CAL POLY POMONA

REQUEST FOR PROPOSAL

College of Business Administration

Finance, Real Estate, Law

STUDENT MANAGED INVESTMENT FUND

California State Polytechnic University, Pomona

BRONCO ASSET MANAGEMENT

3801 W. Temple Ave,
Pomona, CA 91768

November 10th, 2021

Date of response	November 10th, 2021
Name of School	California State Polytechnic University, Pomona
Faculty Advisor	Pawan K. Tomkoria
Title of Advisor	Lecturer
Address	3801 W Temple Ave
City, State, Zip	Pomona, CA 91768
Telephone	(909) 869-4435
E-Mail	pktomkoria@cpp.edu
Student Contact	Cameron Massey
Address 1	3801 W Temple Ave
Address 2	C/O: CBA, FRL Department
City, State, Zip	Pomona, CA 91768
Telephone	(909) 800-1518
E-Mail	cmmassey@cpp.edu

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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 is now a member of the 23-campus California State University (CSU) System, serving over 25,000 students of all backgrounds. Cal Poly Pomona 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 serve approximately 996 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, just to name a few. 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 (now partially virtual due to COVID-19 precautions) during lecture hours and have begun integrating Bloomberg terminals into the investment analysis curriculum. The lab is also extensively used by our Student Managed Investment Program. Cal Poly Pomona 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, this gives students graduating from Cal Poly Pomona a competitive edge in the job marketplace.

Departments

College of Business Administration
Finance, Real Estate, and Law Department
Accounting Department
Technology Operations Management Department
International Business and Marketing Department
Graduate Business Administration

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
FRL 4990-02 - Python for Finance

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. 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. Currently, SMIC also organizes a study group for the CFA Level 1 candidates.

Student Managed Investment Fund

The Student Managed Investment Program consists of three components: The Coursework of FRL 4611 and FRL 4990, Bronco Asset Management (BAM), and the Student Managed Investment Club (SMIC).

The Coursework consists of one semester of portfolio research and construction during Fall and one semester of hands-on management of the constructed portfolio during Spring.

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 for BAM analysts to discuss the portfolio and equity strategy as well as providing managerial support to the SMIF class. 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 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 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 eleven students is divided into four groups. For the first part of the class, we established four economic analysis teams dedicated to the U.S., Europe, China, and selected Asian countries. Afterward, teams are reconstructed and assigned specific stock sectors and fixed income investments for specific security analysis and selection. The reason for team reconstruction midway through the semester is to help students develop teamwork skills. Several program alumni serve as mentors, facilitating an invaluable exchange of ideas and experience. For a specific breakdown of team assignments, please refer to the organizational chart in the appendix.

Internal Communications

The BAM team communicates primarily through scheduled meetings and various electronic telecommunications, including but not limited to Zoom, Slack, e-mail, and text messaging. All data, scripts, and research are accessible through a shared Google Drive folder. The team has business continuity through holidays, including summer months. The BAM team will meet every week during academic periods and every other week during non-academic sessions.

Meeting Schedule

Required coursework meetings are held weekly from 5:30 pm to 8:15 pm every Thursday and are held in the Dr. J. Douglas Ramsey Bloomberg Lab on campus. Additional mandatory meetings are conducted on Tuesdays on an as-needed basis virtually. BAM meetings are held virtually every Wednesday at 5:30 pm. SMIC meetings are held virtually on Tuesdays at Noon. Finally, 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, club membership is open to all students. In addition to the minimum CFA Orange County requirements, applicants should have:

1. High overall academic performance.
2. Majoring in a business-related field.
3. Bloomberg Market Concepts certification.
4. Completion of the core Finance course "FRL 3000".
5. Have taken an additional investment-related course.
6. Practical knowledge and understanding of the financial market.
7. Have prior investing experience.
8. Ability to work in a collaborative team environment.
9. Willingness to commit significant time to course work.
10. Genuine enthusiasm and a deep interest in an investment-related career.
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. These members will be selected by the process mentioned above. All fund management positions are filled through a voting process.

Background of Students and Faculty

Bronco Asset Management is directed by motivated and diligent undergraduate students studying Accounting, Finance, Economics, Information technology, and International business, who are interested in investments and wealth management. The diversity of the group allows for a multitude of perspectives in the decision-making process. Members have completed additional investment and finance-related classes. This knowledge forms the bedrock of the BAM team's success.

Background of Students and Faculty

BAM consists of high academic performers and campus leaders. They 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.

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 as an adjunct faculty professor and is currently an investment and management consultant. Professor Tomkoria combines his industry experience with academic excellence to set students up for success.

The BAM team is uniquely qualified to manage the investment portfolio because it 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's qualifications are further bolstered by members with personal investing and financial programming 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 analysis, and well-supported projections.

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 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 this involvement of the alumni is a significant differentiator for CPP.

Our Faculty Advisor and Department Chair are extremely dedicated to the SMIF program and spend substantial time with BAM. This includes attending every meeting, 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.

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.

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 10% of our overall equity portfolio, it will be represented by an Exchange-Traded Fund (ETF). Due to their relatively low allocation, investing in ETFs in these sectors helps reduce unsystematic risk through diversification. Our goal is to gain overall exposure to these sectors while minimizing the firm's idiosyncratic risks. We also choose ETFs to optimize the use of BAM's limited resources.

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

Additionally, our international investments will be represented by broad ETFs.

Within the Fixed Income portion of our portfolio, we will allocate a 10% weight to both a Senior Loan mutual fund (FTSL) and a 7-10 Year U.S. Treasuries ETF (IEF). This mix of bonds is crafted to hedge our equity portfolio while also producing yield.

Market Overview & Asset Allocation

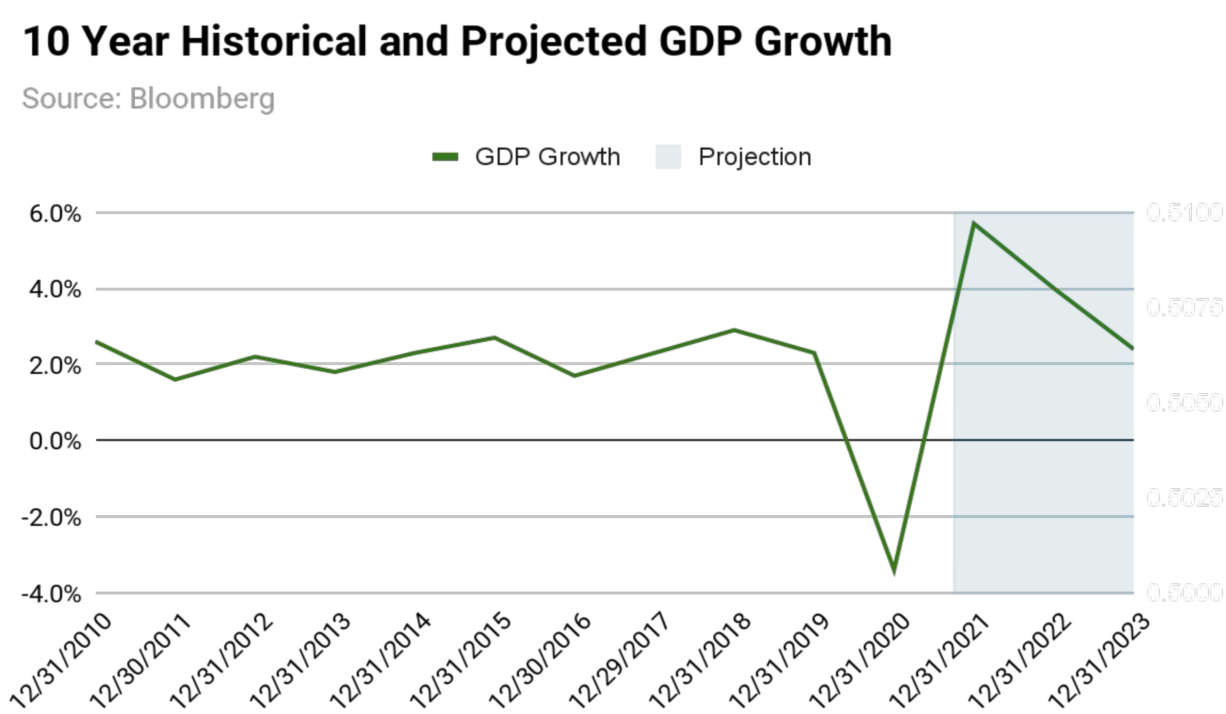
Introduction

When developing a capital market outlook, Bronco Asset Management is governed by fundamental economic analysis. After carefully researching global economic drivers and risks, each opportunity is weighed against BAM's comprehensive investment philosophy. Allocation of capital is finally 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, the European Union, China, Japan, India, and South Korea. Based on our economic analysis, we also analyzed the final asset allocations, as well as their requested limitations, expected returns, risk measures, and optimization methods.

