BRONCO

ASSET MANAGEMENT

REQUEST FOR PROPOSAL

CBAM CAL POLY POMONA

STUDENT MANAGED INVESTMENT FUND

California State Polytechnic University, Pomona

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November 8th, 2022

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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 25,000 students of all backgrounds. 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. 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 1000 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. 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 (SMIC) hosts industry professionals and provides workshops based on fundamental security analysis and portfolio theory. SMIC's mission is to promote campus-wide financial literacy by providing the knowledge to understand the essentials of investing and personal finance. The club provides resources to BAM analysts, provides managerial support to the SMIF class, and offers a platform to discuss the portfolio and equity strategy. SMIC also supports the recruitment and training of candidates for the SMIF program.

Finance Society

Cal Poly Pomona Finance Society is a diverse collaboration of students pursuing careers in finance and investment management. Finance Society hosts reputable guest speakers from the corporate sector to lead informational seminars. This provides an opportunity for students to identify potential finance-focused career paths while simultaneously learning to network and explore professional development opportunities. Members not only support one another academically but also inspire each other to become astute leaders in the financial industry and capital markets.

Campus Culture and Support

CPP culture stays true to a Polytechnic approach to education. By focusing on our "Learn By Doing" approach, the University cultivates success through experiential learning that inspires creativity, innovation, and exposure to real-life challenges. Our thriving faculty is strongly committed to developing and preparing students for success while also creating a positive influence in their field of study and education. CPP provides an abundance of resources to support student success.

Our mission is aligned not only with educational success but also with promoting healthy social experiences and exposure to a global community. Our campus proudly represents a diverse population of students and faculty from a variety of backgrounds, which contributes to the creation of a rich and positive campus environment. The University is highly ranked nationally and regionally in educational equity.

The University's College of Business Administration offers several programs that prepare students for a successful career such as BAM, CFA SMIF, CFA Institute Research Challenge, Dr. J. Douglas Ramsey Bloomberg Lab, and the Argus University Challenge. CPP FRL Department Chair, Dr. Wei Yu, is extremely supportive of SMIF and has made the Bloomberg Lab accessible campus-wide. Also, Mr. Pawan Tomkoria serves as the SMIF Program Director and dedicates substantial time and commitment to the SMIF program.

Team Structure

Our team of 16 students were divided into 4 groups to handle different sections of each part of our investment process. We established four economic analysis teams dedicated to the U.S, Europe, China, and selected Asian countries. After analyzing these economies, our teams are reconstructed and assigned to specific stock sectors and fixed income in order to broaden the teams knowledge and develop teamwork skills. The SMIF team also has mentors that have professional experience in the investment field. SMIF mentors provide different perspectives and ideas to 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 5:30 pm 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 7:30 pm. SMIC meetings are held virtually on Tuesdays at Noon while Finance Society meetings are held virtually 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 is directed by diverse, motivated, and diligent undergraduate students who are interested in investments and wealth management. Members have also completed several investment and finance-related courses. The diversity of the group allows for a multitude of perspectives in the decision-making process. This knowledge forms the bedrock of the BAM team's success.

BAM consists of high academic performers and campus leaders. Our students are heavily involved in extracurricular activities and have received various scholarships and accolades, such as the Dean's honors list. SMIF members have successfully completed internships and/or launched careers with high-profile companies such as PIMCO, Capital Group, Citigroup, Goldman Sachs, JP Morgan, First Republic Bank, Foresters Financial, Cathay Bank, FastPay, 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. 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 and this 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 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.

Faculty Advisor, Professor Pawan Tomkoria has over 30 years of experience in the medical and electronics industries, with positions in finance, general management, and international business. He joined Cal Poly Pomona as an adjunct faculty professor and is currently an investment and management consultant. Professor Tomkoria combines his industry experience with academic excellence to prepare students for success.

Our Faculty Advisor and Department Chair are extremely dedicated to the SMIF program and spend substantial time with BAM. This includes assuring BAM is focused on the client, and the portfolio is managed on a year-round basis. They create a culture that is supportive but also challenges students to rise to their maximum potential.

Why our team is uniquely qualified

The BAM team is uniquely qualified to manage the investment portfolio for several reasons. First, we have successfully managed the CFAOC funds for the past five years. Furthermore, our team consists of an eclectic group of diverse individuals that bring experience, intellectual capital, and high energy. All our decisions are based on deep fundamental analysis and grounded in strong ethical values. Our teams qualifications are further bolstered by members with personal investing experience. Each individual on the team has taken the time to carefully understand and apply their financial knowledge in building a portfolio that is based on data, fundamental research, and well-supported projections.

Lastly, and most importantly, we are very focused on the client and attuned to their needs and requirements. In this regard, we track the portfolio in real time and assure that the portfolio is managed on a full-year basis.

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 to build long-term wealth for our clients.

All decisions will undergo a rigorous analytical process.

We will remain patient and flexible to accommodate fluctuating market conditions.

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

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

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 and donors.

BAM SMIF will operate with competence, diligence, and in an ethical manner by placing the interest of the client before our own. In alignment with our ethics policy, we have a preference for companies demonstrating strong governance.

Passive Management

The BAM team follows an active strategy in the management of our portfolios. However, if any sector makes up less than approximately 5% 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 in 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 four sectors: Utilities, Real Estate, Materials, and Communications.

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-classes then use ETFs to invest in each class.

Market Overview & Asset Allocation

Introduction

BAM uses our investment philosophy as a basis for guidance. Therefore, BAM uses fundamental analysis to develop a capital market outlook. In this regard, we start by diligently analyzing global economies in order to make a decision that best aligns with our client's investment goals. BAM uses sources such as 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.

Our analysts have 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. We allocate capital based 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 stance on the trajectory of the U.S. economy. The current market consensus is shown in the table below.

U.S. GDP has grown about 2.15% annually over the last 10 years, pre-pandemic. GDP growth was disrupted in 2020 due to the COVID pandemic but recovered strongly in 2021, with an average growth of 1.1% over the two years. As noted in the consensus table below, U.S. GDP is forecasted to grow 1.7% in 2022 and 0.4% in 2023. In terms of inflation, CPI is currently trending at around 8%, the highest it has been in decades. The U.S. Federal Reserve (Fed) has been surprised by the persistence of high inflation and is considered to have lagged in its efforts to keep inflation at their target of 2%. As a result, the Fed has been aggressively raising interest rates to slow the economy and lower inflation. This is reflected in the 10-year Treasury note yield which is now hovering around 4% verses about 1.5% one year earlier. The market forecasts that the yield will come back down the to 3.2-3.4% range between 2023 and 2024. Market expectations for unemployment is to rise to 4.6% by the end of 2024 compared to 3.5-3.7% currently, reflecting the Fed's efforts in slowing the economy.

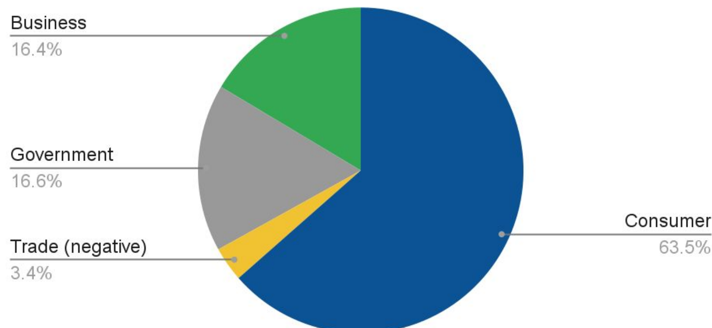
United States of America

Consensus	2022E	2023E	2024E
GDP Growth	1.7	0.4	1.4
CPI%	8	4.1	2.5
10 Year Yield	3.86	3.44	3.19
Unemployment	3.7	4.3	4.6

Source: Bloomberg

Last Updated: October 29, 2022

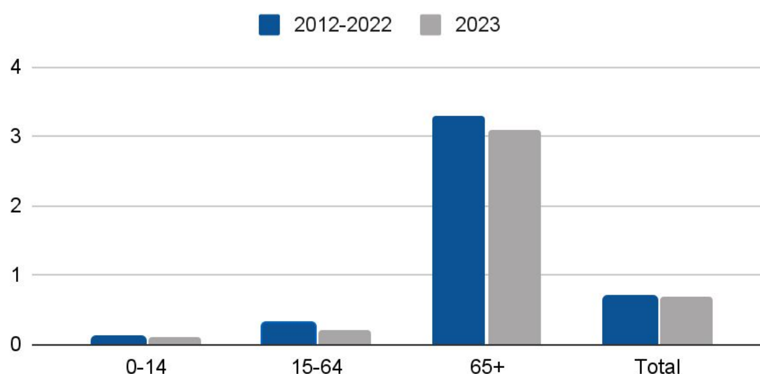
To arrive at our assessment of the market consensus, BAM conducted its own deep research into the U.S. economy. U.S. GDP is the sum of spending at four levels: Consumers, Businesses, Government, and Trade (Net Exports). Each component's relative contribution and our outlook for 2023-24 are discussed below:



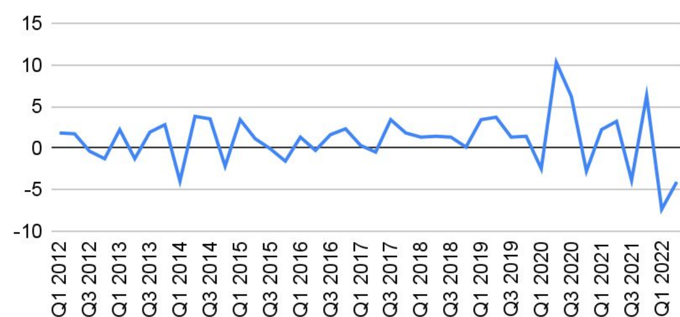
Consumers and Impact on Inflation and Rates

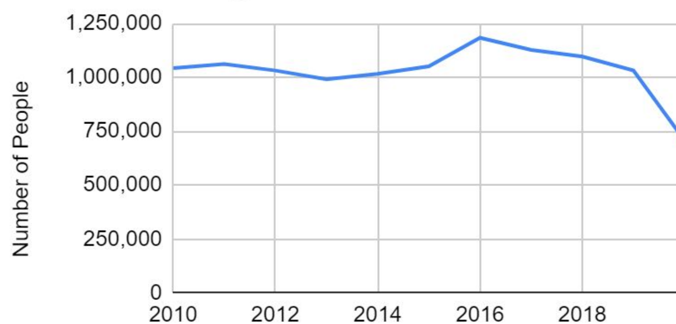
Consumer Spending

Personal expenditures make up the biggest portion of the U.S. economy. BAM's philosophy is that spending is ultimately driven by income. As such, we assess consumer spending by analyzing drivers of consumer/personal income. Total consumer income is driven by two factors: number of earning workers (size of the labor force) and wage growth for each worker. To arrive at growth in the number of workers, we analyzed demographic trends in the U.S. population. As the graph below shows, total population has been growing at 0.7% annually over the past 10 years but growth of various age groups differ significantly. Retirees or near-retirees are the fastest growing segment, increasing 3.3% per year. People in the working age group of 15-64 are growing at only 0.3% while the future worker pool, consisting of the ages 0-14, is growing even slower at 0.1% annually. These trends are expected to continue into 2023 as projected by the U.S. Census Bureau. Our conclusion from this data is two fold: first, a labor pool growth of 0.3% implies a tight labor market that may limit growth, and second, a tight labor market will lead to chronic high wage inflation. We can see this shortage of workers manifested when we look at the ratio of the number of unemployed workers versus employers' job openings from the Labor Department (JOLTS report) (below). This ratio is at the lowest level since 2007. Simply put, demand for workers is double the available supply. The wage inflation issue is highlighted by the current Atlanta Fed Wage Tracker shown below. Wages are rising at 6-7%, the highest in over 20 years.



There are two potential solutions to the labor shortage: increased productivity and immigration. On productivity, below is a graph of recent trends. Immigration trends are also shown below. As these graphs show, both productivity and immigration have been declining in recent years. Given the current political and cultural environment in the U.S. we believe there is greater likelihood of continued downward pressure than upward pressure on both, U.S. Productivity and Legal Immigration..



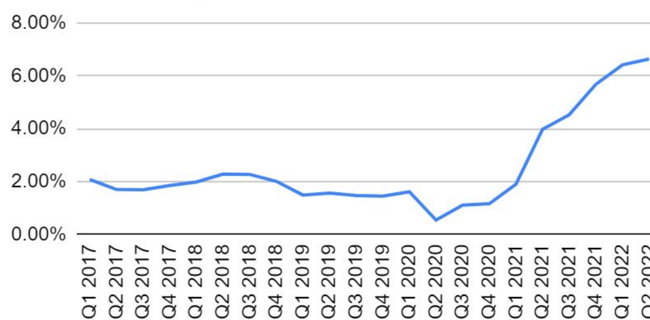


In summary, BAM's view is that labor supply will remain tight, leading to lower growth and higher wages. The higher wages, combined with the small but still increasing labor pool, leads us to believe consumer incomes will stay healthy and thus, the consumer spending portion of the economy will stay healthy.

INFLATION

The Consumer Price Index (CPI) increased to 8.2% as of September 2022. The Federal Reserve has made inflation its primary target and has raised interest rates by 375 basis points in 2022. While supply chain issues, oil prices, and other commodities have kept prices at elevated levels this year, we believe the year over year change in 2023 will be more stable in these areas. On the other hand, labor inflation will be the biggest driver of overall inflation in 2023 and onwards. Given our earlier discussion of the labor pool, we expect labor inflation to remain high for the next few years, leading us to project that CPI in 2023 will be above consensus by 50-75 basis points.

We do acknowledge that the Fed is more focused on the Personal Consumption Expenditure (PCE) measure of inflation, but note that over time trends in the two price movements do mirror each other. Thus, an above-consensus CPI also implies an above-consensus PCE.



INTEREST RATES

As inflation has accelerated, the Fed has been caught off guard. In reaction, they have been aggressively hiking the Federal Funds Rate by 50-75 bps per meeting to try and cool demand and demand-driven inflation. Given our outlook of sustained higher inflation, BAM projects that the Fed will stay aggressive for longer and rates will stay higher than consensus.

CONSUMERS SUMMARY

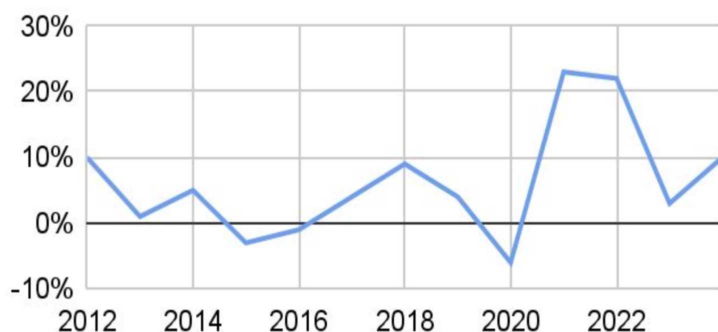
The above analysis leads us to expect strong consumer spending, driven by wage growth. In turn, spending and wages will drive higher than consensus inflation and higher interest rates for longer.

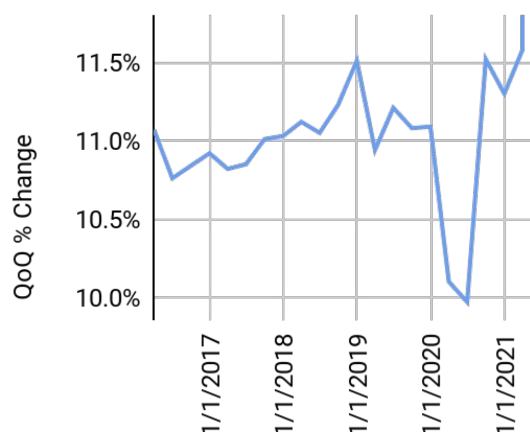
Business Expenditures Analysis

Business Expenditures can be broken down into Non-Residential Investment (72%) and Residential Investment (28%). Each is discussed below.

