SPTL	IShares Core US Aggregate Bond ETF	8.75%
	U.S Investment Grade Bonds	AGG	The iShares MBS ETF	17.50%
	U.S Mortgage-backed Bonds	MBB	SPDR Portfolio Long Term Treasury ETF	5.25%
			Total Fixed Income Allocation	**35%**
Total				**100%**

Appendix VI: Sample Analyst Report

Equity Research Report

Jacobs Solutions

Analysts: Y. Abu-Hajar, I. Marquez, A. Sosa, J. Hernandez

Executive Summary

Recommendation: BUY

Mkt Cap: $16.78 B

Ent Value: $23.09 B

Sector: Industrials

Purchase Price: $ N/A

Current Price: 133

52W High/Low: $141.16/109

DCF Valuation: $149

As of 10/31/2023

We value Jacobs Solutions (J) at $149 per share using a DCF analysis with a 2.5% terminal growth rate and a 10% cost of equity. With the stock currently trading at $133, we estimate this stock to offer an 11.63% potential upside from its October 31, 2023, closing price. We also view J as undervalued on a relative basis as it is priced below on a PE & P/B ratio, while at the industry average on a P/FCF basis.

	J	Industry
DCF Value	$149	$133 (10/31/23 Price)
P/E Ratio	20.7	23.0
P/B Ratio	2.5	4.7
P/FCF Ratio	16.1	16.0

Key Metrics:

	Jacobs Solutions Inc.		Jacob Solutions Inc.
Past 5 Years Sales CAGR	8.67%	Price / CF (TTM)	16.1
Past 5 Years EPS CAGR	10.7%	PE (Forward)	15.88
2 Y FWD EPS CAGR	14.02%	PEG FY	1.96
EBIT Margin (TTM)	6.94%	DCF Valuation	$149

Appendix VI: Sample Analyst Report

Jacobs Solutions Inc.	2019	2020	2021	2022	2023 E	2024 E
Revenue ($ MM)	$12,737	$13,567	$14,092	$14,922	$16,033	$ 16,505
Rev Growth %	-15%	6.5%	3.9%	5.9%	7.5%	3%
EPS	5.05	5.48	6.29	6.93	7.33	8.40
EPS Growth %	13%	8.5%	15%	10%	6%	14.5%
ROE %	14.64%	8.53%	7.14%	10.73%	13.64%	15.28%
LTD/Equity Ratio	12%	21%	22%	30%	23%	-
PE Ratio	18.55	18.14	21.49	15.66	18.19	15.88

Company Overview

Jacob’s Solutions is a premier engineering services company in the United States. Headquartered in Dallas, Texas, and incorporated in 1957, Jacobs Solutions Inc. is a global provider of technical, professional, and construction services.

The company’s wide range of services includes engineering and construction services, as well as scientific and specialty consulting. These services cater to numerous sectors and conditions encompassing connected mobility, water, smart cities, advanced manufacturing, environmental remediation, national security, and defense infrastructure. Jacobs Solutions serves a broad spectrum of clients including corporate entities, organizations, and governmental bodies, with a global customer base.

The company generates a significant portion of its revenue through four primary business lines: People and Places Solutions (P&PS), Critical Mission Solutions (CMS), Divergent Solutions, and PA Consulting. Through the years, Jacobs Solutions has adapted to market trends affecting its clients and remained highly focused on innovation. This includes the transition to green energy, remediation of nuclear sites utilizing innovative nuclear materials, and bolstering national security and defense infrastructure. This alignment with market trends is poised to drive the company's growth in the respective sectors it serves. Their largest segment, P&PS, which accounts for 57% of their revenue, leverages technology and data science to address future challenges such as climate change, renewable energy, and transportation. Their second biggest segment (CMS), which accounts for 29% of their revenue, in 2022 generated $4.4 billion in revenue from its technical consulting and applied science research services to federal government agencies. A substantial 73% of the revenue from this line was sourced from the Department of Defense (DoD), Department of Energy (DoE), and intelligence community, showcasing a defense-heavy research focus. Simultaneously, PA Consulting provides strategic consulting services across manufacturing, defense, security, and government transportation sectors, aiding clients in navigating complex operational landscapes.