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.



As shown above, U.S. GDP growth has hovered around 2.25% over the last 10 years, pre-pandemic. As noted in the consensus table below, U.S. GDP is forecasted far above this at 5.8% in 2021, but slowing to 2.4% by 2023. In terms of inflation, the Fed has set a target of around 2%. The consensus is to exceed the Fed's target at 4.6% in 2021 and tapering to 2.5% by 2023. The Fed acknowledges the current high inflation but has maintained that these effects are transitory and will likely level out to 2% once supply chain pressure subsides. 10-year Treasury rates are expected to increase to 2.4% in 2023 from 1.7% in 2021, although the slowing labor market recovery has slowed progress on this hike. As a result of the continuing post-pandemic recovery, employment is expected to be strong with the unemployment rate declining to 3.4% by 2023.

United States of America

Consensus	2021E	2022E	2023E
GDP Growth Rate	5.8	4.1	2.4
CPI %	4.6	3.1	2.5
10 Year T-Note Yield	1.7	2.1	2.4
Unemployment Rate	5.0	3.8	3.4

Sources: Bloomberg, U.S. Federal Reserve, Intl. Monetary Fund, E.U. Commission

Last updated: November 6, 2021

BAM analysis suggests general consistency with the above, but with a view that inflation and rates will be higher than the Fed and consensus estimates. Additionally, we believe the Fed is overestimating the labor supply pool, and therefore wages and inflation will run hotter and longer than expected. As a result of these conclusions, we interpret the U.S. business cycle as entering mid-stage, signaling that economic growth will begin slowing. A more detailed analysis of the U.S. economy, its major drivers, and BAM's outlook on these drivers is discussed below.

GDP Growth

U.S. GDP consists of four components, with consumer expenditures being the largest contributor at about 69%. Business and Government Expenditures contribute another 17% each, while International Trade detracts 4%.

U.S. GDP, T12M 2021Q3	Consumer Expenditures	Business Expenditures	Government Expenditures	Net Exports
Contribution to Nominal GDP	15,946.2	4,089.8	4,077.0	-935.5
% of Nominal GDP	68.8%	17.6%	17.6%	-4.0%
Contribution to Real GDP	13,719.3	3,604.3	3,380.2	-1,311.7
% of Real GDP	70.7%	18.6%	17.4%	-6.8%

Sources: Bloomberg, Bureau of Economic Analysis

Last updated: November 2, 2021

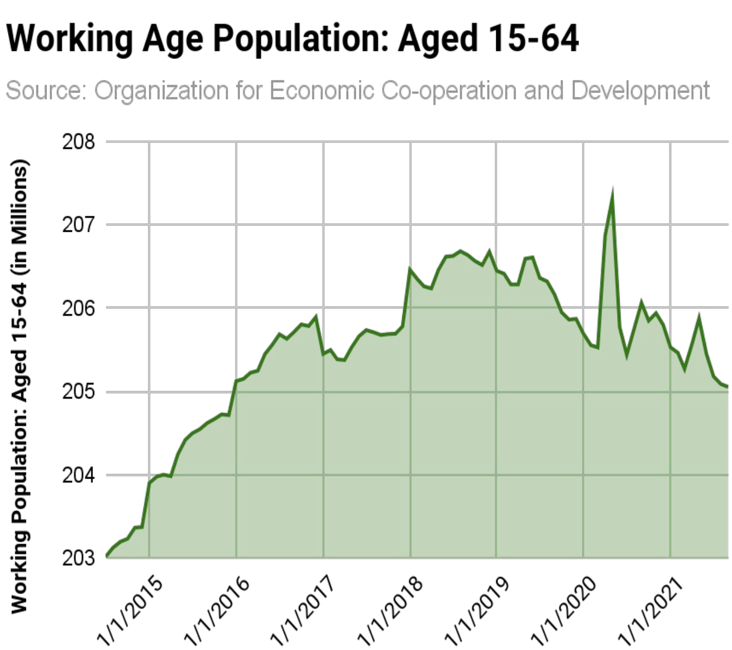
U.S. GDP growth was very strong in the quarters following the COVID-19 recovery, spurred by massive government stimulus, large-scale vaccination programs, leading to increased consumer spending, and labor market recovery. The latest consensus metrics show this strength but normalize to the historical 2.0-2.5% range by 2023. BAM agrees with the consensus growth projections after analyzing each of the four GDP components. A comprehensive component review is detailed below.

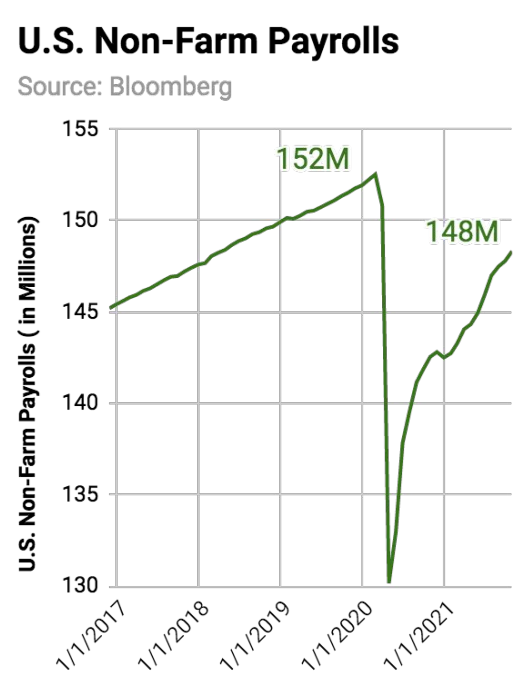
Personal Expenditures Analysis

	Personal Expenditures Outlook
Economic Contributions	**BAM's Outlook**
Unemployment & Labor	Labor pool shrinking leading to strong wage growth
Inflation Rates	Strong wages, supply chain disruptions, psychology of price rise expectations leading to above consensus inflation
Interest Rates	Higher inflation rates mean higher rates but income inequality caps the amount of increase
Consumer Expenditures	Strong outlook based on high employment expectations, high wage growth, and pent up savings

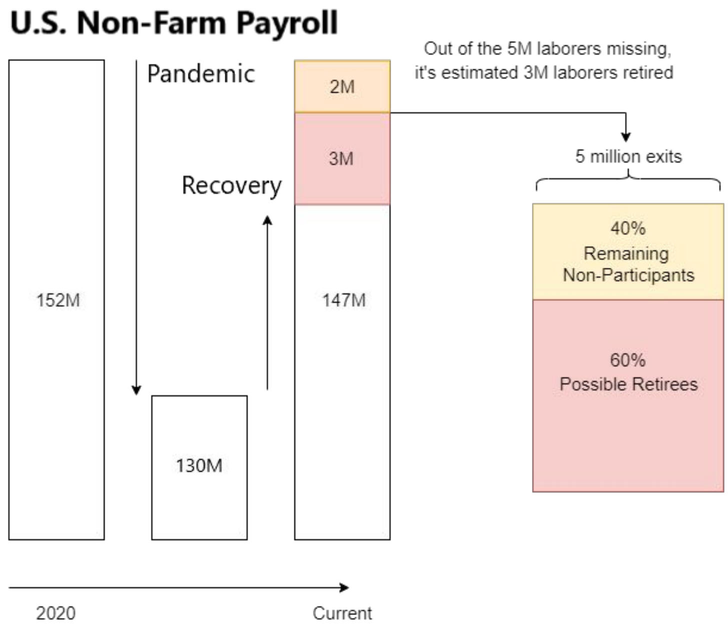
LABOR MARKETS AND WAGE INCREASES

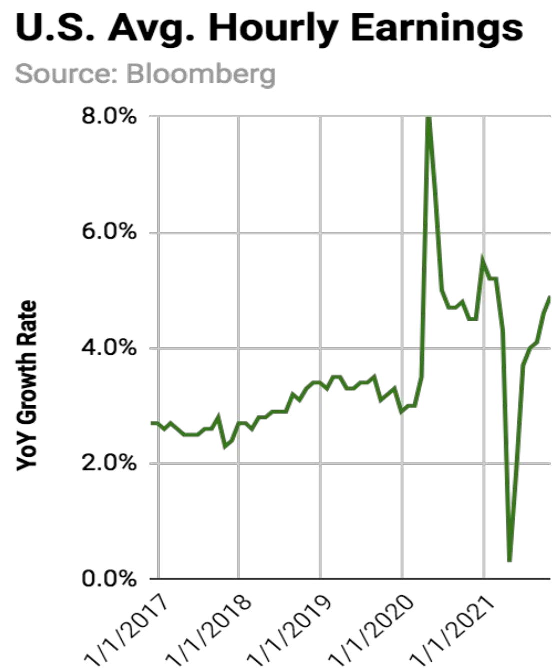
The U.S. saw a decrease of nearly 22M jobs at the pandemic's peak and has since recovered all but around 5M. The working-age population has declined since 2018, indicating a smaller labor market (see graphs below).