NON-RESIDENTIAL INVESTMENTS

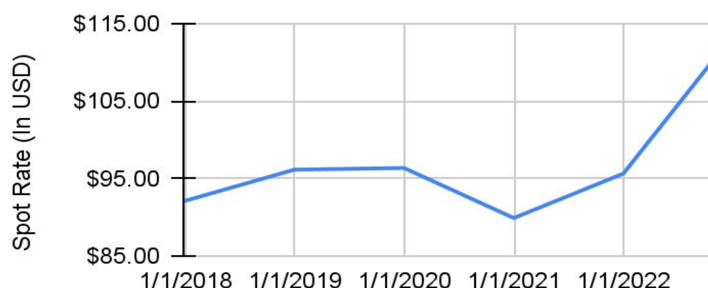
As with consumer spending, we believe business spending will be driven by business income (corporate profits). Current projections of profit growth average 6-7% annually over the next 2 years (see graph below). This is partly driven by the record profit margins seen recently. However, BAM expects that high inflation, especially in wages, combined with higher debt servicing costs due to high rates will likely put pressure on profit margins going forward. Additionally, we see business as being more hesitant on big investments in light of slowing projected economic growth as discussed earlier. Due to these factors, we believe there is some downside to corporate profits projections and thus, to overall non-residential investments.





U.S. DOLLAR OUTLOOK

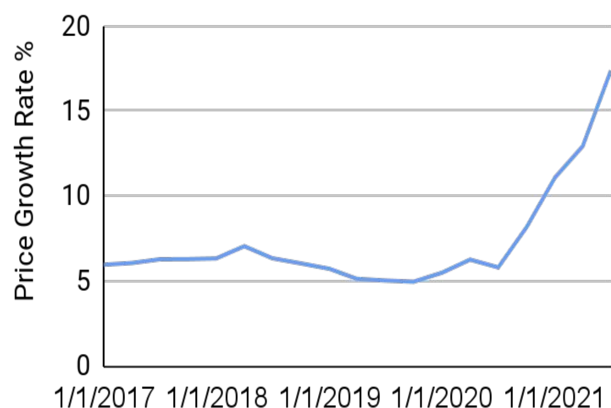
The U.S. Dollar remains as the world's reserve currency and a store of value for investors worldwide. As the Fed implements a tighter monetary policy, the dollar has strengthened substantially as shown below:

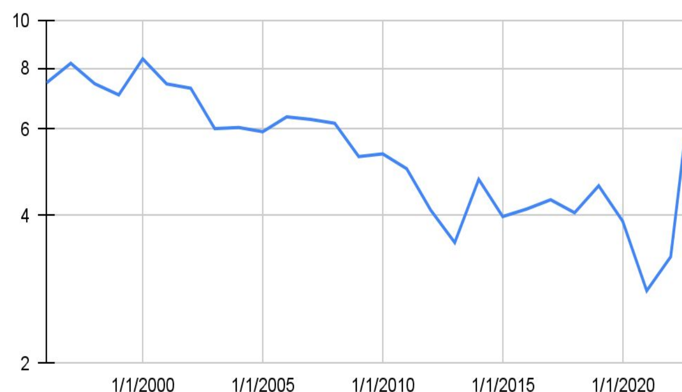


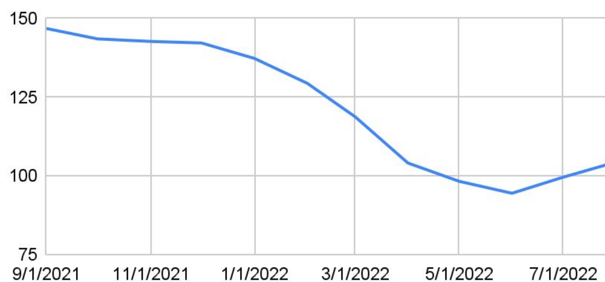
Current forecasts call for the dollar to stay relatively strong at end of 2023. The strong dollar may be an additional factor limiting corporate profit margins in 2023.

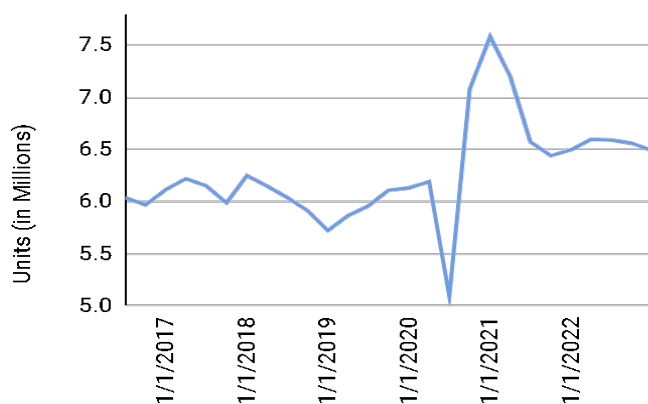
RESIDENTIAL INVESTMENTS

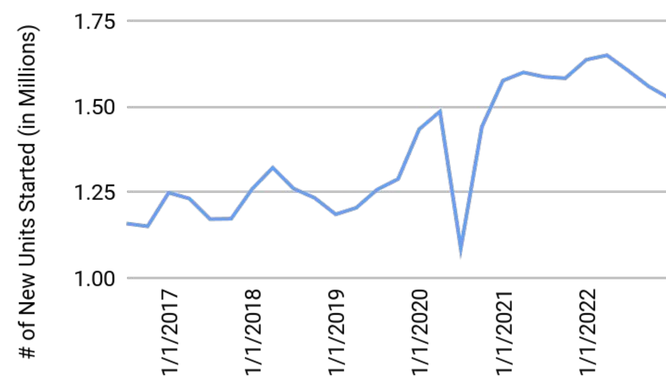
Consumer income and mortgage rates have the most profound impact on the housing market. With the strong price appreciation in recent years and the rapid rise in mortgage rates, home affordability has suffered a dramatic fall.   Mortgage rates have hit new highs that have not been seen since 2008. Housing affordability has gotten worse, and rising interest rates may scare homebuyers. Over the past 5 years, housing affordability has dropped by 30%. Naturally, this has led to a significant drop in home sales and housing construction. Please see graphs below. BAM expects that these events will lead to a significant drop in residential investments.







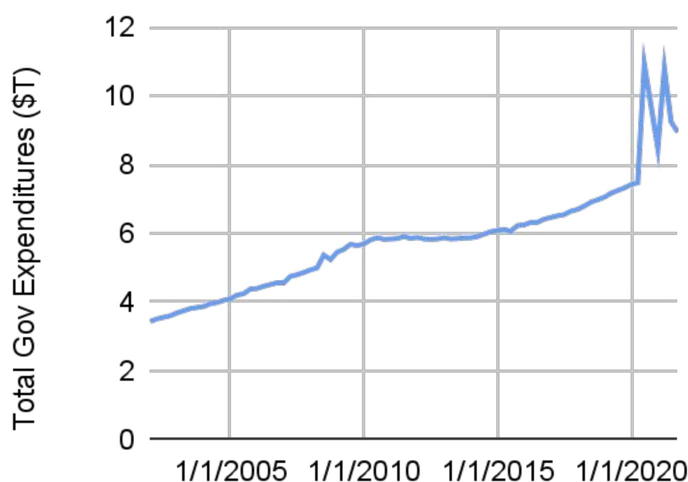


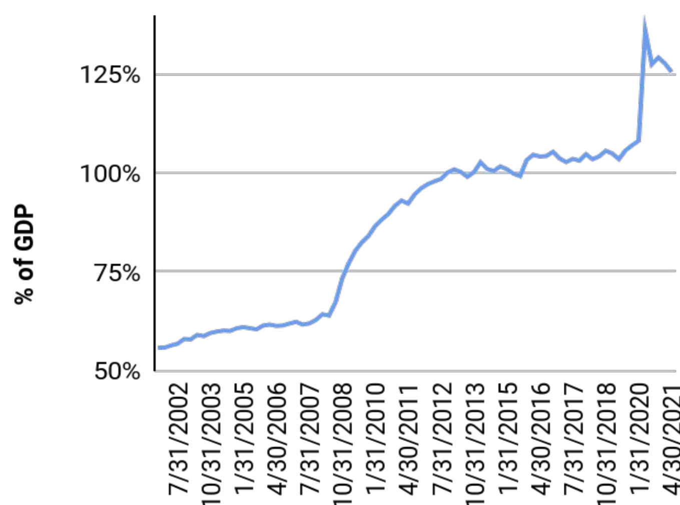


Government Expenditures Analysis

In 2020, government spending spiked due to COVID-19 stimulus packages. Previously approved programs ($13.02T approved in 2020 and 2021 according to CBO and OMB) and recently approved programs ($1.2T Infrastructure Bill and $.7.5T Inflation Reduction Act package) will continue to provide high government expenditures. However, as these programs normalize year to year, total spending growth will slow. The current estimates show that total government spending will decline 1.4% in 2023. Given the current political gridlock in Washington, the still relatively high spending levels this year, and the rising federal debt levels, BAM believes this estimate to be reasonable but possibly optimistic.

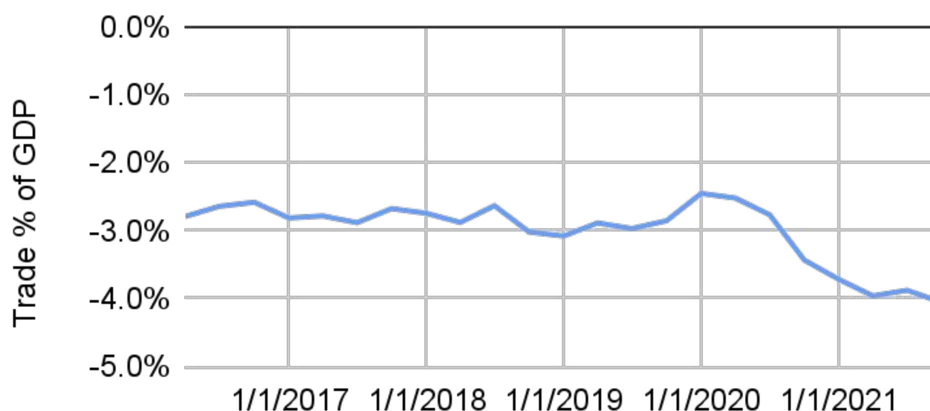
In summary, we see government spending to be a drag on GDP for 2023.





Net Trade Analysis

The U.S. runs the world's largest trade deficit, totaling $970 Billion in the last 12 months to Sept 30 2022, approaching 4% of GDP on an annual basis (see graph). Given the current strength of the US$ (making imports cheaper and exports less competitive), trade wars, an overall trend towards deglobalization, and high consumer prices, we see trade at best staying at -4% of GDP or more likely being a somewhat bigger drag on growth.



U.S. Economic Outlook: Summary

To summarize:
-We expect demographics will lead to strong employment and strong wage growth and thus, strength in consumer spending.
-This will then drive above-consensus inflation and interest rates.
-Business non-residential spending is expected to grow but decelerate as the economy slows and margins come under pressure.
-Residential investments will decline significantly as higher rates and home prices drive down affordability.
-Government spending will detract from growth with political gridlock preventing any new stimulus programs.
-Trade will remain at a deficit and may even become a stronger headwind to growth.

Putting all the drivers together, we project that overall GDP growth will be weak and likely below consensus but not at recessionary levels.

This implies that equities and fixed income both carry risks, equities from low growth and fixed income from rising rates. However, given that the markets discount the future, BAM cautions against excessive pessimism in equities for 2023 as some of the downside may have already been priced into the market. We remain a bit more cautious on fixed income because bond prices are inversely related to rates and market projections for rates are still too low in our opinion. For these reasons, we will take a balanced approach by overweighting equities in sectors that are more stable and defensive, and by reducing interest rate and default risk through our fixed income investments.

E.U. Economic Outlook

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

European Union

Consensus	2020	2021	2022E	2023E	2024E
GDP Growth	-6.4	5.9	3.3	0.2	1.7
CPI%	0.6	2.7	8.8	5.8	2.4
10 Year Yield	-0.03	0.7	3.4	3.2	3.2
Unemployment	7.1	6.9	6.2	6.5	6.4

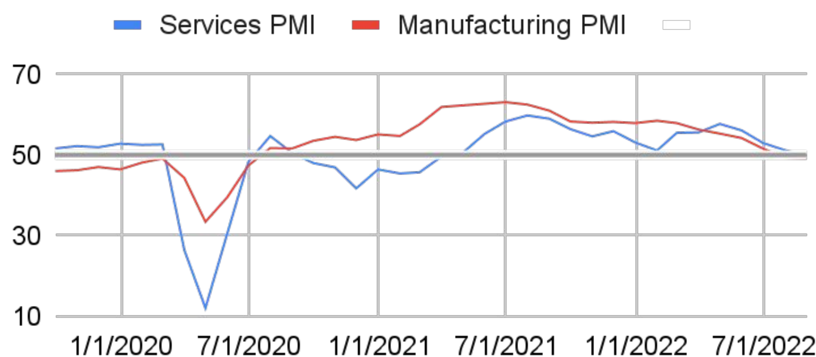
Source: Bloomberg

Last Updated: October 29, 2022

The European economy had a strong recovery from the COVID-19 pandemic, driven by its increasing vaccination rates, falling number of infections, and fewer hospitalizations. However, the war in the Ukraine continues to put pressure on the European economy due to energy shortages caused by a decrease in Russian gas and oil coming into the EU. This has led to supply issues, factory slowdowns, and double digit inflation. This is reflected in the consensus outlook for modest growth in the EU in 2023. For a more complete perspective, our analysis of the EU economy is further detailed below:

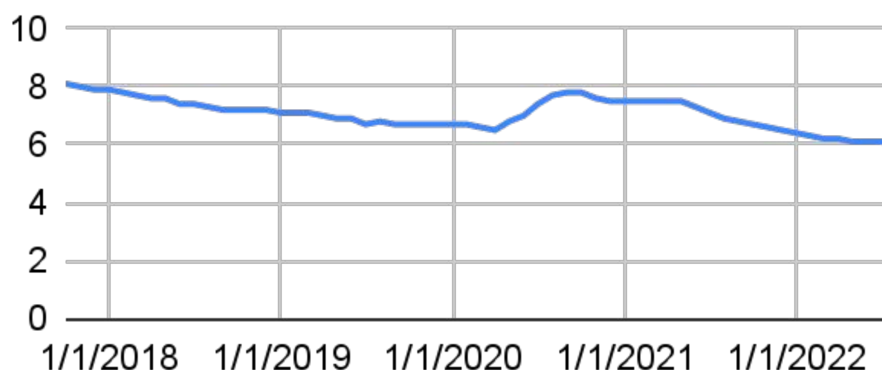
PURCHASING MANAGERS INDEX- COMPOSITE

Both the services and manufacturing purchasing managers index, as seen below, heavily declined during the COVID-19 pandemic but had since recovered nicely. However, the EU is now absorbing significant impact from the Ukraine war. The PMI Services Index reached a high of 59.8 in July 2021 while the PMI Manufacturing Index hit a high of 63.1 in June 2021. Since then, the Services and Manufacturing PMI have both steadily declined to 49.8 and 49.1, respectively. Recently, manufacturing confidence has seen a downward trend due to transportation, raw materials, and severe cutbacks in Russian oil/gas supplies to Europe. The recent decline of the manufacturing PMI index is correlated to the Russian invasion of Ukraine. As the war and high oil prices continue, BAM is very concerned about Europe's ability to grow in 2023.