With a diversified service offering across high-growth sectors, Jacobs Solutions is well-positioned to leverage its expertise in engineering, construction, and consulting to deliver value to its clients and stakeholders. The company's financial metrics and growth trajectory reflect a steady performance, with prospects for further expansion in its core and emerging market segments. As Jacobs Solutions continues to evolve, its diversified service lines and global operational footprint underline its capability to address the multifaceted demands of its clients across both governmental and private sectors, thereby contributing to its sustained growth and industry prominence. However, it is important to note that the CMS Segment will be spun off to shareholders in 2H 2024, more is discussed on this spin-off below.

Industry Analysis Engineering & Construction (E&C) Industry: Trends and Outlook

The Engineering & Construction (E&C) industry has experienced substantial market volatility, marked by a nearly 50% increase in the *S&P 500 Construction and Engineering Index*. This report outlines key developments and trends in the industry, highlighting both opportunities and challenges that firms may encounter.

Market Drivers for the Industry

Government funding has been a significant driver of growth in the E&C industry, with many firms poised for expansion. Recent U.S. infrastructure laws have instilled confidence in sustained funding, though concerns about a potential recession linger. Given the fragmented nature of the industry, acquisitions have become a popular strategy among firms. Spending on U.S. manufacturing construction surged by 80% in a year, and nonresidential construction spending increased by 18.1% YoY, largely propelled by government investments. Approximately $1 trillion is anticipated to be allocated across various sectors through 2030.

The rising demand for artificial intelligence (AI) applications has driven investments in data centers, which are capital-intensive projects. Investments in data centers are projected to grow at a 44% compound annual rate, reaching $420 billion by 2029.

With AI-focused data centers requiring substantial power, there is a growing need for enhanced power infrastructure. Companies such as Jacob's Solutions, are well-positioned to benefit from this trend, particularly in the context of clean energy solutions. Federal legislation has led to project delays due to regulatory ambiguities.

Infrastructure and green energy transition are also key drivers for the industry, as manifested by the growing U.S. and global investments in infrastructure and lower hydrocarbon energy usage. For example, the IRA Bill passed in the U.S. under President Biden, will spend $1.75 Trillion on mostly infrastructure-related projects.

Despite potential challenges, such as tighter lending standards and increased costs, the long-term outlook for the E&C sector remains optimistic due to substantial infrastructure laws passed recently. The U.S. government's significant investments in road work, clean energy, rural broadband networks, and advanced technology facilities are expected to sustain growth trends for contractors.

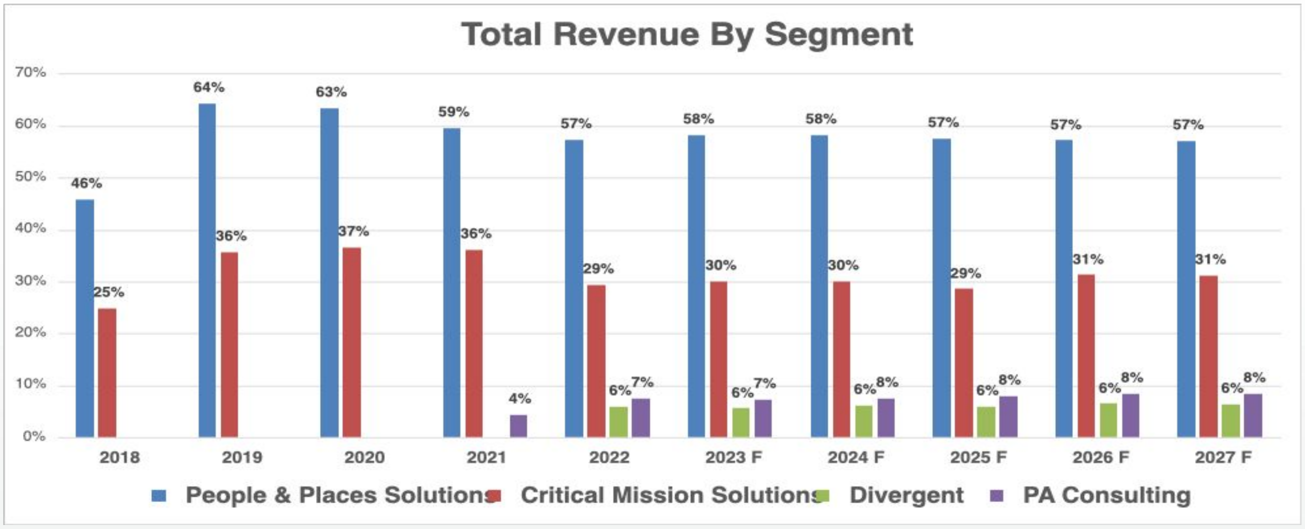
Although earnings in the E&C sector can fluctuate due to factors like construction mishaps or adverse weather conditions, the enhanced government funding across multiple sectors is expected to provide a buffer against traditional recessionary impacts.