Research from the St. Louis Federal Reserve suggests that higher than expected number of people retiring might make up as much as 3M of the missing labor force. Effectively, this would indicate that about 60% of the 5M 'missing' laborers have retired.



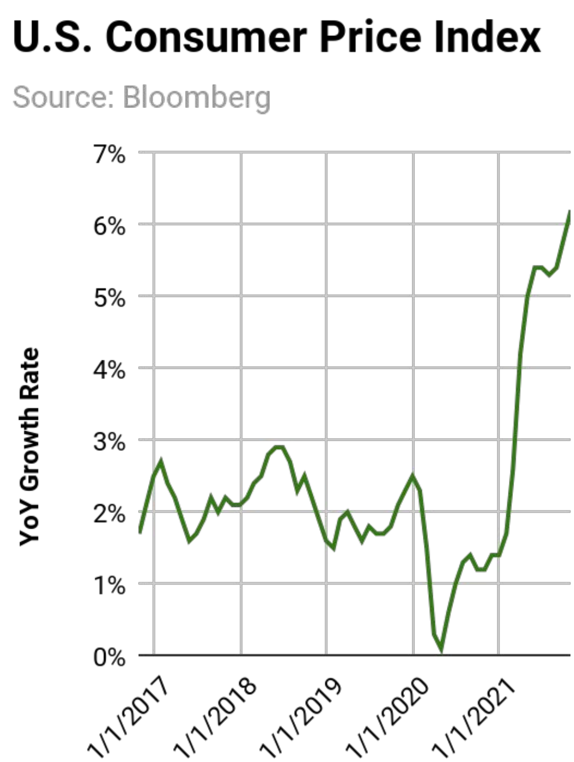


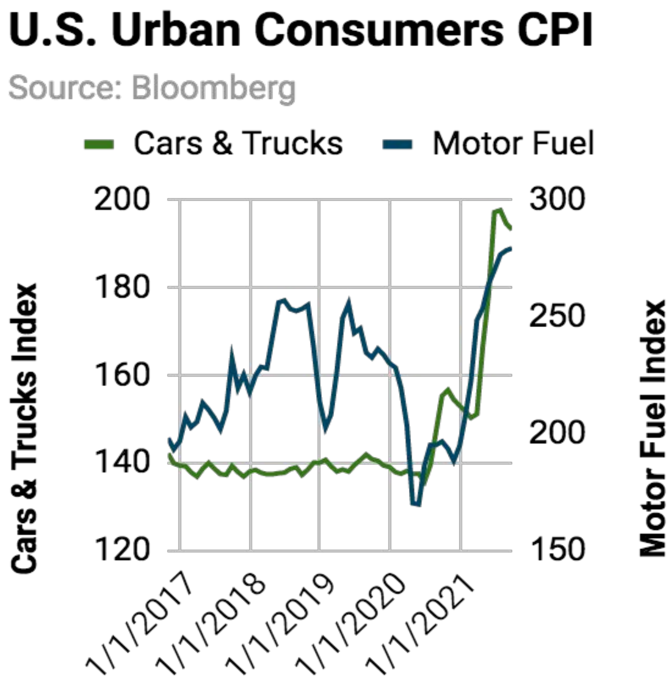
The resulting labor demand implied an average annual hourly earnings growth of around 4% for much of 2021 (shown above, right), incentivizing job participation. However, large jumps in non-corporate business start-ups indicate people are leveraging job selection (U.S. Bureau of Labor Statistics), leading to a power transfer toward the supply-side of labor markets.

As a result, BAM believes the shrinking labor pool, higher retirement rates, and increased entrepreneurship mentioned above will lead to high wage growth that will sustain longer.

INFLATION

The Consumer Price Index (CPI) increased to 5.4% in the second quarter of 2021 (see right). In October, Federal Reserve chairman Jerome Powell acknowledged rising inflationary concerns after months of reiterating beliefs that inflation was 'transitory.' Rather than stabilizing to their 2% target (as measured by the Core Personal Consumption Expenditure index), inflation soared throughout 2021.



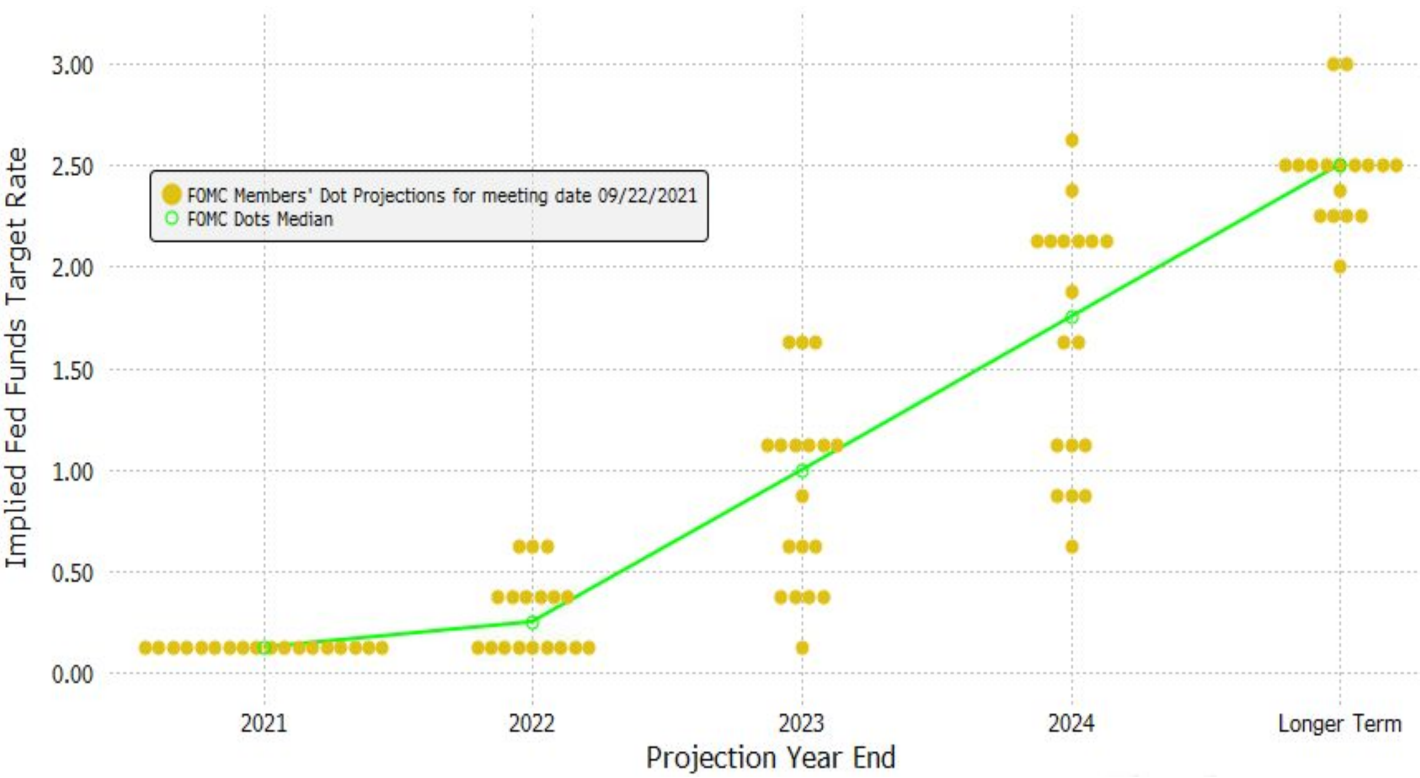


Global supply chain bottlenecks have raised the cost of goods; notably, the urban consumers used-car and fuel price CPIs raised 26.5% and 43.1% in 2021, respectively (see left). Despite this, pent-up demand that couldn't be enjoyed during the pandemic is now being released. Increased price expectations may be ingrained in consumer psychology, as high savings rates and wage growth help spur inflationary growth.

In line with high wages, supply chain disruptions, and psychology of price rise expectations, BAM believes inflation will be slightly higher than consensus.

INTEREST RATES & HOUSEHOLD SAVINGS

U.S. rates are expected to rise from near-zero to 1.0% by 2023, as shown in the 'Implied Federal Funds Target Rate' projections (see Bloomberg dot plot below). The Fed has stated it is a long-term priority to achieve their employment and inflation targets before raising rates. Given our earlier discussion about a shrinking labor pool and high inflation growth, we believe the Fed may wait too long before rates begin to exceed consensus.