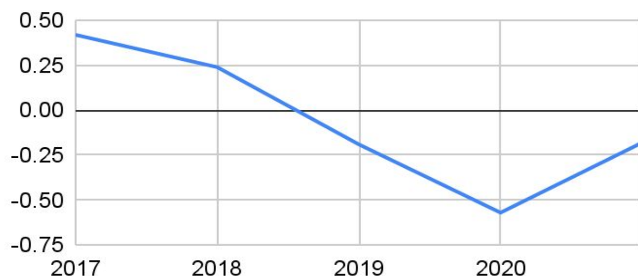
UNEMPLOYMENT RATE

In spite of the fact that the European Union has historically struggled with high unemployment rates, the bloc has recently experienced a positive trend for several years, as seen in the graph below. The EU 2020 target strategy was to have an employment rate of at least 75% (persons aged 20-64) which was accomplished. Europe's active labor market and education policies have enhanced workforce skills and have alleviated the impact that COVID-19 has had on its economy. Europe's recovery plan was to create programs like Coronavirus Job Retention Schemes (CJRS), which have protected jobs and businesses in the EU. Since then, the unemployment rate has seen a healthy decline and is at an all time low of 6%. The working age population in 2018 was roughly 298 million and declined to 285 million by 2021. Due to the shrinking labor pool and a strong historical decline in unemployment, BAM believes that unemployment will continue to decline. BAM recognizes that low unemployment will be a positive contributor to GDP growth. Although we see the economy slowing, the strength in employment, partially supported by demographics, will act as a cushion against a more severe decline.



INFLATION AND INTEREST RATES

Interest rates in the EU had remained near or below zero in the past 5 years, reflected in the German 10 Year Note yield, which serves as a proxy for European interest rates. This was partly been driven by low inflation in the EU, as seen in the graph below, and more importantly, by significant monetary loosening by the European Central Bank (ECB). The Ukraine war and high energy prices have now reversed the situation and inflation has accelerated. BAM expects current strong employment and a shrinking labor pool to push wage growth up, also resulting in sustaining high inflation.



Record levels of inflation forecasted to reach 8.8% in 2022 have dominated the union and have forced the European Central Bank to hike interest rates. The ECB raised its main refinancing rate on July 27 by 50 basis points, on September 14 by 75 basis points, and again in October by another 75 basis points. The current 1.5% rate is expected to rise in the near future if inflation is not tamed according to commentary by the ECB. Furthermore, the ECB significantly increased their balance sheet from 2017 through 2021, from 4.5 trillion euros to 8.6 trillion. For the past 8 months, the ECB has not bought or sold any assets. This indicates to BAM that the ECB is likely to draw down their assets in the near future. We believe that the ECB will follow a similar path that the Federal Reserve took at the beginning of the year. An approach that was characterized by slow action in the beginning and dramatic change towards the end.

BAM believes that interest rates will be higher than market consensus because of the persistently high inflation driven by an extended Ukraine war, severe energy supply disruptions, and strong employment.

E.U. Economic Outlook: Summary

Although Europe's GDP is still projected to grow, the BAM team does not see this low projected growth to outweigh the risks in investing in the European economy. Our view is inflation and interest rates will exceed consensus. While strong employment will provide some support to the economy, strong employment will lead to high wage inflation. Additionally, the Ukraine war will extend for some time; the price of energy and raw materials is remaining high (aided by the latest production cuts by OPEC+), and with the trend being towards some deceleration in globalization, we believe there is a risk that growth will underperform. Additionally we do see a tail risk in the war being expanded beyond Ukraine.

Equities and bonds will both underperform in this environment.

China Economic Outlook

While remaining the world's second-largest economy and the largest measured in purchasing power parity, China's GDP has decelerated in the post-pandemic world. While China had shown a promising recovery in 2021 which boosted expectations, that growth has now declined below pre-pandemic trends due to a number of challenges the country faces. These challenges, like the continuation of the zero-COVID policy that shut down entire economic hotspots, high youth unemployment, drought, and a struggling property sector, has caused a failure to achieve their GDP growth targets this year, and has led to downgraded Bloomberg GDP forecasts of 3.3% in 2022. As China struggles to find its footing, BAM believes that it may face continued economic headwinds moving forward.

The People's Republic of China

Consensus	2022E	2023E	2024E
GDP Growth Rate	3.3	4.8	5.0
CPI %	2.2	2.4	2.1
10-year Rates	2.8	2.9	2.8
Unemployment Rate	4.4	4.1	3.9

Source: Bloomberg

Last Updated: November 6, 2022

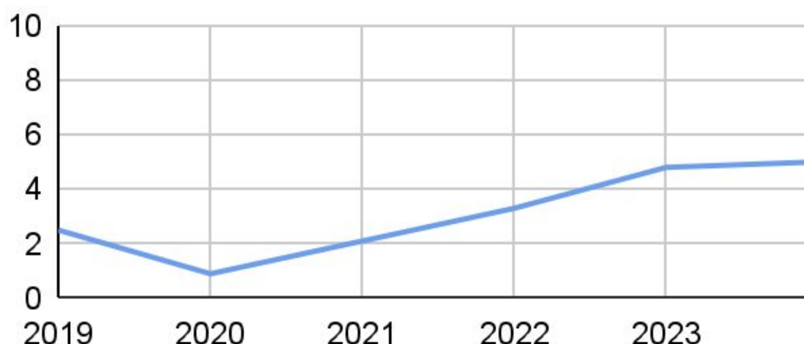
As the world emerges from the COVID-19 pandemic, China's inability to contain the virus has led to the continuation of the zero-COVID policy. Zero-COVID forces large groups of the population to remain home for extended periods of time, reducing economic output, and causing cracks in China's social fabric. BAM believes that China may continue the zero-COVID policy long-term, as their vaccines may show a lower efficacy to newer strains of the virus, and no discussions of ending the policy has materialized within their political spheres. But we will remain vigilant if anything changes

Chinese real estate, a sector that accounts for an estimated 29% of their GDP, remains under duress. According to the China Index Academy, one of China's largest independent real estate research firms, property sales have declined by as much as 25% in 2022, and policy changes designed to curb excess leverage have caused some developers to default on their debts and struggle to complete pre-sold projects. As a result, some homebuyers have threatened to stop paying their mortgages on unfinished projects, and others have stopped paying altogether, which has worsened the property crisis.

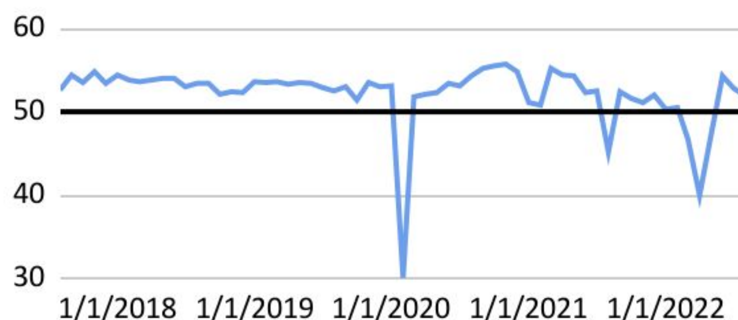
Furthermore, geopolitical risks are now in play as China's aggressive attitude towards Taiwan may amplify tensions in the Taiwan strait, the East China Sea, and the South China Sea. This area accounts for trillions of dollars worth of international commerce, and is used by China for the bulk of their sea based exports. BAM believes that any trade disruptions due to military conflict, as well as potential sanctions from the West, would greatly constrict China's ability to acquire necessary inputs and export finished goods. These developments would be devastating to China's macro environment.

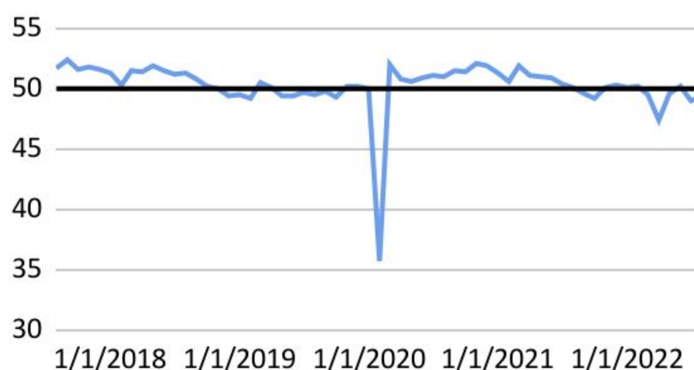
Economic Indicators

The zero-COVID story continues in China's GDP growth forecasts. While China's GDP growth somewhat recovered from the pandemic, it peaked to below the pre-pandemic trend, and has now plateaued in 2022. Current economic conditions have caused downgrades in GDP growth forecasts going forward. Indeed, not only have growth expectations cooled, recent data shows that China has missed its own GDP growth targets this year by 2 points.



While China's services PMI is above the 50 baseline, it now shows a downward trend towards the baseline. Manufacturing PMI recovered after the pandemic lows of 2020, however, it has now declined below the 50 baseline and has remained there throughout 2022. These PMI readings may indicate a contraction of market conditions within China, especially since the readings show a decline to below pre-pandemic trends. BAM believes that the effects of the zero–COVID policy is showing up in this economic indicator as well.





China Economic Outlook: Summary

Based on the economic and political challenges that China faces, we disagree with consensus forecasts of moderate GDP growth. In addition, recent announcements by Chinese leadership indicate a focus on security rather than growth, which may indicate a deprioritization of China's economic ambitions. It is clear that in a post-pandemic world, the tale of China's meteoric rise may be coming to an end. In this volatile environment, we would avoid investing in China.

South Korea Economic Outlook

South Korea

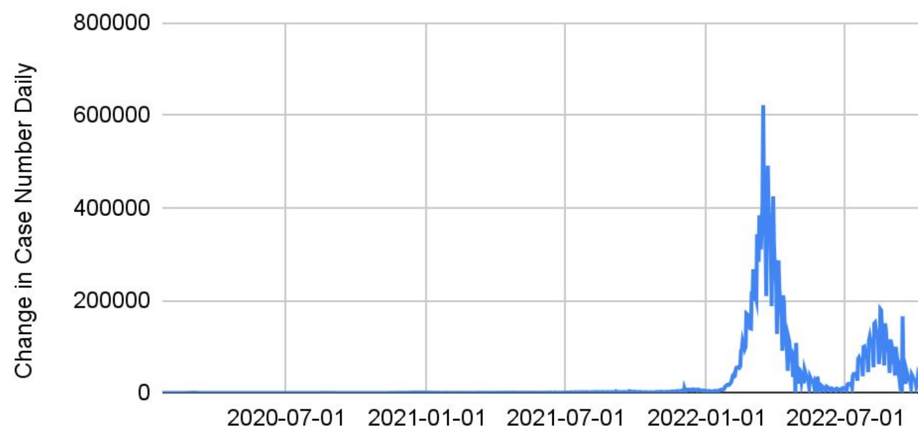
Consensus	2020	2021	2022E	2023E	2024E
GDP Growth	-0.7	4.1	2.6	1.9	2.4
CPI%	0.5	2.5	5.2	3.1	1.9
10 Year Yield	1.7	2.3	4.1	3.6	3.0
Unemployment	3.2	3.6	3.1	3.5	3.5

Source: Bloomberg

Last Updated: October 29, 2022

COVID-19 Response

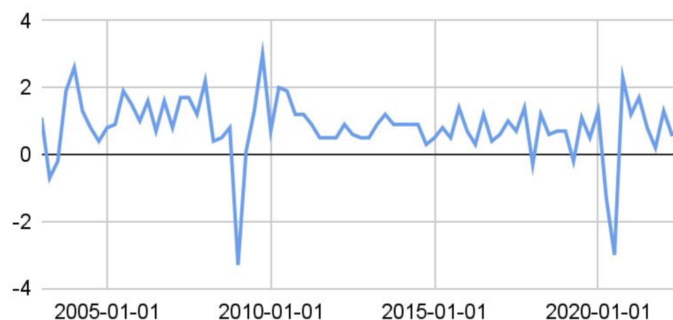
The Republic of Korea's initial response to the COVID-19 pandemic was quite strong, resulting in a low number of new daily confirmed cases. Since January of 2022, daily COVID-19 cases have risen, becoming a major headwind for South Korea. Although they have been successful in handling the resurgence of COVID-19, BAM still considers this a risk because it may indicate South Korea's inability of long-term containment.



BAM CAL POLY POMONA

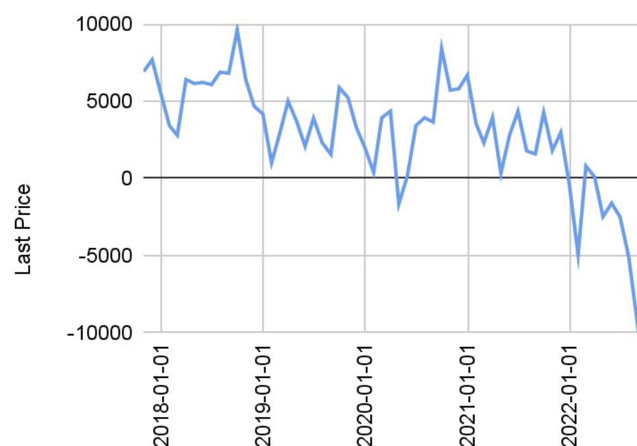
ECONOMIC PERFORMANCE

While initially strong in 2021, South Korea's real GDP has stalled (shown on the right graph), on pace to be nearly halved by the end of 2022. Korea's economy is heavily dependent on exports, which accounts for 42.9% of Real GDP over the past 5 years. Furthermore, during the same time period, 25.6% of exports were to China. China is moving up the value chain and experiencing an economic slowdown, thus South Korea's largest customer may not be buying. Beyond China, other countries are beginning to reshore production for key South Korean exports such as semiconductors. Due to these factors, BAM concluded that a contraction in Real GDP growth may be a consequence.



GOVERNMENT INVOLVEMENT AND MARKET DIRECTION

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 on the right) 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 Outlook: Summary

Overall, the risk of recurring COVID-19, diminishing exports due to deglobalization, weaker Chinese spending, and a decelerating GDP, BAM holds an unfavorable outlook on Korean investments.

Japan Economic Outlook

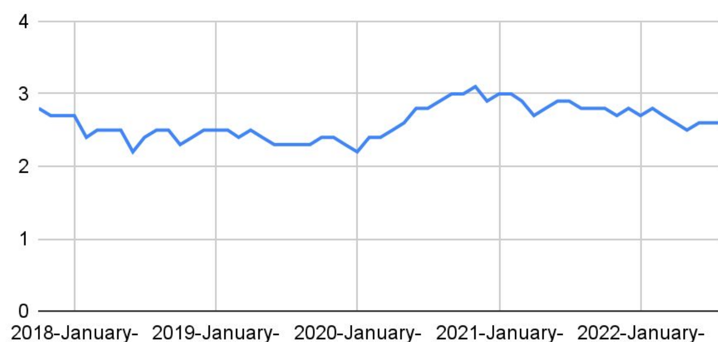
Japan Economic Outlook

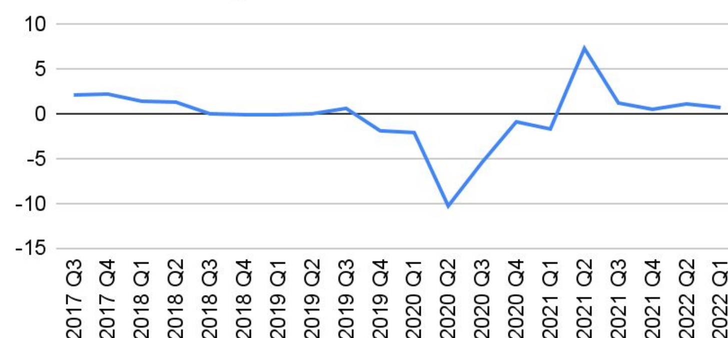
Consensus	2021	2022E	2023E	2024E
GDP Growth	1.8	1.6	1.4	1.1
CPI%	-0.3	2.2	1.5	0.8
10 Year Yield	0.1	0.2	0.2	0.2
Unemployment	2.8	2.6	2.5	2.4

Source: Bloomberg

Last Updated: October 29, 2022

Japan's unemployment (as seen below) is currently on a slightly downwards trend while the country suffers from weak demographics with declining working age and overall declining populations. Furthermore, Japan's economic growth continues to hover near zero (see graph below). While Japan's economy has recovered from the pandemic, rising inflation and Japanese consumers reluctance to spend continue to affect the economy. BAM is also concerned about Japan's exports to China and its manufacturing operations in China as geopolitical risks rise in the region. Given these factors, we have a preference to stay more focused on the U.S. domestic equity markets and avoid Japan. In fixed income, with rising inflation, there is a risk that the Japanese Central Bank may yet have to relent on their near-zero interest rate policy and join the rest of the world in raising rates, making Japanese bonds also unattractive.