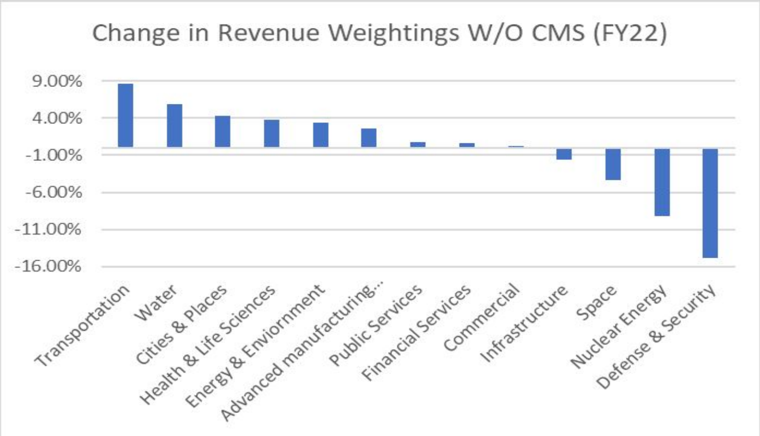
Jacobs is highlighted for its ability to create above-average capital appreciation. Moreover, a possible sale or spinoff of its CMS business will induce higher growth and value for its shareholders. In conclusion, the E&C industry is poised for growth, driven by government investments, especially in areas like data centers and clean energy. However, challenges such as regulatory uncertainties and potential cost increases must be navigated for sustained success in this dynamic market.

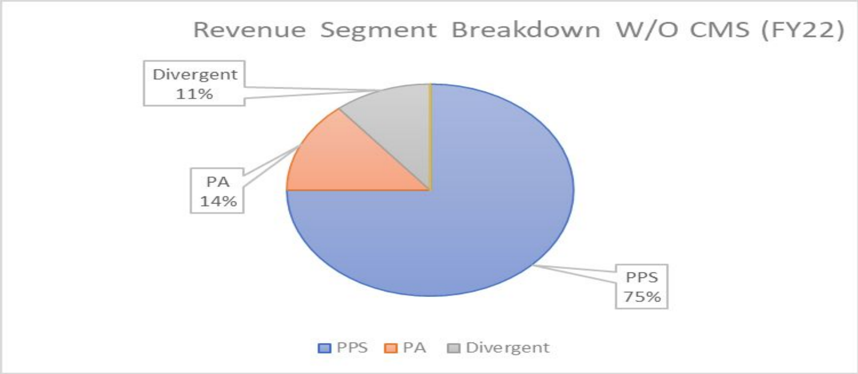
Investment Thesis

Jacob’s Solutions is a premier engineering services company that has had strong historical profit margins over the last year with a 6.15% EBIT margin vs. the sub-industry average of 1.41%. Their critical infrastructure, water & environment, semiconductors, life sciences, and digitally enabled solutions segments have outperformed in the past few years and are projected to continue outpacing the industry in the coming years. Jacobs are a global leading data center design firm and data center engineering firm. Additionally, they’ve served the top 10 semiconductor manufacturers for 30 years with ⅘ of the world’s computers built in facilities designed by their team.