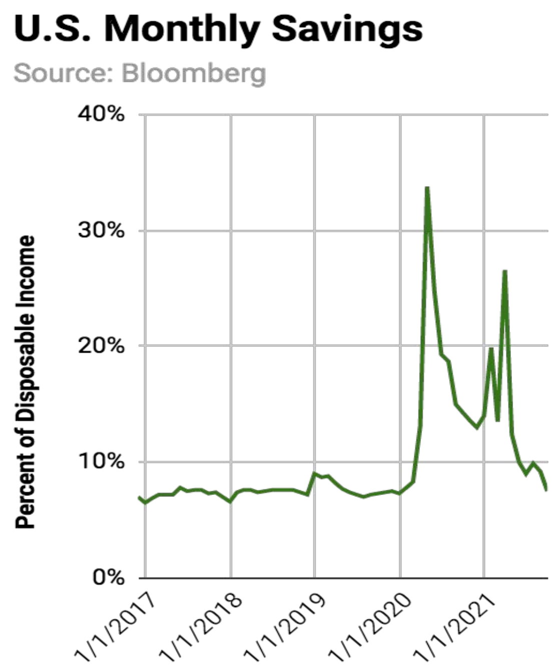
However, we believe this rise will not be too substantial due to income inequality. During the Jackson Hole Economic Symposium in 2021, a correlation between income inequality and downward pressure on interest rates was presented. Atif Mian, Ludwig Straub, and Amir Sufi's paper, "What Explains the Decline in r*? Rising Income Inequality Versus Demographic Shifts", concludes that the top 10% income earners have been saving at higher rates than the distributions bottom 90% (page 15). These excess savings thereby pursue safe investments, lowering potential return rates (page 9). The authors note that these differences occur across age groups, questioning prior research that downward interest rate pressures were due to the aging of the U.S. population (page 17).

These findings lead BAM to believe interest rates will be higher than Fed expectations and above consensus but the rise will be limited by income inequality rate pressure.

CONSUMER SPENDING & SAVINGS

Personal expenditures make up the biggest driver of U.S. economic growth, accounting for 70% of the nation's GDP. Household savings increased from the national average of about 7% to ranges from 15 - 30% (see right) in response to COVID-19 fears and trillions in fiscal stimulus. Additionally, unemployment is improving and wages are growing at 4%, still a percent above the historical average. These factors are all indicative of strong consumer spending.

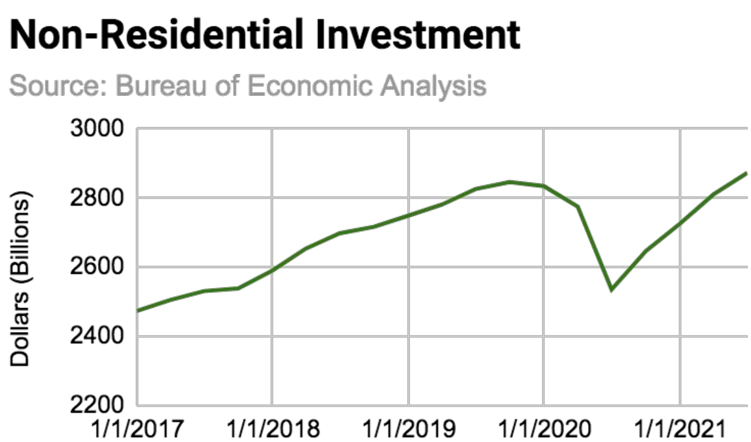
Because of these factors, BAM's opinion is that personal expenditures will outperform consensus.



Business Expenditures Analysis

	Business Expenditures Analysis
Economic Contributions	**BAM's Outlook**
Non-Residential Investments	Accelerating investments show confidence in the economic outlook
Housing Starts	Increased supply of homes met with increased demand. Stabilization in 2022 but at higher levels than pre-pandemic
PMI Manufacturing/Services	Confidence levels increasing as pandemic subsides
Corporate Profit Margins	Businesses have been able to manage the worst of the pandemic and can now invest more in their business
USD Forecast	Continue to strengthen due to rising interest rates and the higher yields of U.S. Treasuries

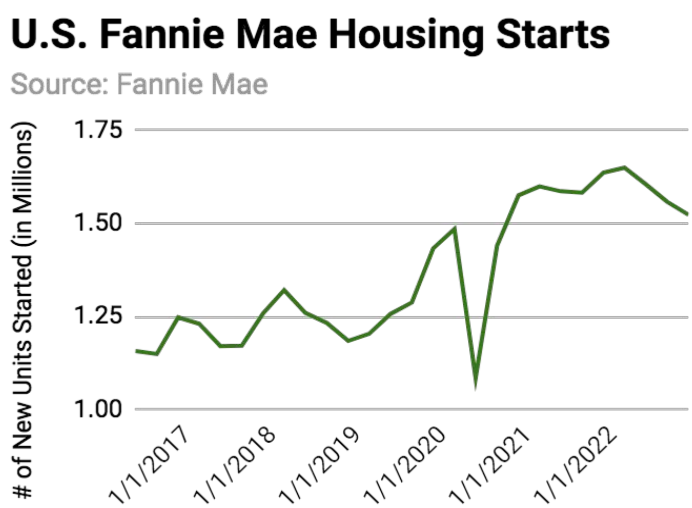
NON-RESIDENTIAL INVESTMENTS



Non-residential investments (see left) show sustained growth up to the pandemic. As lockdowns eased and pent-up demand released, capital investments quickly rebounded throughout 2021. BAM views non-residential investments as strong, due to the easing and reopening of the economy.

HOUSING STARTS

Housing starts were negatively impacted at the onset of the pandemic but quickly rebounded to new highs (see right). BAM believes the increase will gradually ease throughout 2022, but at stronger levels than pre-pandemic. This belief is due to strong millennial household demand, a shift in demographics, and low-interest rates.

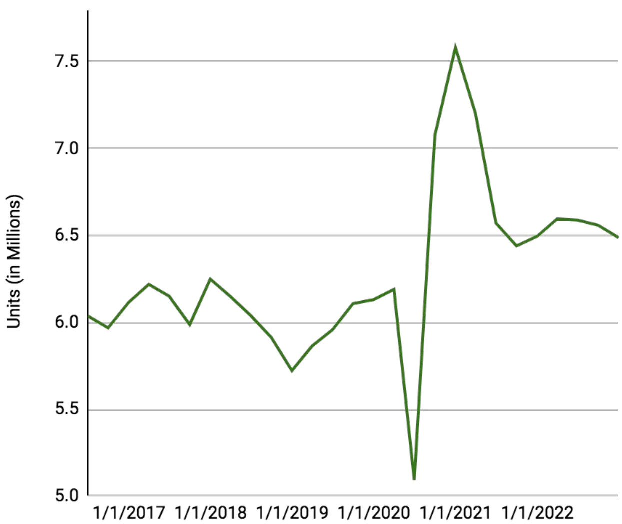


NEW AND EXISTING HOUSING SALES

A spike in new and existing home sales in 2021 (bottom left) reflects increased consumer expenditures and healthy demand in real estate. Paired with rising home prices (bottom right) and previously discussed inflated material costs and forecasted rising rates, sales should stabilize. However, BAM believes sales will exceed pre-pandemic levels due to higher employment, wage growth, current low-interest rates, and millennials setting up their households.

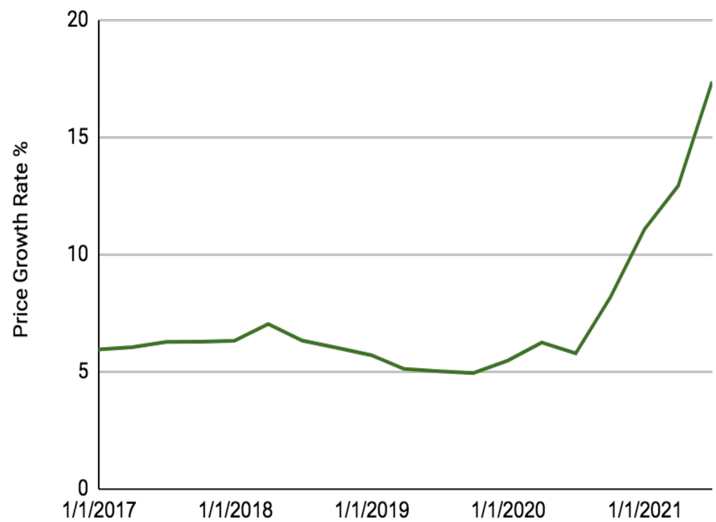
U.S. Total Home Sales New and Existing SAAR