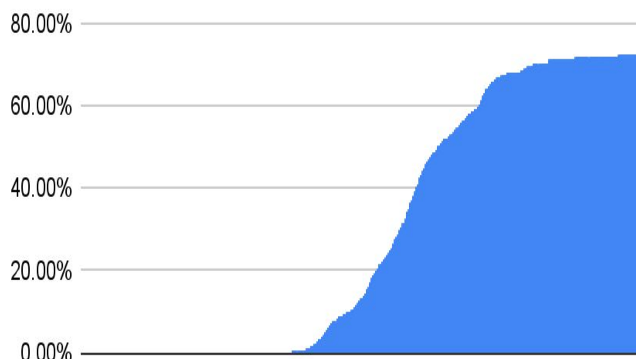
India Economic Outlook

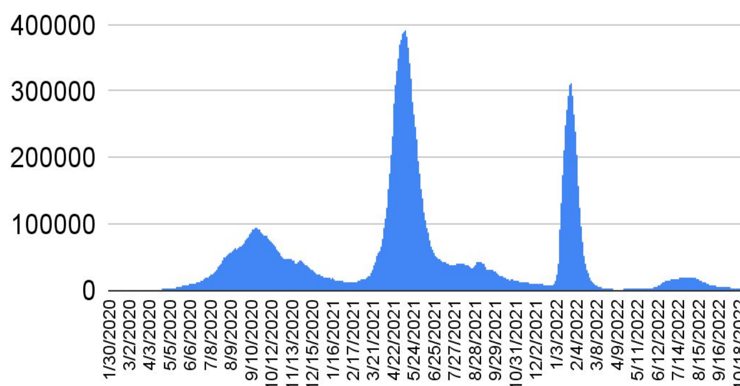
Consensus	2021	2022E	2023E	2024E
GDP Growth	3.7	8.7	7	6.1
CPI%	6.6	5.1	6.7	5.1
10 Year Yield	5.87	7.5	7.4	7.07
Unemployment	8	7.7	6.3	-

Source: Bloomberg and GlobalData

Last Updated: October 29, 2022

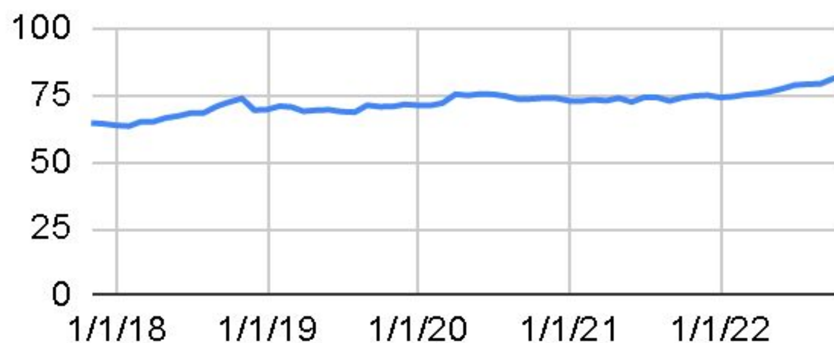
India initially struggled to contain the COVID-19 pandemic. There were massive spikes of cases during 2021 and 2022, totaling 9,000,000 COVID-19 cases during May of 2021 However, in the past months India has managed to vaccinate about 70 percent of their population (see graph below). Since then, COVID cases have remained relatively low and the country has not seen any large spikes of cases since the start of 2022.





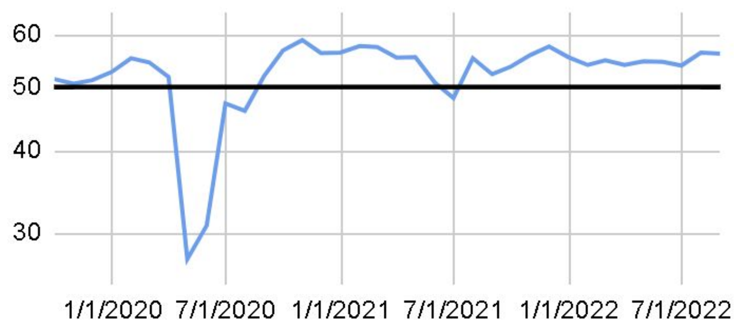
With higher vaccinations rates in India, there has been less fear of face to face contact. As a result, this has led to more business travel for in-person client interactions, as well as an increasing number of tourists which has aided the hospitality sector. India saw a pandemic related low GDP of 3.7 percent in 2021. Following this short period of negative growth, India made a great recovery as the COVID situation improved. 2023 GDP growth is now forecasted to be a healthy 7 percent in 2023.

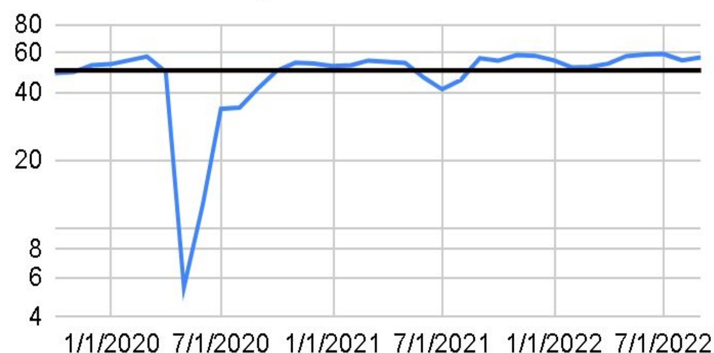
Although India has made significant progress with containing the spread of COVID, inflation still continues to put pressure on the economy. Russia's invasion of Ukraine in February 2022 has caused disruption in their supply chain. In September, inflation spiked to over 7 percent. The Consumer Price Index has also remained high with the 2020 CPI reading at 6.6 percent. A main driver of inflation and CPI are the high import prices in India as the Indian Rupee weakens. India is not participating in the western sanctions against Russia's energy sector, so it is benefiting from lower priced Russian energy. It should be noted that this may result in some potential negative reaction from the U.S. given strong global support for Ukraine.

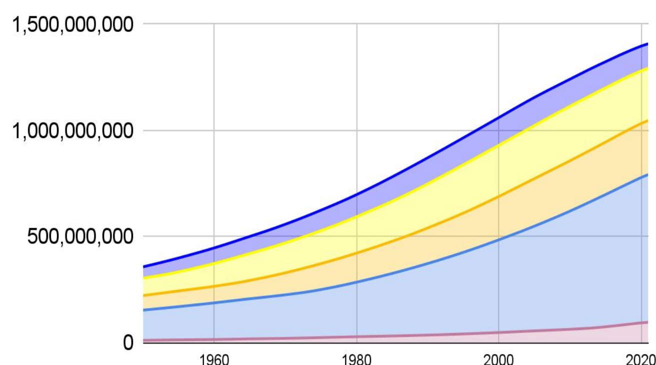


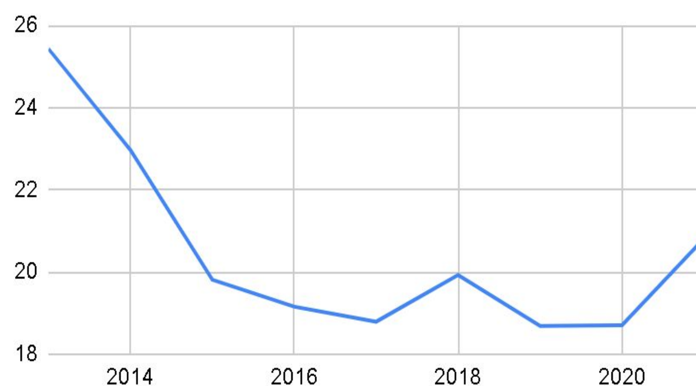
India’s recovery is highlighted in the strong manufacturing PMI numbers. Coming out of the most dramatic period of the COVID-19 pandemic, India has consistently reported readings above the 50 baseline within every month, excluding June. Considering that consumption and investments contribute to 70 percent of economic activity, the data suggests strong growth in services. India also benefits from a healthy demographic profile, with working age population and birth rates at sustainable levels. India has a population over 1.3 billion with the median age being 28 years old, and only 115 million of the population being over 65. This means that the majority of the population is in a working-class age group and can contribute to GDP growth via production and consumption.

With continued reopening of the economy post-pandemic, strong demographics, and potential benefits from a U.S. led shift away from China, India is well positioned for the near future. With the major global economies slowing, India offers the only large economy that has strong growth. While high inflation is a concern, a small allocation to Indian equities should benefit from India being the fastest growing large economy.









Global Economic Summary

Overall, we see the global economy slowing with relatively high inflation and rates compared to recent years. We see the consumer being in a strong position due to demographics, providing support to the economy and likely to keep it out of recession. In this environment, the U.S. continues to be the most attractive investment opportunity with India being another bright point as the world's fastest growing large economy. This environment also implies a cautious approach to fixed income as rates are likely to rise and stay higher longer. In equities, we believe a cautious and more defensive posture is appropriate but staying invested is likely to be more fruitful than cash or bonds. Additionally, the recent declines in equity markets provides an opportunity to enter at more attractive valuations.

Capital Market Outlook

BAM's capital market outlook is informed by economic analysis, the Capital Asset Pricing Model (CAPM), and expected yields from fixed income. To apply CAPM, we define the market as the Russell 3000. We then employed an equity risk premium model developed by Professor Aswath Damodaran (NYU Stern) to arrive at expected market returns. Our inputs into this model are as follows:

- Current level of Index (S&P 500, October 17, 2022): 3673.91
- Index Cash yield (dividends & buybacks): Average yield last 5 years = 4.25%
- Expected earnings growth rate for the next 5 years: Top down consensus
- Current long-term risk-free rate: 10 Year T-bond = 4.00%
- Expected growth rate in the long term after year 5 = 3.25%

Using these assumptions, the model resulted in a 9.21% expected return on U.S. equities. We use CAPM to arrive at future returns for developed and emerging international equities. For domestic fixed income, we use the yield to maturity for the Bloomberg Barclays Aggregate bond index. Our cash yields reflect the yield on 3 month T-bills.

The historical and expected returns for different asset classes are summarized below. We believe the expected return column is more relevant as it is more reflective of current economic conditions.

Asset Class	Index	Expected Return	20 yr Historical Return	20 yr Standard Deviation	Expected Return Models & Assumptions
Domestic Equities	R3000	9.21%	10.33%	17.15%	Damodaran Model & High LT Growth
Developed Markets	M1EA	8.12%	6.24%	19.45%	CAPM
Emerging Markets	M1EF	7.51%	9.15%	29.43%	CAPM
U.S. Fixed Income	AGG	4.82%	3.19%	4.72%	YTM
Cash	T-Bill	4%	1.18%	1.46%	3 Month T-Bill

Asset Allocation

To determine our target asset allocation, we ran an Excel-based portfolio optimization model. The following indices were used in our portfolio: 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), and the Bloomberg U.S. Treasury Bills 1-3 Month Total Return Index (CASH; used as a cash equivalent). Two scenarios were run: one using our current capital market outlook and one using the historical capital market returns. We believe the Expected Returns scenario is more appropriate to reflect the current economic environment. Each scenario was set with the following constraints, in line with the client's allocation preferences: fixed income >=20% and <=40%, equity >=60% and <=80%, cash >=0% and <=20%, and foreign at <=30%. With these constraints, the tables below show the target asset allocation for Maximized Returns, Minimized Standard Deviation (Risk), and Maximize Sharpe Ratio, respectively.

Portfolio Optimizer Results

20-yr Historical

Metrics	Max Ret.	Min. St Dev	Max SR
Return	9.80%	7.39%	8.14%
Standard Deviation	12.17%	9.13%	9.32%
Sharpe Ratio	0.81	0.81	0.87
Allocations % U.S. / DI / EM / AGG / Cash	80/0/0/20/0	52/0/8/20/20	60/0/0/40/0

BAM Expected Returns

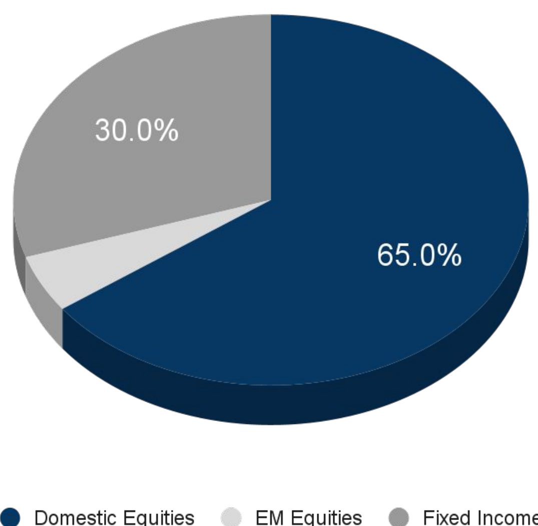
Metrics	Max Ret.	Min. St Dev	Max SR
Return	8.32%	7.18%	7.43%
Standard Deviation	12.17%	9.13%	9.32%
Sharpe Ratio	0.68	0.79	0.8
Allocations % U.S. / DI / EM / AGG / Cash	80/0/0/20/0	52/8/0/20/20	60/0/0/40/0

Using the BAM Expected Returns scenario, the Minimum Standard Deviation scenario is eliminated due to having a significantly lower return than the Max Sharpe Ratio while having similar risk levels to the Max SR scenario. When choosing between the Maximized Returns and the Max Sharp scenarios, BAM considers the role of interest rates on fixed income. BAM expects interest rates to remain high and go above consensus. Therefore, with the higher fixed income allocation in the Max SR scenario and our outlook on the economy, this scenario may carry higher risk. BAM proposes to shift 10 points of the fixed income allocation to equities. We also propose allocating half of this to Emerging Markets to diversify geographically and half to domestic equities.

Within the fixed income allocation, BAM made the decision to allocate 22.5% of its fixed income to short-term Treasury bonds and 7.5% to long-term Treasuries. The long-term bonds are targeted to serve as a hedge against our equities allocation. Should the economy slow enough to a recession, the Fed is likely to cut rates and we are likely to see a “flight to safety” market reaction, both providing a boost to longer duration Treasuries.

Within the Emerging Markets, we recommend avoiding investments in China, South Korea, Brazil, Russia, Japan, and South Africa due to their weak economic outlooks and unstable geopolitical environments. Instead, BAM focused our Emerging Market investment in India. The decision to invest in India builds upon our expectations of its economic stability in uncertain times. India has few COVID concerns and has seen consistent growth this year that should continue into 2023.