Jacobs has a substantial addressable market of $8 trillion, covering infrastructure, water, cybersecurity, and defense. There are three aspects of Jacob’s that we especially like. First, 25% of revenue comes from defense and intelligence-focused activities with CMS segment included (11% post spin-off), for the US government. We believe these activities have a heightened importance and are more protected from current political gridlock. This combination should provide a stable source of growth for Jacobs. Second, Jacobs has a 29-billion-dollar backlog that represents over 2 years of revenue, and which has been growing at a near 9% CAGR over the last 4 years. This combination provides confidence in future growth. Lastly, Jacob’s is aligned with the emerging growth industries of the future. The company is focused on the technology industry including, semiconductors, green energy transition, evolution of AI, water and infrastructure, and cybersecurity. The following figure displays their revenue by segment:



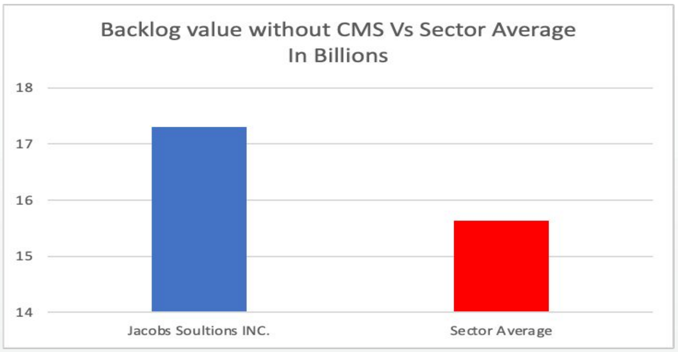


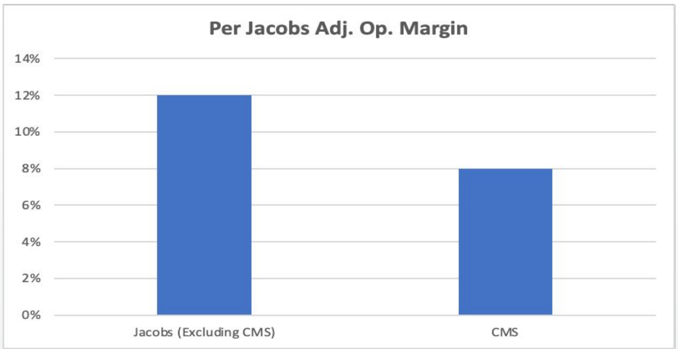


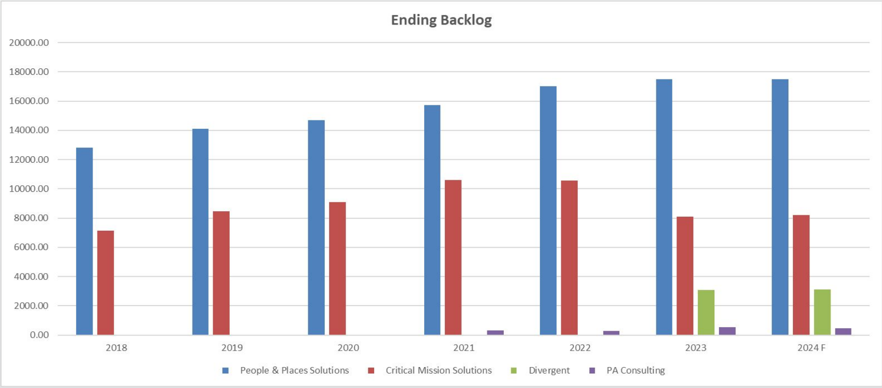
CMS Spinoff / Sale

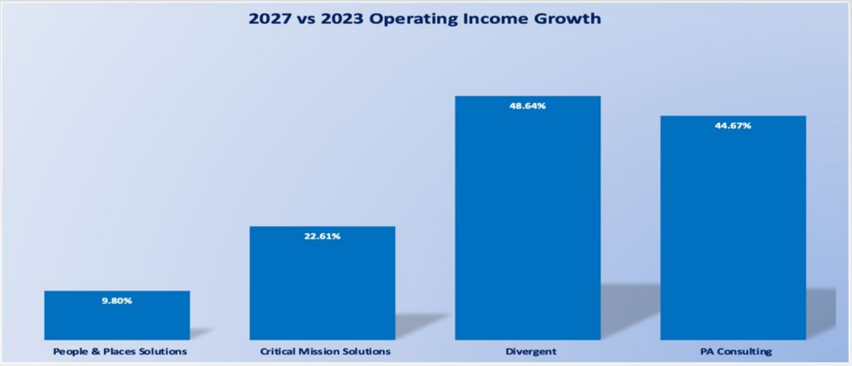
On May 9, 2023, the company announced its intent to separate its CMS business, which it expects to complete by fiscal 2024. This unit alone is valued at over $4 billion. While the company has stated its intention to do a tax-free spin-off, it seems to have also indicated some openness to a sale. The decision to separate CMS is a result of a comprehensive review and evaluation to identify opportunities that streamline Jacobs Solutions' portfolio and maximize strategic focus and potential growth opportunities for both companies' futures.

We are optimistic about their planned spin-off of the CMS segment for a number of reasons. First, the separation allows each component to have a greater management focus. It allows the remaining Jacobs to focus on a business that has higher margins and higher growth. We believe this could lead to a re-rating of the stock to have higher valuation multiples. Finally, balance sheet flexibility that results from the spinoff and sale of CMS will allow J to increase ownership in their second fastest-growing segment (PA consulting) from 65% to 100%.









Risks