Source: Fannie Mae



U.S. House Price Index YoY

Source: Federal Housing Finance Agency

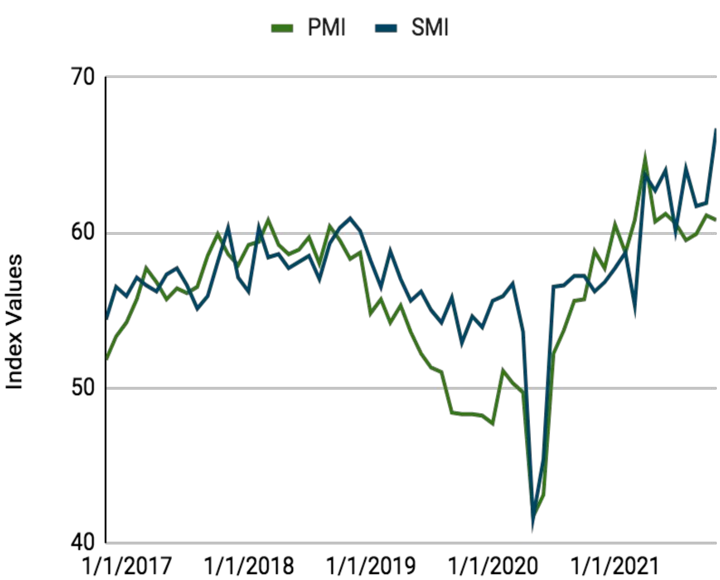


MANUFACTURING AND SERVICES

A survey score above 50 indicates optimism in economic activity. Although global supply chains remain an issue and are leading to inflated prices, consumers are still purchasing despite the passed-through costs.

Manufacturing and Services PMI

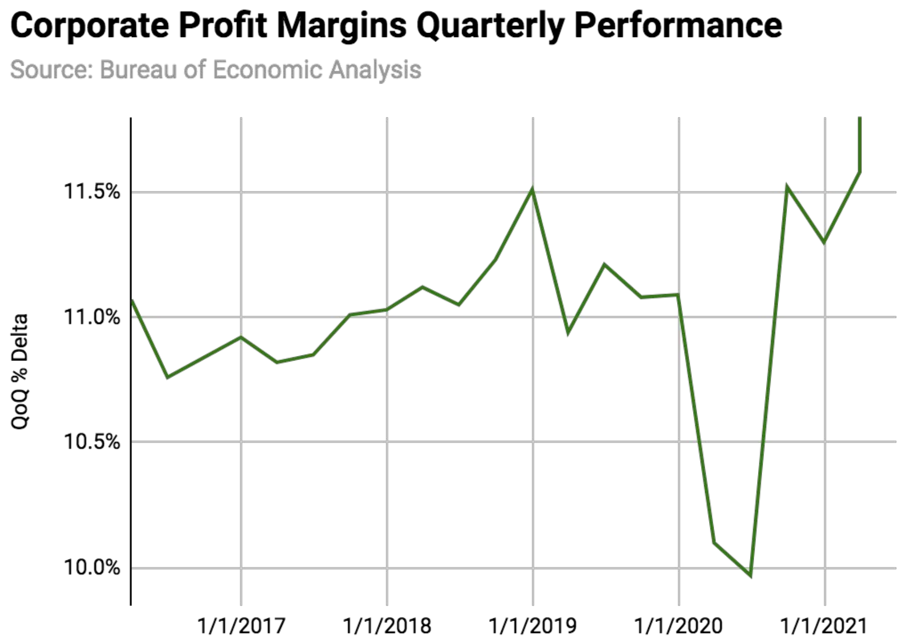
Source: Institute for Supply Management



PMI and SMI respectively have recovered very well throughout the pandemic, and as the economy reopens we expect both PMI and SMI to remain in an expansionary phase above 50. It is important to note that SMI has overtaken PMI (shown to the left), due to a growing shift from manufacturing to services. As the economy reopens, the services sector will likely benefit the most as traveling, hospitality, and dining rebound.

CORPORATE PROFIT MARGINS

According to data from the Bureau of Economic Analysis, corporate profits appeared to remain stagnant within the 11% range between Q1 2016 throughout the pandemic lockdowns in Q1 2020. There is a sharp decline leading into Q2 2020 due to the pandemic. As an example, some companies closed retail locations, yet operating costs continued. Post pandemic, corporate profitability increased beyond 11% as companies became more efficient. Increased margins allow the potential for more business investments.



U.S. DOLLAR OUTLOOK

The U.S. Dollar remains the world's reserve currency and a store of value for investors worldwide. The COVID-19 pandemic induced a flight-to-quality in early 2020 as uncertainty led many to the safety of the dollar. The current market forecast of the spot dollar (DXY) shows renewed strength from the lows of January 2021 to October 2021 (see below). As the central bank implements a tighter monetary policy, we expect rising rates to attract foreign investment in the U.S. Treasury which will further increase the dollar value. This increased strength will be compounded by rising demand due to the U.S.' high-credit, and compelling yields relative to other developed countries. The stronger dollar may partially limit corporate profit margin in the long term.

Government Expenditures Analysis

	Government Expenditures Outlook
Economic Contributions	**BAM's Outlook**
Economic Stimulus	Approved and proposed programs lead to continued government support
Rising National Debt	Rising public debt is an emerging concern
Political Divisiveness	Divisiveness may constrain additional programs

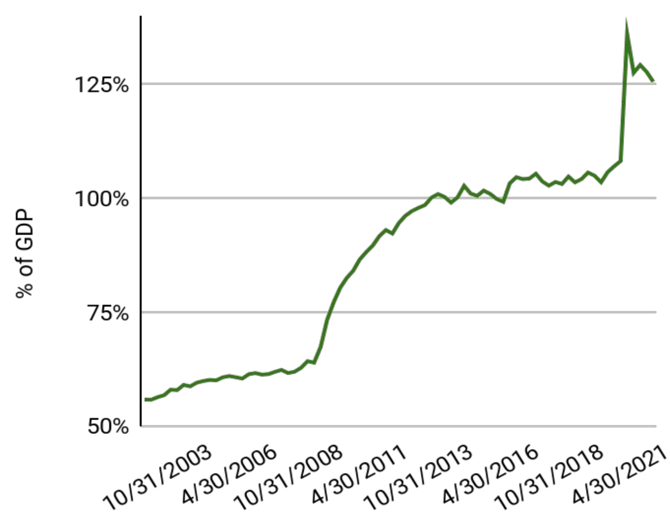
In 2020, government spending spiked due to COVID-19 stimulus packages. Previously approved programs ($13.02T approved in 2020 and 2021 according to CBO and OMB) and current proposed programs ($1.2T Infrastructure Bill and $1.75T Reconciliation Package) will continue to provide high government expenditures. This will support the economy through 2022. However, the current political divisiveness and emerging concerns on rising debt will likely limit stimulus funding beyond 2022.

U.S. Government Expenditures Annualized

Source: Bureau of Economic Analysis (SA)

U.S. Total Public Debt as a % of GDP

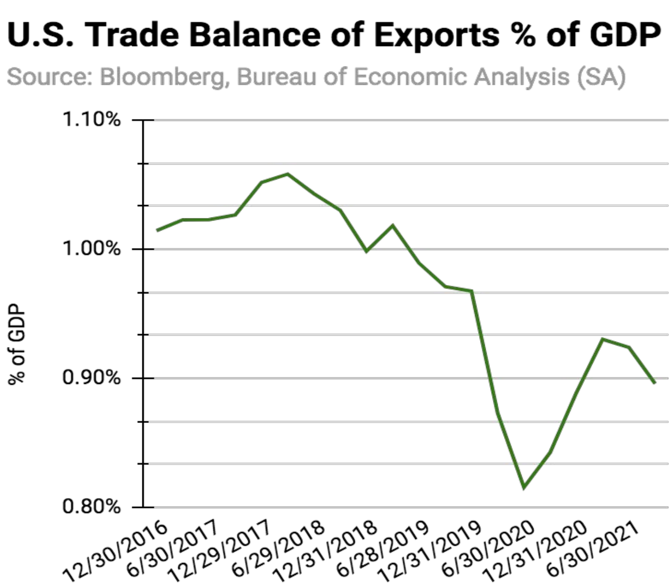
Source: Federal Reserve Economic Data (FRED)