BAM’s new target asset allocation is 65 percent in Domestic Equity, 5 percent in Emerging Markets, 30 percent in Fixed Income, and 0 in Cash. Portfolio asset allocations and expected metrics based on our securities recommendations are as follows:



BAM Portfolio

Metrics	Max Ret.
Return	8.3%
Standard Deviation	10.8%
Sharpe Ratio	0.77
Allocations % U.S. / DI / EM / AGG / Cash	65/0/5/30/0

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 8.3% with a standard deviation of 10.8%. Details on how the BAM portfolio metrics are calculated are further explained in the Equity Portfolio Characteristics section.

Performance Goals	BAM Portfolio	CFAOC Benchmark
Expected Return	8.3%	7.9%
Standard Deviation	10.8%	10.8%

Fixed Income Valuation and Selection

	Appropriate (X)	Inappropriate (X)
Cash (Money Markets 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's 30% allocation to fixed income is based on two current realities. First, interest rates are expected to keep rising and second, the economy is experiencing a phase of slower growth. Given this, the team's fixed income approach focuses on four objectives:

1.) Maintain high credit quality in a weakening economy
2.) Protect against rising interest rates by maintaining low duration
3.) Take advantage of relatively attractive yields on short term treasuries versus corporates
4.) Provide a partial hedge against our heavy weighting in equities.

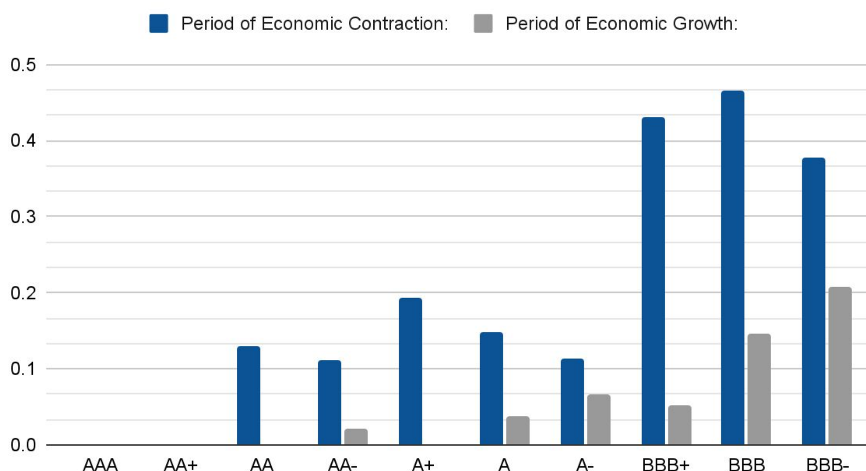
We begin our analysis process by reviewing the various fixed income sub-asset classes and their risk/return relationship as follows::

Fixed Income Portfolio Construction

Type	Bloomberg Function	YTM	Effective Duration	Standard Deviation	Credit Quality
Short-Term Treasury	LT12TRUU	3.81	0.34	0.20%	AAA
Intermediate Treasury	LT08TRUU	4.48	3.7	0.90%	AAA
Long-Term Treasury	LUTLTRUU	4.33	16.06	3.01%	AAA
Short-Term Corporate	I01092US	5.36	0.9	0.41%	A3/BAA1
Long-Term Corporate	LD07TRUU	5.95	4.1	1.26%	A3/BAA1
Corporate Intermediate	LD06TRUU	6.21	12.51	2.70%	A3/BAA1
Corporate Aggregate	LBUSTRU U	5.11	6.07	1.11%	AA1/AA2
High Yield	LF98TRUU	9.58	4.04	2.42%	BA3/B1

Type	Ticker	SEC 30 Day Yield	Standard Deviation (3y)
Preferred Stock	PFF	5.82%	13.87%

Although cash equivalents are the safest option and promise capital preservation, BAM did not allocate any investments to cash at this time due to a lower yield than Short Term Treasuries. BAM is avoiding Corporate, Securitized, High Yield, and Preferred Stock securities as the additional yield relative to Treasuries is insufficient to take the additional default risk. We expect default rates may rise as they have historically (graph below) during weak economic conditions. We were also hesitant to invest in foreign debt in developed and emerging markets as they carry significant credit risk relative to the U.S. and also add currency risk, especially with current strength of the U.S. dollar.



As a result, we allocated 22.5% of our portfolio to U.S. Short Term Treasuries to provide capital preservation and relatively attractive yields. We chose the SPDR Portfolio Short Term Treasury ETF (SPTS) due to its high yield to maturity, minimal duration, zero default risk, and low expense ratio. Secondly, we invested 7.5% of our portfolio in the U.S. Long Term Treasuries as a hedge against our equity side of the portfolio with no credit risk. BAM decided to go with Long Term Treasuries over Intermediate Term Treasuries in order to get a more impactful hedge via the longer duration. We chose SPDR Portfolio Long Term Treasury ETF for its slightly higher yield to maturity and lower expense ratio. The resulting maturity and duration profile is as follows:

	Minimum (years)	Average (years)	Maximum (years)
Maturity	1	6.58	23.32
Duration	1.83	5.39	16.07

TARGET FIXED ASSET SECTOR ALLOCATION

Our full fixed income investment is in U.S. Treasuries and thus not allocated by industry or sector.

Equity Valuation and Selection

Passive vs. Active Management

BAM has adopted an active management approach driven by rigorous domestic and international economic analysis and fundamental research of all individual securities included in our portfolio. However, we do choose to invest in ETFs in four sectors: Communications, Materials, Utilities, and Real Estate. Individually, these sectors make up less than 16% of our equity portfolio. We also invest in ETFs and mutual funds for Fixed Income and International investments. These funds are the most optimized way to balance BAM's limited resources with the goal of diversifying to manage unnecessary firm-specific risk.

Top-Down vs Bottom-up

BAM believes that the markets are efficient in the long-term, however, short-term inefficiencies arise that provide opportunities. Using a Top-Down approach, we will position our portfolio to capitalize on those opportunities to capture additional value for our clients while balancing risk. Our extensive research and active analytical processes were key to identifying these existing inefficiencies. Based on academic research and our own findings, we have decided to employ a value strategy while investing in growing businesses. We refer to this as our "Value and Reasonable Growth (VARG) strategy (see Fundamental Factors for a detailed breakdown of the VARG strategy).

Fundamental vs Quantitative vs Technical

Fundamental analysis is at the forefront of our strategy. We rely on in-depth research to justify all investment decisions in individual equities. We do not implement any quantitative or technical strategies as these are inconsistent with our investment philosophy but we do implement a security screening tool with the following metrics:

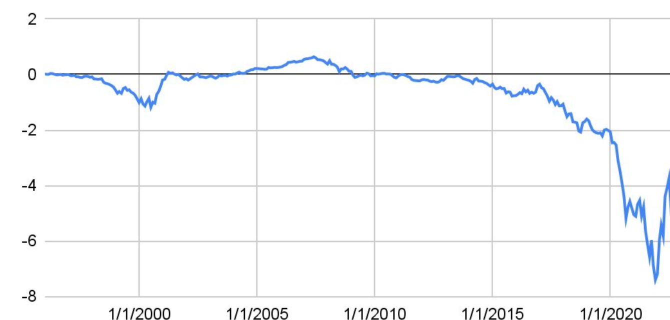
- Country of Domicile U.S.
- Market Cap ≥ $1 Billion
- GICs sector
- Price-to-Book (lower is better)
- Price-to-Free Cash Flow (Price-to-Book for Financials) (lower is better)
- Price/Earnings-to-Growth (PEG) (lower is better)
- Gross Profit to Total Assets (Relative to Sector)
- ROIC (higher is better)
- Revenue Growth (5-year historical) (higher is better)
- Revenue Growth (2022 vs 2023)
- EPS Growth (5-year historical) (high is better)
- EPS Growth (2022-2023)
- EBIT/Interest (higher is better)
    - ICR (interest coverage ratio) (higher is better)

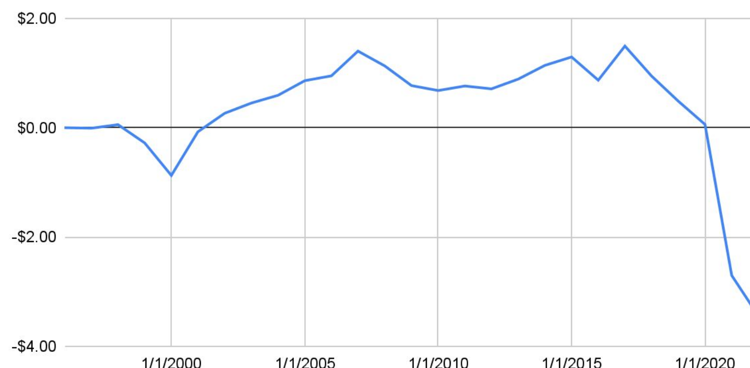
Value vs. Growth

As fundamental investors BAM has had a bias towards Value since our founding. This bias is based on our own deep analysis on Value versus Growth strategies and academic research. To determine our preference between the value or growth-oriented strategy, BAM analyzed the value and growth total returns of both large cap and small cap equities using the Russell 1000 and Russell 2000 indices.

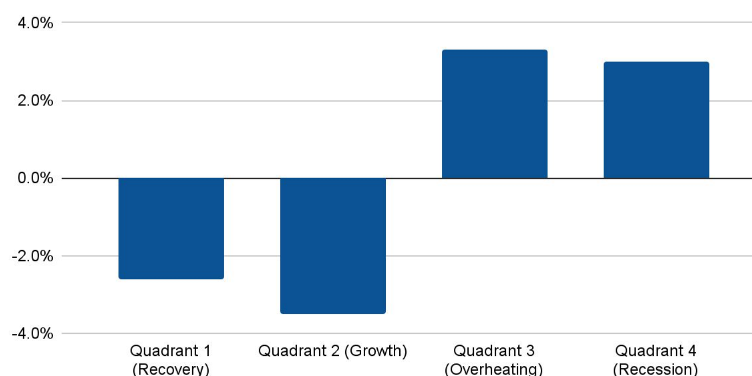
The historical data shows that Value Large Caps did outperform Growth Large Caps until 2017, when Growth performance accelerated (see above) .We see the same trend in small caps but more pronounced (see above). Our view is that this reversal to Growth was due to two major factors: the extraordinarily low interest rates (reaching below 1% by end of 2019) and strong market psychology. The low interest rates elevated the Growth stocks valuations and helped drive psychology, partly due to the pandemic-induced increase in virtual activities that favored tech stocks.

As interest rates have started to rise, these trends have reversed dramatically in 2021 and 2022. We see this in the charts above and more clearly by viewing the Value Premium (Value returns minus Growth returns) graphs below for the S&P 500 and the broader Russell 3000 indices. As we expect rates to rise and stay relatively high, BAM expects Value to continue its outperformance into 2023.





Value investing has strong academic support as well. More recently, "The Other Side of Value" by Robert Novy-Marx indicates that value is best measured by gross profits-to-assets. Their view is that gross profit is the cleanest measure of profitability and avoids the controversy of future investments in expenses such as R&D which are treated as costs rather than as investments. Novy-Marx explains that this valuation metric has better predictive power than book-to-market and explains most earnings-related anomalies. In a paper written by Obenshain as a follow-up to Novy-Marx, Value is further segregated into Value and Quality. Value is defined as Gross Profit over Enterprise Value and Quality is defined as Gross Profit over Total Assets. Obenshain showed that Value and Quality delivered different returns during different stages of the economic cycle. As our economic outlook is one of post-peak low growth, we are in the late stages of the cycle. Under these stages, Obenshain's work shows Quality to outperform Value. As a result we are proposing to shift our strategy to the Quality side of value.



In a 2021 paper titled "Value versus Glamor Stocks: The Return of Irrational Exuberance?", Bellone and Carvalho of BNP Paribas take a very in-depth analysis of Value investing. Their work also shows that Value has historically outperformed but a period of underperformance during 2018-2020 did occur. They speculate that this was amplified during COVID -19 as investors herded more to growth. Their opinion hints that this may be now be reversing and Value will again outperform.

Another interesting aspect of Bellone and Carvalho's study is the sector-neutral aspect of their analysis and its contribution to historical Value outperformance. They 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 VARG approach is applied on a sector-by-sector basis and each holding within a sector is equal-weighted. This should aid in taking some advantage of the sector-neutral methodology.

We see high inflation, higher interest rates, and a slow growth economy. In this environment, long-duration growth stocks should underperform as their valuations are discounted at a higher rate and their growth is lowered. We believe the markets are realizing this and the recent rise in the Value Premium has more room to run. As such, BAM continues to favor a Value approach. Within Value, we prioritize Quality over pure Value. Further, while we are value investors, we do not favor just "cheap" stocks (value traps). Rather, we search for growth within the value universe, we want good value but only if the business is growing. We refer to this approach as **Value And Reasonable Growth or VARG** strategy.

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

We do not use a market cap as a decision tool, beyond the CFAOC requirements.

International vs. U.S.

The figures below compare the 20-year historical returns and volatility (standard deviation) of domestic versus international equities:

	Average Return	Standard Deviation
Russell 3000	10.33%	17.15%
MSCI Developed Markets	6.24%	19.45%
MSCI Emerging Markets	9.15%	29.43%

We see that international stocks have underperformed domestic equities, have higher volatility, and generally have a slower growth outlook with more geopolitical risk. As a result, we have elected to focus on U.S. equities, with the exception of India. India is the fastest growing major international economy with more growth potential in 2023. We decided to invest 5% of our portfolio in India and 65% 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. The recent development of 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 & Buy

BAM does not believe in timing the market. Rather, given the current direction of the economy, we believe that various sectors will perform differently at various economic cycles. Our economic analysis concluded that the U.S. economy is currently in the late-cycle phase nearing a recessionary phase. Our team reviewed each of the 11 sectors and how they will perform relative to the economic cycle. We utilized this research to inform our allocations to each sector. In the table below, we have outlined the true sector weights of the Russell 3000, our team's recommended sector allocations, and our reasoning for the them compared to the Russell 3000.

Sector Allocations	R3000 Weight	BAM	Reasoning
Information Technology	25.3%	20.5%	Increasing rates causing a lower valuation of tech/growth companies. Additionally, tech tends to perform poorly in the late-cycle and recession phase.
Healthcare	14.4%	19.4%	Healthcare is a more defensive play as well as return of non-urgent procedures post-pandemic.
Consumer Discretionary	11.7%	8.7%	Consumer discretionary performs poorly heading into a possible recession.
Financials	11.8%	11.8%	We remain neutral in the financial sector because although rising interest rates mean lower demand for loans, banks' interest income should rise.
Communication	7.4%	5.2%	Slower economy will lead to lower digital advertising.
Industrials	9%	9%	We are neutral.
Consumer Staples	6.3%	9.3%	The increase in our allocation is due to consumer staples performing well during the late-cycle and recession phase.
Real Estate	3.4%	3.4%	We are neutral.
Utilities	3.2%	3.2%	We are neutral.
Materials	2.8%	3.8%	Should benefit from rising prices.
Energy	4.7%	5.7%	Should benefit from continued geopolitical uncertainty.
Total	100%	100%	

Security Selection and Valuation

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

Security Valuation Methodology

The valuation method begins with selecting screening criteria our team uses to thoroughly filter securities that fit our investment philosophy. 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. Reviewing these reports helps BAM understand each company's competitive position in its respective market. Further, to evaluate a company's intrinsic value, we use Discounted Cash Flow (DCF) and Dividend Growth (DGM) valuation models.

Market Capitalization and Liquidity

Per client requirements, we screen for companies with market caps greater than $1B. We also typically look for an average daily trading volume of at least 50,000 shares as a standardized measure of liquidity.