Jacobs Solutions operates in a highly competitive environment, where effective competition is essential to maintain market share and overall business performance. The company's success hinges on its ability to implement a three-year corporate strategy (2022-2024) effectively. This strategy includes the establishment of a new business unit, Divergent Solutions, aimed at capitalizing on growth opportunities in areas like Climate Response, Consultancy & Advisory, and Data Solutions. Jacobs Solutions has set ambitious targets, seeking 7-10% revenue growth across various business segments and a goal of achieving $10 adjusted earnings per share (EPS) by 2025. However, it's important to note that the contracts in the company's backlog are subject to potential adjustments, cancellations, or suspensions by clients, making the backlog an imperfect indicator of future revenues and earnings.

Furthermore, Jacobs Solutions faces the risk of diminished demand for its services due to external factors such as rising inflation, interest rates, and escalating construction costs. The company is especially susceptible to inflation because it assumes the risk associated with fixed-price contracts. While a significant portion of its revenue comes from cost-reimbursable contracts, inflation's impact has been relatively contained in recent years. Nevertheless, if inflationary pressures persist, it could have a more substantial impact in the future, particularly if Jacobs Solutions expands into markets with a greater emphasis on fixed-price contracts. In summary, inflation, interest rate fluctuations, and increases in construction costs have the potential to significantly influence the company's business and financial performance.

Summary

BAM views Jacobs Solutions as an attractive investment given its strategy in industries primed for growth as a result of the structural shifts in the Global economy This is reflected through the spin-off of CMS which allows them to prioritize higher profit and growth segments. Jacobs backlog demand, which significantly exceeds the sector average, and its EBIT margin of 6.14%, far surpassing the sub-industry average 1.41%, demonstrates the company’s strong performance and competitive position in the market. This adaptive business model combined with forward thinking leadership gives BAM confidence in Jacobs ability to capitalize and capture market share.