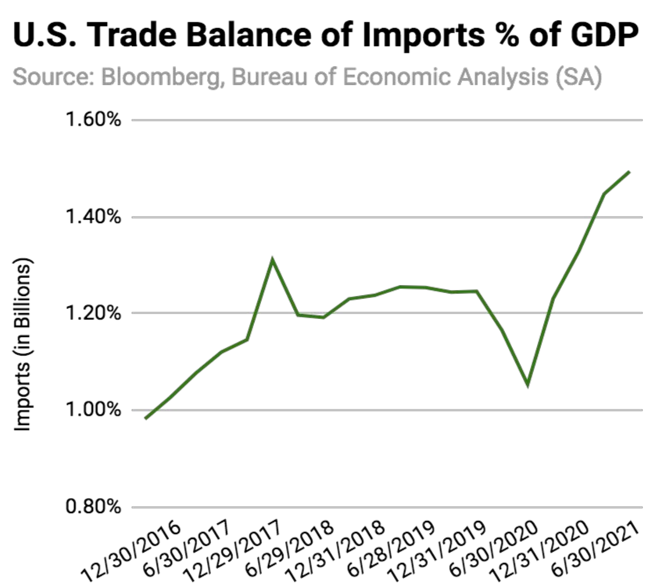


Net Trade Analysis

	Net Trade Outlook
Economic Contributions	**BAM's Outlook**
Exports	Trade war with China, limits in tech exports, and temporary supply chain disruptions contribute to declining exports
Imports	Imports will continue to increase as the economy recovers and will be accelerated by a stronger dollar outlook

Net trade contributions to GDP growth has hovered around -3% for the last five years, decreasing to about -4% in 2020 and 2021 (see above). This decrease is, in part, due to the cumulative effect of the ongoing trade war with China, tech export limits, and temporary supply chain disruptions during the pandemic. In addition, while exports have declined, imports continue to increase as the economy recovers from the pandemic. We expect that the stronger dollar outlook in the U.S. will support higher imports. BAM's view is that trade will continue to negatively affect GDP growth in the near term and may grow to be a slightly larger drag in the long term.





U.S. Economic Outlook: Summary

To summarize, BAM's view is that there will be solid growth driven by strong consumer spending and improving unemployment. Business and government spending will also contribute to growth and demand. However, this strength will likely lead to higher inflation and higher interest rates, both above consensus estimates. This implies low allocation to interest-rate sensitive investments and high allocation to investments sensitive to economic growth.

E.U. Economic Outlook

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

European Union

Consensus	2021E	2022E	2023E
GDP Growth Rate	5.2	4.5	2.2
CPI %	2.3	1.9	1.6
10 Year T-Note Yield	0.5	0.8	1.1
Unemployment Rate	7.6	7.3	7.0

Sources: Bloomberg, European Central Bank, Intl. Monetary Fund

Last updated: November 2, 2021

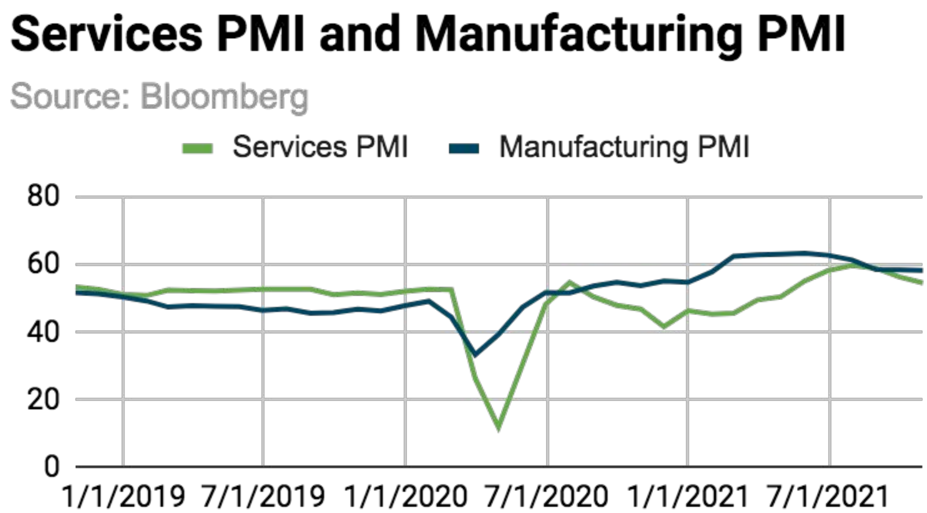
The European economy has had a strong recovery from the COVID-19 pandemic, predominantly contributed by its increasing vaccination rates, falling number of infections, and hospitalizations. This has led to higher consumer spending and a revival of tourism, which is a strong driver of growth in the region. According to consensus data, the economy is expected to consolidate in 2022 with a projected growth of 4.5 percent and moderate growth in 2023, while still remaining strong. Inflation is expected to run higher than ECB goals in 2021. However, it is anticipated to be transitory and will likely decelerate throughout 2022 as supply bottlenecks and commodity prices stabilize. The recovery has led to an increase in labor participation with unemployment continuing to decline YoY. Unemployment is expected to continue its downward trend, reaching 7.0% by 2023. Interest rates are expected to rise but not substantially, approaching 1.1% by 2023.

For a more complete perspective, our analysis of the EU economy is summarized below:

	EU Economic Outlook
Economic Contributions	**BAM's Outlook**
GDP	Expected to return to pre-crisis levels by the end of the year
PMI	59.2, pointing to strongest growth in the last 15 years
Unemployment	Downward trend in Unemployment should continue
10 Year Note	Based on consensus, central banks are likely to increase rates

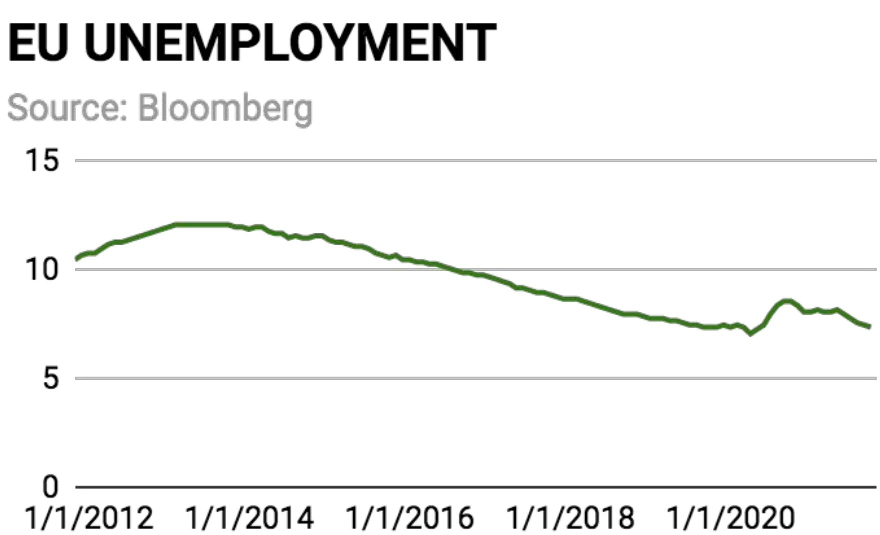
PURCHASING MANAGERS INDEX- COMPOSITE

The European Composite PMI shows signals of a rapidly improving situation with the service and manufacturing sector both leading the way. In May of this year, PMI was at its highest of 59.2, indicating the strongest growth in economic activity in 15 years (see below graphs of Service and Manufacturing PMI). Even before the pandemic, confidence was slowly rising in the service sector, which holds 71% of the total GDP. This recovery has accelerated as we recover from the pandemic. We believe that the PMI indicators support solid GDP growth over the next two years as shown in the consensus.



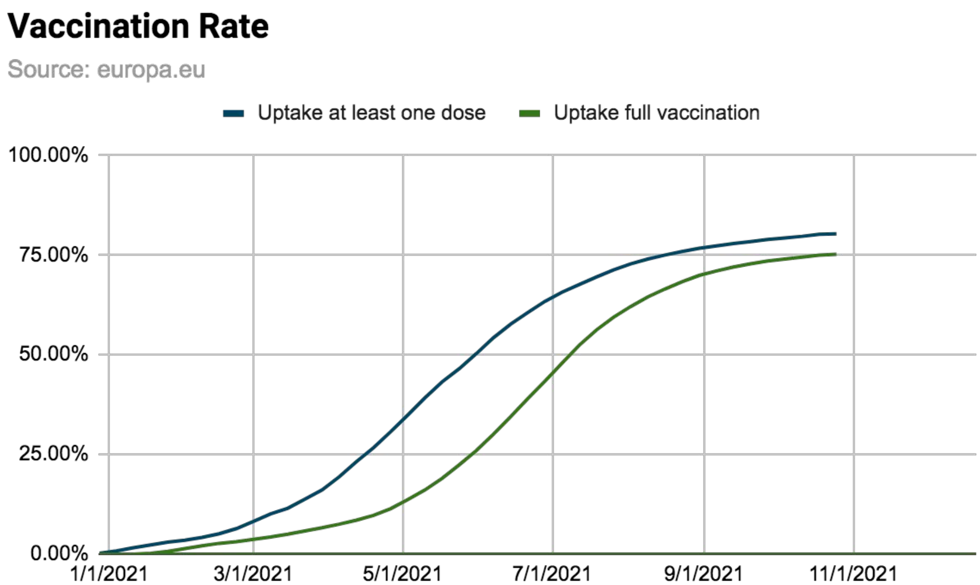
UNEMPLOYMENT RATE

Even though Europe has historically struggled with high unemployment, it has been improving for several years despite being temporarily impacted by COVID-19. The EU 2020 target strategy was to have an employment rate of at least 75% (persons aged 20-64) which has been 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. As a result of these government actions, the unemployment rate has declined to 7.9% this year and is forecasted to drop to 7.3% in 2023, indicating relatively healthy levels when compared to the previous 10 years. In summary, BAM recognizes that employment will be a positive contributor to growth.