Fundamental Factors

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

- Country of Domicile U.S.
- Market Cap ≥ $1 Billion
- GICs sector
- Price-to-Book (lower is better)
- Price-to-Free Cash Flow (Price-to-Book for Financials) (lower is better)
- Price/Earnings-to-Growth (PEG) (lower is better)
- Gross Profit to Total Assets (Relative to Sector, higher is better)
- ROIC (higher is better)
- Revenue Growth (5-year historical) (higher is better)
- Revenue Growth (2022 vs 2023) (higher is better)
- EPS Growth (5-year historical) (high is better)
- EPS Growth (2022-2023) (higher is better)
- EBIT/Interest (higher is better)
    - ICR (interest coverage ratio) (higher is better)

The components listed above were specifically created and utilized for BAM's VARG strategy (See Value v. Growth). Price-to-book (P/B) is used to differentiate value and growth stocks in most indexes

and several academic research papers. As such, it is important to stay consistent with this research and use P/B as a differentiator. While P/B is supportive of BAM's data analysis, the Price-to-Free Cash Flow (P/FCF) ratio is another component we decided to incorporate into our strategy. Over time, P/B is not as critical toward the economy as it was in the past and we believe adding P/FCF as an additional value metric would be more current. The PEG ratio is also used to balance value and growth while determining a reasonable price (VARG). Given the current economic outlook, BAM is shifting the Gross Profit metric from Gross Profit to Enterprise Value (a valuation metric) to Gross Profit to Total Assets (a profitability metric). As highlighted in the Research section, Obenshain differentiated value into two subcategories: Quality and Value with the conclusion that Quality (GP/Assets) outperforms Value (GP/EV) during the second half of an economic cycle. Based on this research, we have added GP to TA as a screening criterion since we feel that the economy is in the late stage of the economic cycle. Return on Invested Capital is a new metric we are including for 2023 to measure companies' efficient use of capital. To incorporate the Growth component of VARG, we also wanted to screen for companies that have a track record of growth in the past and that are expected to continue growing in the future (Revenue and EPS Growth). Finally, we utilize EBIT/Interest ratio (interest coverage ratio) to gain confidence in a company's ability to service its debt in a slowing economy with rising interest rates.

Deviation Discipline

Based on the assumption that we will manage the portfolio for one year, our security selection discipline will only alter if we see a significant change in economic conditions. Should this happen, we will continue to follow a Value and Reasonable Growth strategy and shift our asset and sector allocations.

The proposed portfolio and benchmarks characteristics are shown below.

Equity Portions		
BAM Portfolio	vs	Russell and ACWI
1.06	Beta	1.00
58 billion	Weighted Average Market Cap	290 billion
15.6	FWD P/E	14.8
4.1	P/B	2.8
6.6%	EPS Growth 1YR (23 vs 22)	3.8%
1.7%	Dividend Yield	2.3%

	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	

Equity Diversification Guidelines

Our asset allocation is diversified through 65% in Domestic Equities, 5% in Emerging Markets, and 30% in fixed income. Further diversification is achieved by investing in all eleven sectors of domestic equities. Our weights were determined based on the Russell 3000 index and then adjusted to our own expectations of how each sector will perform given our economic outlook. This decision was also influenced by research done by Fidelity (The Business Cycle Approach to Equity Sector Investing). Sectors with less than approximately 5% allocation are further diversified through investing in broad sector ETFs. Where we use individual stocks, we equal-weight within the sector, also for diversification purposes.

We have also decided to modestly diversify our portfolio geographically by adding 5% in Emerging Markets, specifically India. We believe India has a strong economic outlook. BAM is investing in an actively managed mutual fund for our exposure to India, as we believe security selection and local expertise is critical in a foreign market where BAM has limited research depth.

AVERAGE PERCENT INVESTED

Our sector allocation and individual security weights are listed in the table below. Each stock is equally weighted within each sector. On average there is a 2.4% allocation per equity. No more than 5% of our equity allocation was invested in any single equity, as defined by compliance measures.

Domestic Portfolio	BAM	Number of Stocks	Weight per Individual Security
Information Technology	20.5%	8	2.6%
Healthcare	19.4%	8	2.4%
Financials	11.8%	6	2.0%
Consumer Staples	9.3%	4	2.3%
Industrials	9%	4	2.3%
Consumer Discretionary	8.7%	4	2.2%
Energy	5.7%	4	1.4%
Communications	5.2%	ETF	5.2%
Materials	3.8%	ETF	3.8%
Real Estate	3.4%	ETF	3.4%
Utilities	3.2%	ETF	3.2%
Total	100.00%	42	2.4%

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

NUMBER OF STOCKS AND FUNDS IN THE PORTFOLIO

We will diversify our domestic equity portfolio by investing in 38 different equities domestically, and 4 broad sector ETFs. Our international market portfolio is invested into one India ETF for emerging market exposure.

	# of Funds	# of Equities
U.S.	**4**	**38**
India	**1**	**0**

Equity Sell Discipline and 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 Blended Benchmark
3. Analyzing Portfolio Excess Return Attribution
4. Monitoring Portfolio Metrics such as Standard Deviation, Sharpe ratio, and Information Ratio
5. Equal weighting within each sector to minimize idiosyncratic risk

According to the client 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, the security must be sold down to at least 5% of the equity portion.

If we observe negative changes in the fundamentals of a company or industry over time, BAM will conduct a top-down security review and analyze market drivers, relative sector performance, and individual company headwinds. If this analysis indicates,, the stock will be sold and replaced with another security from the same sector after undergoing our security selection process.

If a stock reaches its intrinsic value calculated through our DCF or DGM models, we will conduct a security review and update our analysis to determine whether or not to continue to hold the security. If there is a decision to sell the security, it will be replaced with another security from the same sector.

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

It is not expected that the BAM team will deviate from the sell discipline described above.

Mutual Fund and ETF Selection

Domestic Equity

It was decided that sectors that accounted for less than approximately 5% of domestic equity would be represented by passive ETFs to minimize idiosyncratic risk. For domestic equity ETFs, BAM first filtered out sector ETFs that used leverage and looked for ETFs with over $1 billion AUM. Then BAM prioritized ETFs with a broader number of holdings that had relatively higher Sharpe ratios and lower expense ratios, while maintaining strong metrics in the following areas: tracking error, net assets, YTD return, and 30-day SEC yield. Additionally, by looking at market-cap exposure, industry exposure, and the concentration of the top 10 holdings in the ETF, BAM made the conscious decision to pick ETFs that best represented their broad sector. BAM's final selection achieves a balance between liquidity, cost efficiency, and diversification. As a result, BAM allocated 15.6% of the domestic equity allocation in ETFs in four sectors (Real Estate, Utilities, Materials, and Communications).

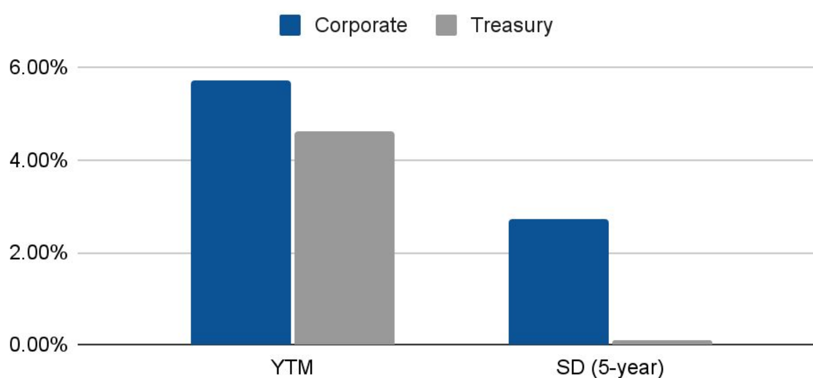
International Equity

BAM's decision to focus its emerging market allocation on India is designed to benefit from the country's solid economic growth and also serve as a geographic diversification tool. BAM decided to consider the number of holdings, total AUM, YTD return, expense ratio, and Sharpe ratio in our evaluation of EM funds. We chose the actively managed MINDX Matthew India Fund for our exposure to the Indian markets. The MINDX fund outperforms other alternative India mutual funds and ETFs, and its sector allocations are more closely aligned to the sectors we believe deserve priority within the India markets. Additionally, we believe the expense ratio of 1.1% is justified as it allows us to capitalize on investment opportunities in India by utilizing an active management approach. The fund managers are experienced in this market and can capitalize on any investment opportunities they encounter.

Fixed Income

For BAM's fixed income allocation, our investments would be limited to funds due to CFAOC guidelines. BAM views the selection process through the framework of our four objectives in fixed income: maintain high credit quality in a weakening economy, protect against rising interest rates by maintaining low duration, take advantage of relatively attractive yields on short term treasuries versus corporates, and provide partial hedge against our heavy weighting in equities.

For our first objective, we want to avoid credit risk and thus decided to limit our investments to U.S. Treasury securities. For our second objective, we allocate most of our fixed income into short-term maturities. For our third objective, we analyzed returns and risk (standard deviation SD) profile of Treasuries (SPTS) versus Corporates (SPSB):



While Corporates do provide approximately 110 basis points higher return, this comes with higher risk. We are also concerned about credit downgrades in Corporates and combined with BAM's conservative inclination, we decided the extra yield was insufficient and chose Treasuries. For our fourth objective, we allocated our remaining fixed income to long term Treasuries.

We analyze ETFs based on different fixed income metrics; effective duration, effective maturity, credit quality, and yield-to-maturity. We chose the 1-3 year maturity SPDR Portfolio Short Term Treasury ETF (SPTS) due to its high yield to maturity, minimal duration, zero default risk, and low expense ratio. To meet our last objective BAM analyzed five Long Term Treasury ETFs. Of the five, BAM eliminated one fund due to a shorter duration and a second fund because of a long average effective maturity. From the final three, we chose SPDR Portfolio Long Term Treasury ETF for its slightly higher yield to maturity, as the difference in duration, expense ratio, and effective maturity were negligible. The chosen ETFs have the following characteristics:

	SPDR Portfolio Short Term Treasury	SPDR Portfolio Long Term Treasury
Assets Under Management	3,643,620,000	4,740,490,000
Duration	1.83	16.07
YTM	4.62%	4.33%
Expense Ratio	0.06%	0.06%
Credit Quality	AAA	AAA
5 Year Return (Annualized)	0.39%	-1.65%

Sell Discipline- Mutual Funds and ETFs

We plan to track the performance of selected ETFs and mutual fund versus their stated benchmarks and will sell any fund that has underperformed its benchmark for a duration of one month by 50 basis points or greater. This allows us to limit our losses on a poor investment while still being tolerant enough for our long-term horizon. BAM will deviate from these criteria in cases with extreme and unique circumstances. If additional research can reasonably conclude that the ETF in question will return to our accepted range within a month, then the team would allow for a deviation from the discipline.

Portfolio Construction

We begin our portfolio construction process by first analyzing the historical risk and return of the following asset classes:

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

We then developed our equity market outlook based on our deep economic analysis. We use this to inform our use of Dr. Damodaran's Equity Risk Premium model and CAPM.. For equities, we use CAPM to arrive at our expected returns. For the Fixed Income portion, we used the yield to maturity of our selected ETFs as our expected return. For the cash equivalent, we used the current rate for the three-month T-Bill. We then utilize an Excel model to optimize for Maximum Returns, Minimum Risk, and Maximum Sharpe Ratio. BAM ran two scenarios, one based on BAM's capital market expected returns and one based on twenty-year historical returns. The results of these scenarios are shown above under Asset Allocation. Based on our investment philosophy, we adjusted our portfolio to achieve a blend between Maximized Return and Maximized Sharpe Ratio. The reason for doing a blend rather than only Maximum Sharpe Ratio is because the model uses historical fixed income risk from an overall declining interest rate environment. Currently, we are experiencing a rising interest rate environment which the model does not account for. We believe that the risk for fixed income is higher now compared to historical averages. Because of this, we decided to slightly deviate from the model and modified our target allocations to greater emphasis on equities. This aligns with our investment philosophy of balancing risk and return.

Our target asset allocation is 65 percent domestic equity, 5 percent international equity (5 percent in India), and 30 percent fixed income. Each of these asset classes is discussed below.

Domestic Equities

The domestic equity portion is strategically allocated among eleven sectors. Each sector's overweighting and underweighting is based on future outlook (see Market Timing vs. Sector Rotation vs. Long-term Hold & Buy). It was decided that sectors that represented less than approximately 5% of domestic equity would be represented by ETFs. These sectors were Real Estate, Utilities, Materials, and Communications. Together, these ETFs make up approximately 15.6% of the domestic equity allocation. The remaining Technology, Consumer Discretionary, Consumer Staples, Industrials, Energy, Finance, and Health Care sector allocations were then to be divided into individual securities.

The Fundamental screening criteria (See Fundamental Factors) was used to find potentially attractive securities in sectors where we did not choose ETFs. A detailed analysis of the screened securities was done using BAM's analysis framework called BAM 13. In addition to this, we perform individual security reviews which include DCF and DGM models to make our final selections. Allocations to individual securities were based on equal weighting within each sector while diversifying across industries. Our final domestic equity portfolio consists of four sector ETFs and thirty-eight individual stocks.

International Markets

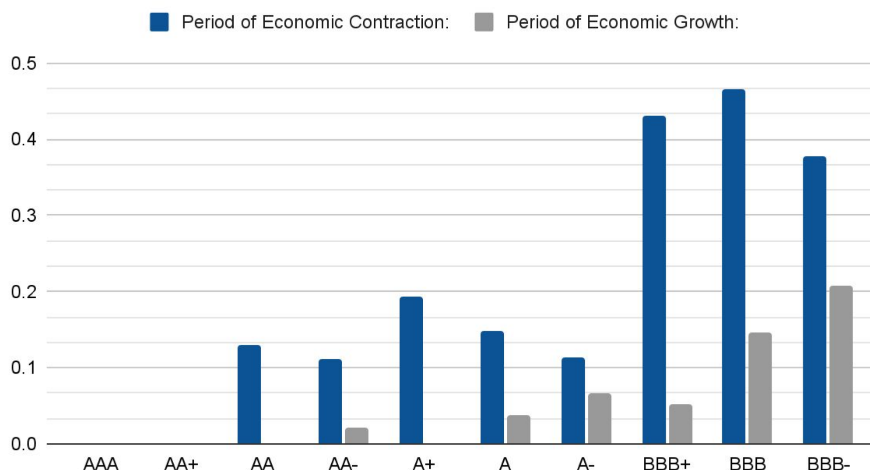
To minimize risk and capture the overall market performance, BAM decided to invest in emerging markets through ETFs. After analyzing which countries offered the highest potential for growth and future performance based on our economic analysis, we decided that India would offer the greatest investment opportunity. We chose the actively managed MINDX Matthew India Fund for our exposure to the Indian markets due to experienced fund managers and good historical track record.