Appendix VI: Jacobs DCF Valuation

DCF Valuation Model: Continuing Operations Perspective: All Amounts in Millions — Last Updated 10/31/23

Description	NAME	Sector	Market Cap (BMMn)	Ticker	DCF Valuation: on 1/1/2024	148.74	Current Stock Price	133.38
JACOBS SOLUTIONS INC.	JAC(	Financials	$ 16,820.07	J	Upside (Downside)	11.52%	Total Potential Return	21.52%

Completed Months of Fiscal Year	3

Cost of Capital	
10 Year T-Bond Rate	4.57%
Cost of Debt (WACC_COST_DEBT from BB)	5.56%
Equity Risk Premium (Damodaran)	4.95%
Beta (5Y Monthly vs R3K)	0.80
CAPM Ke	10.00%
Cap Structure % Debt	22.62%
Cap Structure % Equity (at MV)	77.38%
WACC	8.68%

Assumptions	2020	2021	2022	2023	FY 2024E	FY 2025E	FY 2026E	FY 2027E	FY 2028E	Perpetuity
Sales Growth	6.5%	3.9%	5.9%	7.4%	7.45%	2.94%	7.03%	-2.32%	5.24%	2.50%
EBIT Margin	7.6%	8.1%	10.0%	8.9%	8.87%	9.42%	9.93%	10.51%	10.52%	10%
Tax Rate	12.5%	39.5%	18.4%	15.2%	25%	25%	25%	25%	25%	25%
Net WC Turnover (excluding Cash)	24.6	48.0	28.1	30.7	30.69	30.69	30.69	30.69	30.69	30.69
FA Turnover Ratio	10.3	10.3	12.5	14.5	14.46	14.46	14.46	14.46	14.46	14.46

Income Statement Projections										
Sales	13,566.98	14,092.63	14,922.83	16,033.92	17,227.74	17,734.68	18,981.22	18,541.35	19,512.66	20,000.47
EBIT	1,031.39	1,146.30	1,499.73	1,422.93	1,528.88	1,670.42	1,884.01	1,948.53	2,052.21	2,000.05
Taxes on EBIT	129.3200277	452.8200888	275.3607177	215.858586	382.22	417.61	471.00	487.13	513.05	500.01
Net Earnings Before Interest	902.0679723	693.4839112	1224.372282	1207.07441	1,146.66	1,252.82	1,413.01	1,461.39	1,539.16	1,500.04
Diluted # Shares (Millions)	132.72	131.27	129.45	133.16	133.16	133.16	133.16	133.16	133.16	133.16

Balance Sheet Projections										
Net WC (excluding Cash and ST Debt)	552.38	293.59	531.26	522.44	561.34	577.86	618.47	604.14	635.79	651.68
Net Fixed Assets excl. Intangibles excl GW	1,322.39	1,367.73	1,194.60	1,109.00	1,191.57	1,226.63	1,312.85	1,282.42	1,349.61	1,383.35
Total Debt+Other LT Liabilities	3,721.40	5,016.00	4,873.25	4,969.72	4,969.72	4,969.72	4,969.72	4,969.72	4,969.72	4,969.72

Cash Flow Statement Projections										
Net Earnings Before Interest	902.07	693.48	1,224.37	1,207.07	1,146.66	1,252.82	1,413.01	1,461.39	1,539.16	1,500.04
Depreciation	91.07	101.02	102.45	103.54	111.25	114.53	122.57	119.73	126.01	129.16
Amortization	90.60	149.80	198.60	179.02	179.02	179.02	179.02	179.02	179.02	179.02
Net WC (Incr) Decr	(284.95)	(147.89)	(802.83)	(802.83)	(38.90)	(16.52)	(40.62)	14.33	(31.65)	(15.89)
Fixed Assets (Bought)Sold	(118.17)	(92.34)	(118.22)	188.41	(193.82)	(149.59)	(208.79)	(89.31)	(193.19)	(162.90)
Free Cash Flow	680.62	704.08	604.37	875.22	1,204.21	1,380.26	1,465.19	1,685.17	1,619.35	1,629.42

Valuations	FY 2024E	FY 2025E	FY 2026E	FY 2027E	FY 2028E	Perpetuity
PV	1108.02829	1168.57599	1141.409705	1207.92301	1068.03241	17388.4689
Cumulative PV	1,108.03	2,276.60	3,418.01	4,625.94	5,693.97	23,082.44
-Total Debt Net of Cash						3,758.58
Equity Value						19,323.86
Equity Valuation/Share at Start of FY 2024						145.12
Value at 1/1/2024:						148.743869