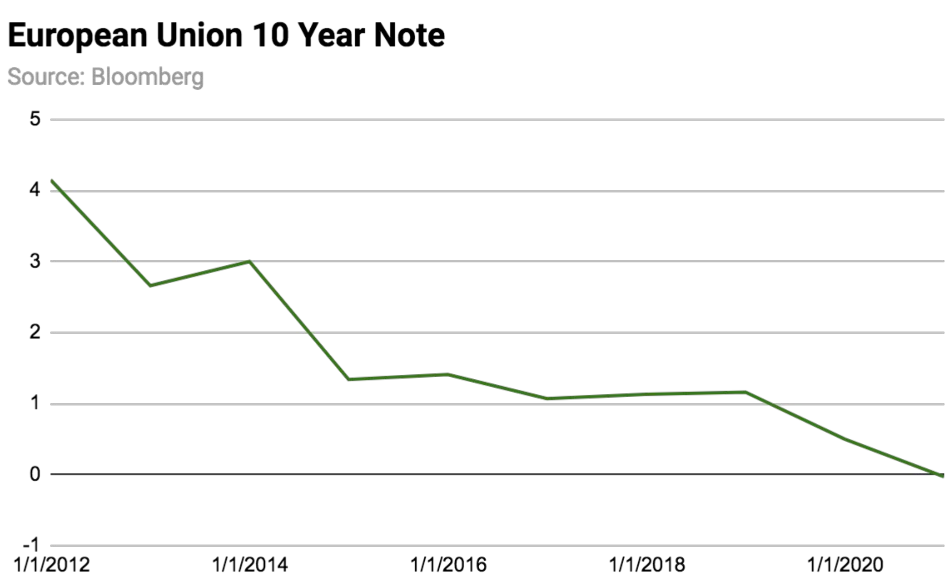
EU VACCINATION RATE

Members of the EU worked together to respond to the challenges posed by the pandemic by offering programs to cope with the virus. The Emerging Support Instrument program helped members receive the vaccines and improved testing to help fight the pandemic. The total doses distributed to EU/EEA countries are over 760 million in the last week of October 2021. With the states working together, they have accomplished over a 75% vaccination rate as shown in the graph below.



Interest Rates

Interest rates in the EU have remained near or below zero in the past 5 years. This has partly been driven by low inflation in the EU and, more importantly, by significant monetary loosening by the European Central Bank (ECB). Current ECB commentary indicates a continued willingness to provide monetary stimulus and delay any aggressive increase in rates. While economic growth will put pressure on rates to rise, an active ECB implies the rate rise will be limited. BAM believes interest rates will rise gradually over the next two years, reaching 1.1% by 2023 (see below).



E.U. Economic Outlook: Summary

According to the IMF, Europe is the region with one of the highest share of fully vaccinated people in the world, bringing mobility back to the economy. BAM strongly believes that with the revival of tourism, business reopening, and high consumer spending, Europe's economy will continue to flourish. As uncertainty fades, employment is expected to improve with economic activity, with inflation temporary. The PMI has recovered from the early stages of the pandemic and is showing confident signs in future growth. Furthermore, their governments have stimulated and set rates low enough to ensure the economy continues performing strongly. With these strong indicators of GDP growth, improving unemployment, and a great handle on COVID-19, BAM believes that the EU will be a strong place to invest.

China Economic Outlook

While remaining the world's second-largest economy and the largest measured in purchasing power parity, China's GDP has been decelerating in recent years. China has shown a strong recovery in early 2021, but that recovery has now moderated. It appears China will return to pre-pandemic GDP growth as the country reported 7.9% in Q2 of 2021 and is projected to be 5.5% in 2022. Returning to the pre-pandemic level implies that the growth will continue decelerating, but this is expected as China is beginning to mature. As the economy matures, as global concern about China's trade surpluses arise, and with income levels rising in unison, BAM believes that China's focus will shift from exports and manufacturing to consumption and services.

The People's Republic of China

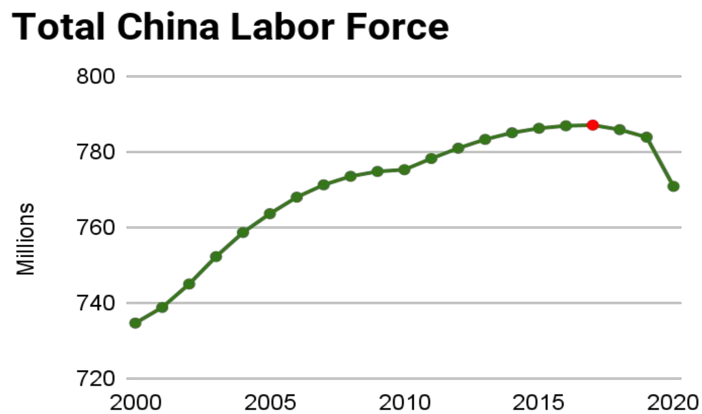
Consensus	2021E	2022E	2023E
GDP Growth Rate	8.5	5.5	5.2
CPI %	1.8	3.6	1.3
10 Year T-Note Yield	2.9	3.0	2.9
Unemployment Rate	3.8	3.6	3.6

Sources: Bloomberg, Intl. Monetary Fund, World Bank

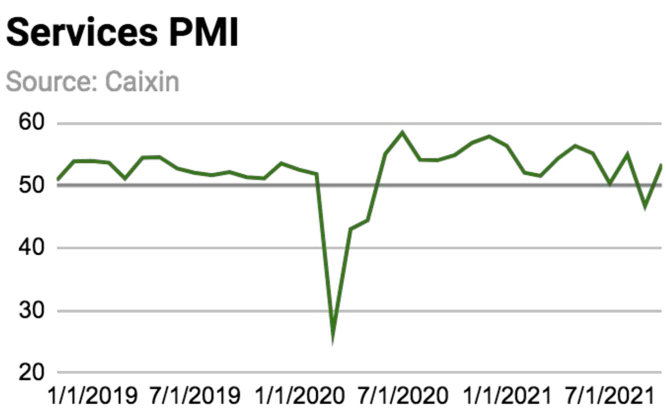
Last updated: November 2, 2021

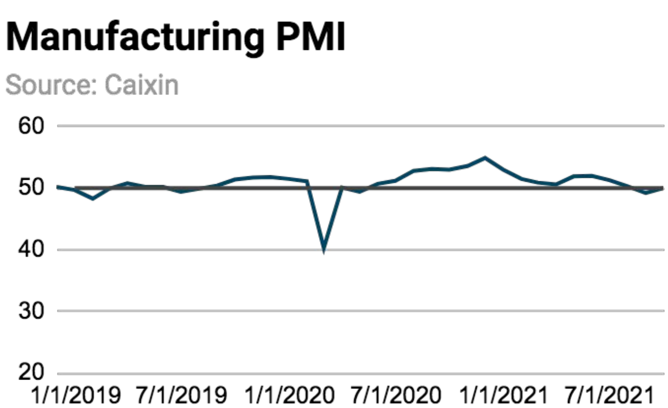
As domestic services and consumer spending play an increasing role in economic expansion, China's strict regulations have proved to provide some difficulties to this growth. After witnessing the latest Tech crackdown by the Chinese government, it is clear the government is not opposed to interfering with companies. However, BAM believes that the latest crackdown also shows that China is not attempting to debilitate these companies. For example, Alibaba (BABA) received a $2.8 billion anti-monopoly probe fine, but the company has a market cap of $482 billion. Additionally, the government penalized Meituan with a fine of $534.5 million while the company's market cap is $212 billion.