Fixed Income

BAM selected our fixed income strategy by first analyzing the following sub-asset classes:

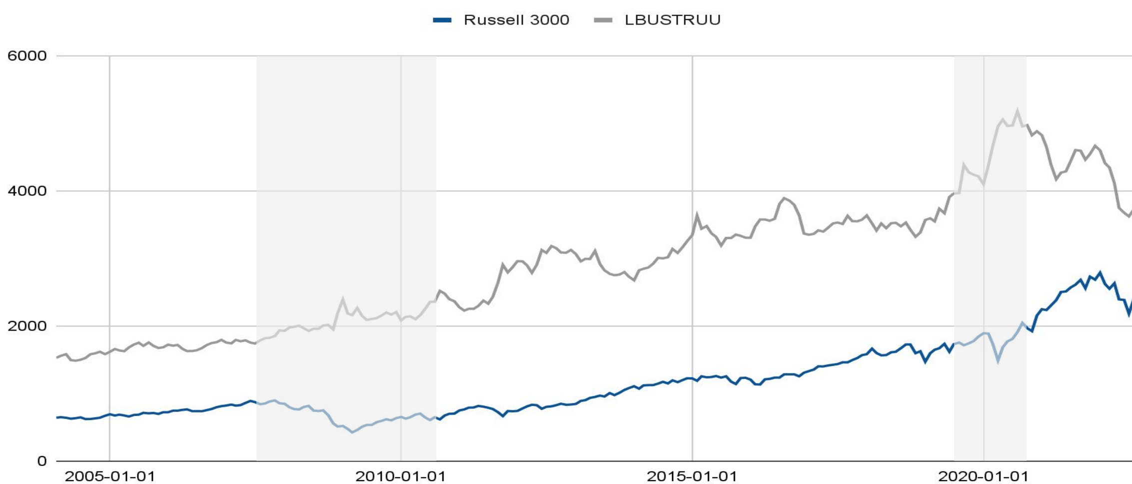
- Treasury Bonds (Short / Intermediate / Long)
- U.S. Aggregate Bond Indices
- Corporate Bonds (Short / Intermediate / Long)
- High Yield Bonds
- Preferred Stock

To assess credit risk at times of economic weakness, BAM analyzed the historic default rate of corporate bonds during periods of low economic growth. As we can see from the Historic Investment Grade Corporate Default Rate graph, lower credit quality tends to suffer from significantly higher defaults. For this reason, we chose to only invest in U.S. Treasuries to eliminate default risk.



To protect against our projection of higher-than-consensus interest rates, BAM chose to allocate a significant portion of fixed income to Short Term Treasuries. SPDR Portfolio Short Term Treasury ETF offers a healthy yield with no default risk. Given a short duration of 1.86, increase in interest rates will have minimal impact on our portfolio.

Furthermore, BAM recognizes that if The U.S. Federal Reserve pushes the economy into a recession as they try to curtail inflation, the equity portion of our portfolio may get negatively impacted. Subsequently, we have allocated 7.5% of our total portfolio to Long-Term Treasuries to hedge against the potential risk of an economic downturn. As shown in the Russell 3000 vs Long-Term Treasury graph, during the 2008 financial crisis and the 2020 COVID-19 crisis, as stocks suffered losses, Long Term Treasuries had substantial gains.



Pricing and Stop-loss Monitoring

Our team will keep track of the CFAOC portfolio positions in real time on a shared Excel spreadsheet on Google Drive and frequently monitor the security pricing. The performance and results will be analyzed at regular BAM meetings, weekly during the academic calendar, and every other week during non-academic sessions. Each meeting will be a combination of in-person and virtual meetings throughout the year. Stop-loss levels will also be monitored weekly and any security that hits or comes close to the 30% stop loss limit will be identified during these meetings and a process to find adequate replacements will begin immediately. BAM will also track the top 5 under and over performers to decide when to conduct a security review. We will also review securities that have reached 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 Blended Benchmark
3. Analyzing Portfolio Excess Return Attribution
4. Monitoring Portfolio Metrics such as Standard Deviation, Sharpe ratio, and Information Ratio

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 11 sectors, additionally we equal weight within each sector to further reduce risk in individual securities. Finally, we monitor each securities individual performance on a weekly basis, including any news releases, management commentary, earnings releases, analyst reports, and other market changes. We strongly believe this approach allows us to minimize risk in individual securities.

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 short term treasury bonds giving a safe high yield, we find it unnecessary to hold cash.

Information Sources and Research

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BAM's major source of information and data is the Bloomberg Terminal. Additionally, we use multiple sources such as 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

The BAM team 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 this research "library" is the following paper which did influence our decisions.

- "Value versus Glamor Stocks: The Return of Irrational Exuberance?" by Benoit Bellone and Raul Leote de Carvalho. August 27, 2021.

Bellone and Carvalho of BNP Paribas have recently published a paper that takes a very in-depth analysis of Value investing. Their work shows that Value has historically outperformed but a period of underperformance during 2018-2020 did occur. The effective conclusion is that the major factor driving this was an expansion in the valuation spread between Value and growth stocks. Investors were more enamored of growth stocks during this period and were willing to assign ever increasing valuations to these stocks. There is speculation that this was amplified during COVID-19 as investors herded more to growth. BAM's view is that this expansion was also significantly aided by a substantial drop in interest rates from mid-2018 to late 2020 to near zero. This valuation spread has started to reverse since late 2020 as the economy recovered and investors became less growth obsessed. Their opinion hints that this may be the beginning of a recovery in the Value strategy. We agree with this as the economy normalizes post-COVID and most importantly, we see a substantial rise in current and future interest rates.

Another interesting aspect of Bellone and Carvalho's study is the sector-neutral aspect of their analysis and its contribution to historical Value outperformance. They 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 VARG approach is applied on a sector-by-sector basis and each holding within a sector is equal-weighted. This should aid in taking some advantage of the sector-neutral methodology.

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

- "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

“How Does Quality Work?”, authored by Obenshain, is a follow-up to Novy-Marx’s research paper, “The Other Side of Value: The Gross Profitability Premium”. Obenshain demonstrates that value does outperform growth and that different types of value perform differently at various points in the economic cycle. Obenshain separates value into two components: “Quality” and “Value.” The author defines Value as Gross Profit over Enterprise Value, and Quality as Gross Profit over Total Assets. BAM utilized Obenshain’s findings to conclude that Quality outperforms Value during recessionary periods.

Israel, Laursen, and Richardson address concerns related to value investing in the modern day where value can be more difficult to properly define, and prove that Value outperforms Growth equal weight portfolios outperform valuation weighted portfolios. As well as defends valuation methods such as price to book and price to earnings as useful valuation methods when coinciding with other metrics of value. BAM utilizes this paper as confirmation of our equal-weights within the actively managed sectors and to support our BAM Screener, specifically, the Price to Book and the Price to Earnings criteria.

Novy-Marx argues that value does indeed outperform growth and thus, forms a foundational basis for BAM’s Value and Reasonable Growth (VARG) strategy. The Fidelity research paper illustrates the performance of various equity sectors relative to different stages of the economic cycle. This paper serves as a basis to drive BAM’s decision on equity allocation amongst the eleven sectors.

BAM used academic research such as “The Cross-Section of Expected Stock Returns” by Fama/French to better understand the historical outperformance of value stocks.

BAM not only obtains most of the data from the Bloomberg terminal but also uses specific Bloomberg functions for economic analysis, equity screening, and equity research . This is supplemented with data, industry research, and commentary from the Financial Times, the International Monetary Fund, the World Bank, the Federal Reserve, the EU Commission, the Wall Street Journal, Value Line, CNBC, IBIS World, and Fidelity.

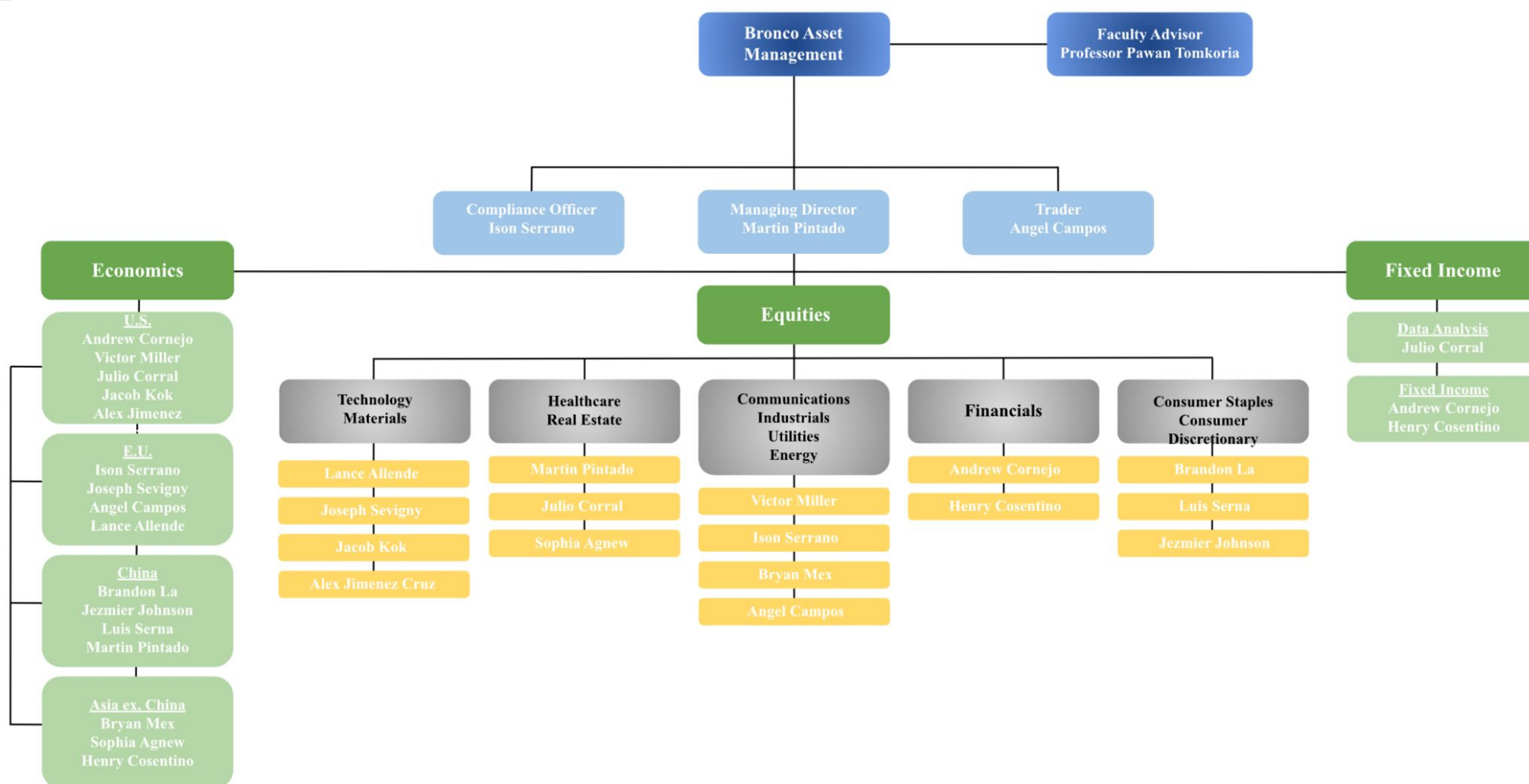
Unique Approaches to Information

To further enhance our qualitative and fundamental equity analysis, our team has adopted the BAM 13 analytical framework to establish a consistent security review for all companies resulting from our screener. Broadly, the BAM 13 framework assesses historical and future growth, operational efficiency, and company governance. Integrating the BAM 13 framework into our analysis allows us to select companies that are growing, managed efficiently, are run for shareholder benefit, and offer superior performance relative to peers. We use the 12 criteria listed below. Criteria 1-3 focuses on companies that are growing and leverage their top line growth to increase their bottom line. Criteria 4-5 targets companies that reside in growth industries and targets companies that invest in future growth. Criteria 6-9 looks at company stability, historical efficiency, and stable to conservative debt management. We have included criteria 10 because of the excessive inventory that certain companies might have in recent quarters due to the oversupply of inventory after the easing of supply chain issues caused by COVID-19 and the slow down of consumer spending. Criteria 12 seeks to identify companies with good value while 13 identifies companies that are well managed for its owners.

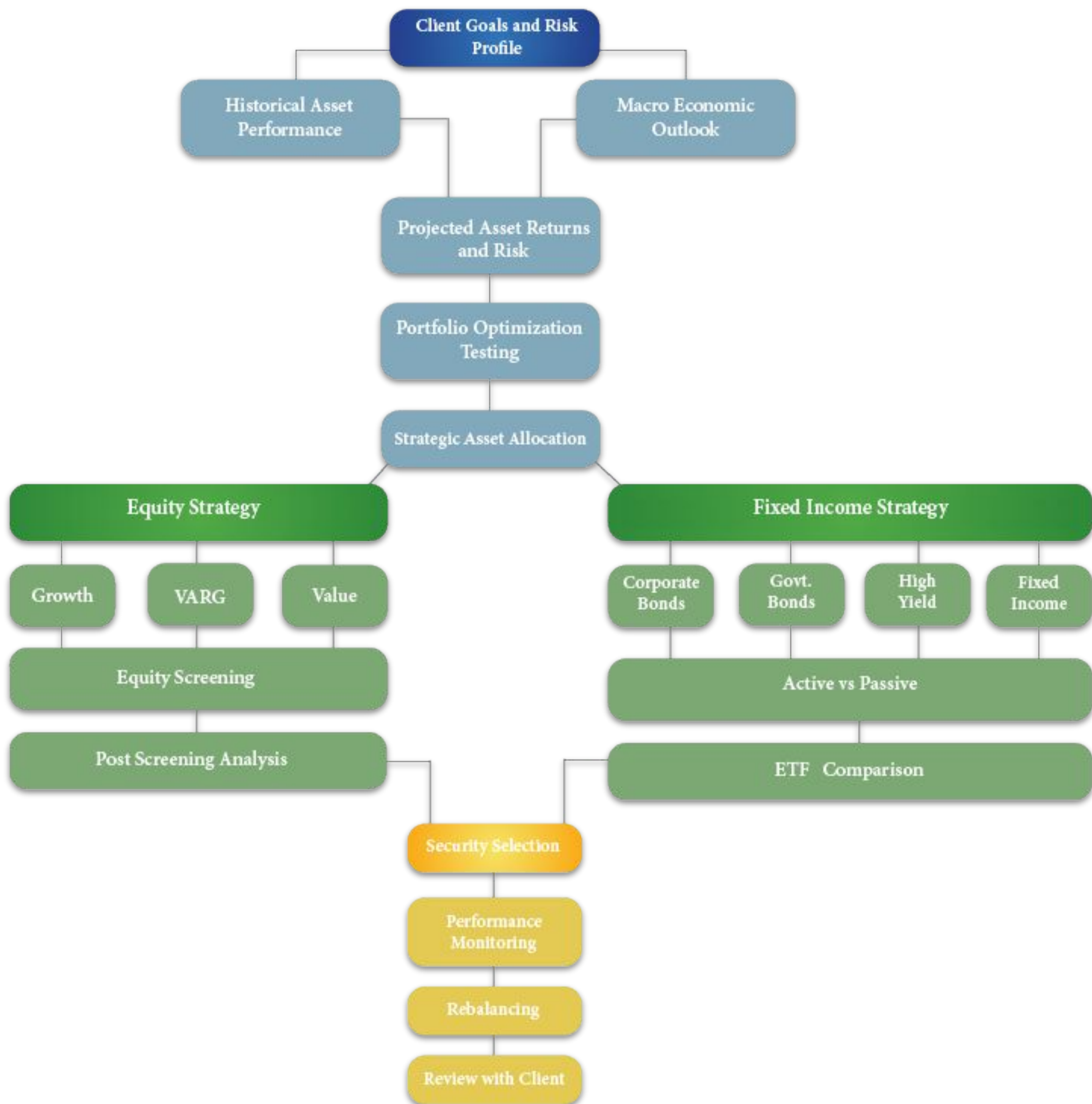
BAM 13	
1.	**Future revenue growth 2022-2024 CAGR**
2.	**Future EPS growth 2022-2024 CAGR**
3.	**Has EPS growth exceeded Revenue growth 2022-2024? CAGR**
4.	**Industry Growth exceeds GDP Growth 2024 vs 2022**
5.	**Is R&D as a percent of sales flat or rising? 2024 vs 2022**
6.	**Is the current year and next year forecast EPS trend flat or up over the last 90 days?**
7.	**Is operating income margin improving in 2018, 2019, and 2021?**
8.	**Is Working Capital Turnover Ratio improving in 2018, 2019, and 2021?**
9.	**Is Debt/Equity Ratio flat or declining in 2018, 2019, and 2021?**
10.	**Is Days Inventory on Hand declining or stable (trend Q4 2019 to Q3 2022)?**
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 I: CPP BAM Organization Chart



Appendix II: Investment Process Flowchart



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Appendix III: CPP BAM Portfolio

Asset Class	Sector	Ticker	Name	Portfolio Weight
Domestic Equity	Information Technology	ACIW	ACI Worldwide Inc.	1.66%
		AKAM	Akamai Technologies Inc.	1.66%
		AMAT	Applied Materials Inc.	1.66%
		DOX	Amdocs Limited	1.66%
		ENTG	Entegris Inc.	1.66%
		PRGS	Progress Software Corp.	1.66%
		SWKS	Skyworks Solutions Inc.	1.66%
		TEL	TE Connectivity Ltd	1.66%
	Healthcare	AMED	Amedisys Inc.	1.58%
		CVS	CVS Health Corp.	1.58%
		EW	Edwards Lifesciences Corp.	1.58%
		IART	Integra Lifesciences Holdings Corp.	1.58%
		JNJ	Johnson & Johnson	1.58%
		REGN	Regeneron Pharmaceuticals Inc.	1.58%
		UNH	United Healthgroup Inc.	1.58%
		ZTS	Zoetis Inc.	1.58%
	Financials	AIG	American International Group Inc.	1.28%
		BAC	Bank of America Corp.	1.28%
		STT	State Street Corp.	1.28%
		TFC	Truist Financial Corp.	1.28%
		UNM	Unum Group	1.28%
		WBS	Webster Financial Corporation	1.28%
	Consumer Staples	BF.B	Brown-Forman Corporation Class B	1.51%
		CHD	Church & Dwight Co., Inc	1.51%
		CPB	Campbell Soup Company	1.51%
		SMPL	Simple Good Foods Co.	1.51%
	Industrials	J	Jacobs Solution Inc.	1.47%
		MYGR	MYR Group Inc	1.47%
		SNA	Snap-on Incorporated	1.47%
		TKR	Timken Co	1.47%
	Consumer Discretionary	MBUU	Malibu Boats Inc.	1.42%
		TJX	TJX Companies Inc	1.42%
		TPX	Tempur Sealy International Inc.	1.42%
		YETI	Yeti Holdings Inc	1.42%
	Energy	CVX	Chevron Corporation	0.93%
		EPD	Enterprise Products Partners LP	0.93%
		MPC	Marathon Petroleum Corp.	0.93%
		XOM	Exxon Mobile Corp.	0.93%

Appendix III: CPP BAM Portfolio

Asset Class	Sector	Ticker	Name	Portfolio Weight
Domestic Equity	Communication	VOX	Vanguard Communication Services Index Fund ETF	3.50%
	Materials	VAW	Vanguard Materials Index Fund ETF	2.40%
	Real Estate	REZ	iShares Residential and Multisector Real Estate ETF	2.20%
	Utilities	VPU	Vanguard Utilities Index Fund ETF	2.00%
			Total Domestic Equity Allocation	65.00%

Asset Class		Ticker	Name	Portfolio Weight
Emerging Markets Equity	India	MINDX	Matthews India Fund	5%
Asset Class		Ticker	Name	Portfolio Weight
Fixed Income	Short-Term Treasury	SPTS	SPDR Portfolio Short Term Treasury ETF	22.5%
	Long-Term Treasury	SPTL	SPDR Portfolio Long Term Treasury ETF	7.5%
			Total Fixed-income Allocation	30%
Total				

Appendix IV: Sample Analyst Report

Bronco Asset Management | Security Coverage
Analyst: Martin Pintado | As of 11/09/2022

UnitedHealth Group℠

Recommendation: BUY

GICS Sector: Healthcare
Industry: Healthcare Providers & Services

Market Cap	**$ 502,838.64B**
Enterprise Value	**$ 517,253.60**
Current Price	**$ 540.66**
Target Price	**$ 604.09**
Pot. Up/Downside	**11.73%**
52W High/Low	**$ 558.10 / 436.00**
Street B/H/S	**85/11/4**

UnitedHealth Group (UNH)

Fighting the Bear with Healthcare

Investment Summary

We value UNH at $604.09 per share using a DCF analysis with a 3.5% terminal growth rate and a 9% cost of equity. With the stock currently trading at $540.66, we estimate this stock to offer a 11.73% potential upside.

Company Description

UnitedHealthcare Group is the leading health insurance provider in the United States by direct premiums written. Headquartered in Minnetonka, Minnesota and incorporated in 1977, the company operates a well diversified portfolio of brands with four distinct segments within their industry: health insurance via UnitedHealthcare; local care delivery via OptumHealth; consulting and data warehousing via OptumInsight, and pharmacy management via Optumrx. UNH's industry-wide dominance, represented by its 25% market share, ensures they are well positioned to capture much of the benefits provided by macro factors related to the end of the pandemic, as well as legislative tailwinds on the horizon within the U.S. Indeed, the end of the pandemic has signaled the return of postponed primary care procedures that maintain the health of their members, while also providing a growth vector for client base expansion. On the legislative front, the recently passed Inflation Reduction Act reduces the cost of healthcare, and makes it possible to negotiate the cost of drugs, which is a boon to health insurers like UNH.

Industry Overview

UnitedHealthcare Group operates in the healthcare providers & services industry. This industry has outperformed the S&P 500 Index by 19% over the last year. In accordance with research by Fidelity outlined in our RFP response, the U.S. economy has experienced late cycle related trends due to high prices, inflationary pressures, diminishing industrial activity, and weakening financial conditions. The performance of the sector may be due to the current status of the business cycle, where defensive sectors like Healthcare are known to do well in the later stages. However, history does not always repeat in the same way, and this time the healthcare sector must contend with inflationary pressures that threaten the profitability of the overall sector, as Rising input costs and a tight labor market have largely defined macroeconomic conditions in fiscal 2022. BAM believes that UNH is uniquely positioned to weather these pressures by using its strong market position to pass costs along through its contractual negotiations. The Inflation Reduction Act (IRA) is a legislative boon to insurers, since it extends federal subsidies to 2025 that previously had an expiration date at the end of 2022. The legislation is designed to prevent drop offs in coverage and significantly reduces the cost of healthcare for millions of Americans. Increased affordability allows for broader access to healthcare providers, which we believe will benefit the industry in both the short and long term.

Appendix IV: Sample Analyst Report

T12M Comps	Market Cap ($B)	5-Yr Rev. CAGR	5-Yr EPS CAGR	D/E	PEG	P/B	P/CF	P/E
Median	5045.32B	11.41%	16.2	54.26	1.6	3.5	16.65	20.35
UNH	502838.64B	9.96%	17.2	58.69	1.97	6.74	14.87	24.49

The table above presents a competitive showing of UNH's relative valuation metrics. UNH is the industry giant with a $503 Billion market cap. While growth rates are comparable to industry, we see this is a positive given its size. Valuations are also at a slight premium but we feel it is justified by its dominant market position. Given its cash flow generating capability, the Price to Cash flow metric looks very attractive to us. With its leading position, UNH represents a good balance between Value and Growth.

Financial Analysis

Key Metrics	2017	2018	2019	2020	2021	2022E
Revenue ($MM)	201159	226247	242155	257141	287597	323,1130
Rev Growth (%)	8.8	12.5	7.0	6.2	11.8	12.3
EPS	10.01	12.8	14.99	16.76	18.84	21.97
EPS Growth (%)	24.8	28	17.1	11.8	12.4	16.6
ROE (%)	26.1	-1.8	5.1	-1.2	0.7	5.5
LTD/Equity	0.13	0.14	0.14	0.13	0.10	0.09
Y/E PE Ratio	22.04	19.46	19.61	20.92	26.65	24.49

UNH's key financial metrics trend follows the COVID-19 macro trend of decline in 2020 and then recovery in 2021. The company has recovered well from the 2020 lows as the pandemic related strain on the healthcare system abated, and users were free with renewed confidence to pursue primary care, as well as, elective procedures. The healthcare cost reducing federal subsidies - which were recently extended for an additional three years - also aided in UNH's recovery. As a result of the prior factors, revenue growth and earnings per share growth metrics have returned to the pre-pandemic trend. Return on equity, which saw a significant decline in 2018, appears to be back in the growth track which may indicate a positive impact on profitability, and their debt to equity ratio shows a conservative balance sheet management. It is clear that UNH is improving, and should continue to do so considering the post pandemic and legislative tailwinds that seek to elevate the healthcare sector moving forward.

Investment Thesis

UnitedHealth Group presented strong third quarter results. Their revenues of $80.9 billion grew 12% year-over-year, bolstered by strong performance from their diversified Optum and legacy UnitedHealthcare segments. Furthermore, adjusted earnings increased by 19% year-over-year, outpacing top-line growth. Profit expansion was primarily driven by served member increases. These developments led management to upgrade the full year 2022 net earnings outlook for a third straight quarter from $21.40 to $21.85 in its latest earnings call. We believe these strong results will continue as UNH navigates a favorable post-COVID operating environment largely absent from recent pandemic headwinds. Healthcare cost subsidies, and negotiated drug cost reductions as a result of the Inflation Reduction Act can be expected to further bolster UNH's bottom line. In addition, UNH recently completed its acquisition of Change Healthcare in an $8 billion acquisition that will help the company to streamline its administrative and payment processing, and gain access to the target's valuable data.

Appendix IV: Sample Analyst Report

Our recommendation is based on the company's excellent post-pandemic recovery, long-term boosts to their bottom line related to legislative policy activity, recent acquisitions, and outstanding member growth across their diversified portfolio of segments within the healthcare sector. We believe that the broader access to healthcare due to cost reductions, as well as the winding down of the pandemic will serve to increase member growth, which is one of the primary drivers of UNH's profitability. Indeed, the reduced strain on the healthcare system, the renewed confidence by consumers to seek primary care, and the benefits of Change Healthcare's data should help UNH achieve better health outcomes for their members, which may reduce their costs over time due to the mitigation of expensive procedures resulting from poor health.

Recommendation and Risks

BAM issues a **BUY** recommendation.

Using a DCF valuation model (exhibit A.1), we value UnitedHealth Group at $604.09 per share with a 3.5% terminal growth rate and a 9% cost of equity. As the stock currently trades at $540.66, we estimate this stock to have a 11.73% potential upside.

Key Drivers:

- Strong financial results with upgraded earnings outlook
- Solid member growth throughout the company's diverse segments
- Cost of care and drug cost reductions should positively impact UNH's bottom line
- Lower healthcare costs expand access to more people, which will help member growth
- The completed Change Healthcare acquisition should help UNH streamline its administrative and payment processing, as well as leverage the former's data to improve the health outcomes of their members

Some downside risks include continued inflationary pressures affecting the macro environment within the U.S.; new laws and regulations could materially impact UNH since they are a highly regulated business; and lastly, a failure to develop and maintain satisfactory relationships with healthcare payers, physicians, hospitals, and other service providers could also affect UNH's business moving forward.

Appendix IV: Sample Analyst Report

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DCF Valuation Model: Continuing Operations Perspective: All Amounts in Millions — Last Updated 11/9/2022

Description	TICKER	Sector	Market Cap	Market Cap (MIL)
UnitedHealth Group Inc	unh	Healthcare	$505,165,159,313	$505,165

DCF Valuation: on 1/1/2023	604.09
Current Stock Price	540.66
Upside (Downside)	11.73%
Total Potential Return	20.73%

Completed Months of Fiscal Year: 0 To Jan 1

Apr 1 2022-March 31 2023

	2018	2019	2020	FY 2021	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	Perpetuity
Assumptions										
Sales Growth	12.5%	7.0%	6.2%	11.84%	12.35%	8.68%	8.00%	8.00%	7.00%	3.50%
EBIT Margin	7.7%	8.1%	8.7%	8.3%	8.66%	8.89%	9.27%	9.47%	9.56%	9.56%
Tax Rate	22.3%	20.8%	24.0%	20.5%	21%	21%	21%	21%	21%	21%
Net WC Turnover (excluding Cash)	-8.4	-8.4	-7.8	-8.0	-8.00	-8.00	-8.00	-8.00	-8.00	-8.00
FA Turnover Ratio	17.7	13.4	12.8	13.4	13.38	13.38	13.38	13.38	13.38	13.38
Cost of Capital										
10 Year T-Bond Rate					4.14%					
Cost of Debt (WACC_COST_DEBT from BB)					4.09%					
Cap Structure % Debt					10.21%					
Equity Risk Premium (Damodaran)					5.38%					
Beta					0.75					
CAPM Ke					9.00%					
Cap Structure % Equity (at MV)					89.79%					
WACC					8.41%					
Income Statement										
Sales	226,247.00	242,155.00	257,141.00	287,597.00	323,113.70	351,172.50	379,266.30	409,607.60	438,280.14	453,619.94
EBIT	17,344.00	19,685.00	22,405.00	23,970.00	27,974.90	31,234.50	35,157.18	38,777.31	41,908.63	43,366.07
Taxes on EBIT	3874.769694	4096.616985	5371.712709	4918.631107	5,874.73	6,559.25	7,383.01	8,143.23	8,800.81	9,106.87
Net Earnings Before Interest	13,469.23	15,588.38	17,033.29	19,051.37	22,100.17	24,675.26	27,774.17	30,634.07	33,107.82	34,259.19
Diluted # Shares (Millions)	983.00	966.00	961.00	956.00	956.00	956.00	956.00	956.00	956.00	956.00
Balance Sheet										
Net WC (excluding Cash and ST Debt)	(26,868.00)	(28,719.00)	(32,799.00)	(35,951.00)	**(40,389.21)**	**(43,896.56)**	**(47,408.29)**	**(51,200.95)**	**(54,785.02)**	**(56,702.49)**
Net Fixed Assets excl. Intangibles excl GW	12,784.00	18,038.00	20,136.00	21,495.00	24,149.52	26,246.63	28,346.36	30,614.07	32,757.06	33,903.55
Total Debt+Other LT Liabilities	44,758.00	54,619.00	60,014.00	61,925.00	61,925.00	61,925.00	61,925.00	61,925.00	61,925.00	61,925.00
Cash Flow Statement										
Net Earnings Before Interest	13,469.23	15,588.38	17,033.29	19,051.37	22,100.17	24,675.26	27,774.17	30,634.07	33,107.82	34,259.19
Depreciation	924.00	995.00	997.00	996.00	1,119.00	1,216.17	1,313.47	1,418.54	1,517.84	1,570.97
Net WC (Incr) Decr	1,044.00	2,246.00	5,090.00	2,553.00	4,438.21	3,507.35	3,511.73	3,792.66	3,584.07	1,917.48
Fixed Assets (Bought)Sold	(2,063.00)	(2,071.00)	(2,051.00)	(2,454.00)	(3,773.52)	(3,313.29)	(3,413.20)	(3,686.25)	(3,660.83)	(2,717.46)
Free Cash Flow	13,374.23	16,758.38	21,069.29	20,146.37	23,883.87	26,085.49	29,186.16	32,159.03	34,548.90	35,030.17
PV						24061.65003	24833.03653	25239.57856	25011.50547	516383.6402
Cumulative PV						24,061.65	48,894.69	74,134.27	99,145.77	615,529.41
-Total Debt Net of Cash										38,018.00
Equity Value										577,511.41
Equity Valuation/Share										**604.09**
Value at 1/1/2023:										**604.09**