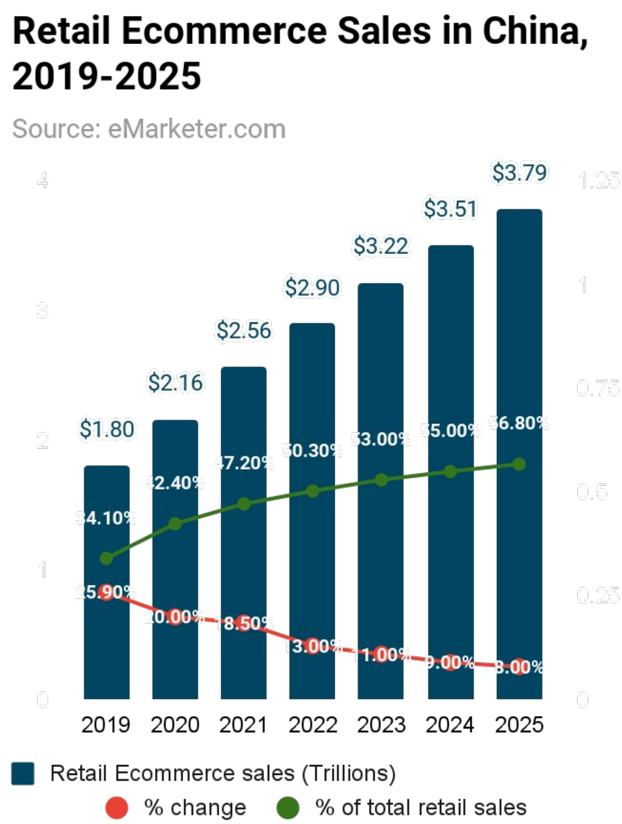
These fines signal that the government does not want to impair these companies. Rather, it indicates that China understands that these large companies like Alibaba and Meituan are the major drivers of the economy. In addition, the 14th Five-Year plan outlines a "dual circulation policy", which places greater emphasis on self-reliance and leadership aiming to strengthen the domestic economy by giving priority to more domestic sectors. China is also establishing self-sufficiency in foundational technologies and emphasizing like "Made in China 2025", which encourages growth toward digitalization and high-tech innovation. Finally, given that the labor force has been declining since 2017 (seen in the figure to the right), technology innovation is crucial to offset the labor decline for economic growth. BAM believes that China is in the early mid-stage with its technology-based transformation.



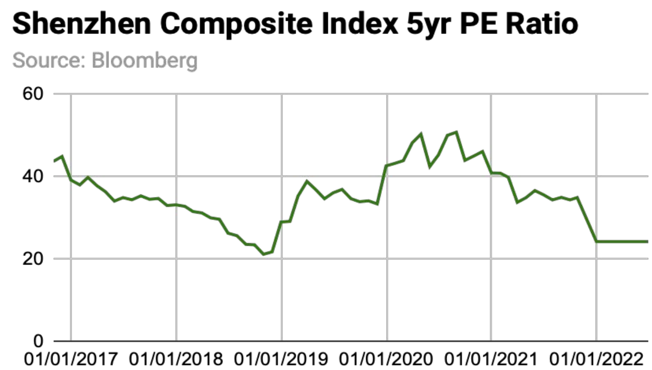
Furthermore, China's rapid response to the COVID-19 pandemic has aided the economy's recovery. China was the only major economy that reported economic growth in 2020. This can also be seen through the PMI trends in China. While both PMI dropped below 50 due to the pandemic, they have now recovered to an expansionary phase (see PMI graphs to the bottom left), as COVID-19 cases did not increase. The pandemic has actually led to an acceleration of China's e-commerce industry. E-commerce accounted for 42% of the retail sales in China in 2020 and is predicted to grow to 57% by 2025 as noted in the bottom right graph. BAM believes that this is one example of how innovation will drive future growth.







China Economic Outlook: Summary



In summary, we agree with the consensus forecast of moderate GDP growth post-pandemic despite current regulatory difficulties. While factors such as aging population and strong government intervention may initially hold back growth, the Chinese economic drivers of digitalization and the shift towards consumption will allow for a strong rebound and continued growth. BAM acknowledges the risk posed by the Chinese government's ability to correct the market at-will, however, we are confident in companies' abilities to prevail through these obstacles. In addition to growth, Chinese equities are relatively undervalued when compared to recent history (see P/E Ratio graph). This is partly due to the current concerns about government interventions and likely an indication of short-term market inefficiency. For these multiple reasons, BAM finds China to be an attractive investment.

South Korea Economic Outlook

South Korea

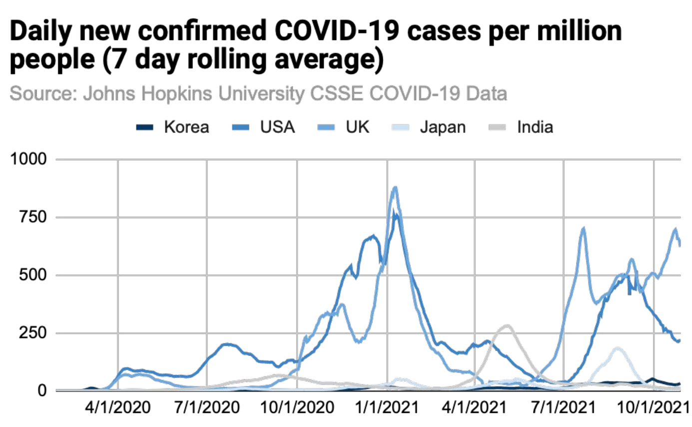
Consensus	2021E	2022E	2023E
GDP Growth Rate	4.1	3.1	2.7
CPI %	2.0	1.5	1.6
10 Year T-Note Yield	2.2	2.2	2.4
Unemployment Rate	3.2	3.9	3.7

Sources: Bloomberg, Intl. Monetary Fund, OECD

Last Updated: November 2, 2021

COVID-19 Response

The Republic of Korea represents the 4th largest economy in Asia and has continued a relatively strong and stable performance since the beginning of the COVID-19 pandemic. COVID-19 remains a much smaller problem in Korea when compared to many other developed contemporaries (see daily cases graph below). In order to avoid having high peak cases, Korea has implemented effective lockdowns, aggressive contact tracing, broad testing, and quick vaccinations. Overall Korea's policy has been effective in keeping the economy running smoothly and has been a tailwind to economic growth.



ECONOMIC PERFORMANCE

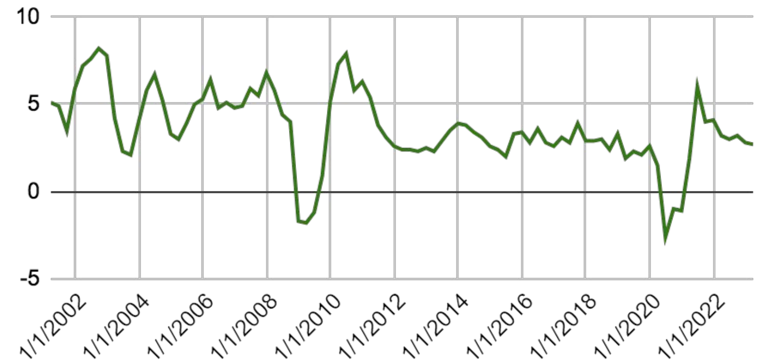
While there were some worries about a K-shaped recovery, in comparison to other developed economies, South Korea showed a smaller drop in overall Real GDP and a quick recovery contained within 2020 (see GDP graph to the right). As exports account for nearly 40% of nominal GDP, the export economy of Korea, which is strongly focused on semiconductor production and technology as a whole, has greatly benefitted from the continued global digital transformation (see Total Exports graph to the right). In addition, as China is the largest importer of South Korean goods, BAM also believes that Korea will benefit greatly from China's post-COVID-19 stability and growth. Due to these factors, an overall return to stable growth is expected as a result of positive COVID-19 trends and a sustained demand for high-tech goods.

GOVERNMENT INVOLVEMENT AND MARKET DIRECTION

Looking towards the future, BAM believes that the Korean economy is positioned very well to take advantage of future global market trends. The government plays a key role in this positioning. In order to take advantage of growing electronics demand, the South Korean government has passed a $450 billion stimulus to grow semiconductor production capacity, which is large in comparison to the $50 billion stimulus proposed by the U.S. government for the same purpose. Overall, the South Korean government stimulus has proven to be effective at maintaining its goals; unemployment has been kept low throughout the pandemic and economic growth has stabilized (see right).

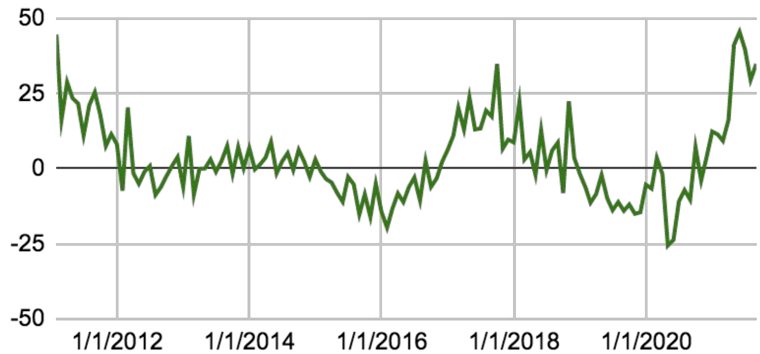
Real GDP (YoY% Quarterly)

Source: Bloomberg



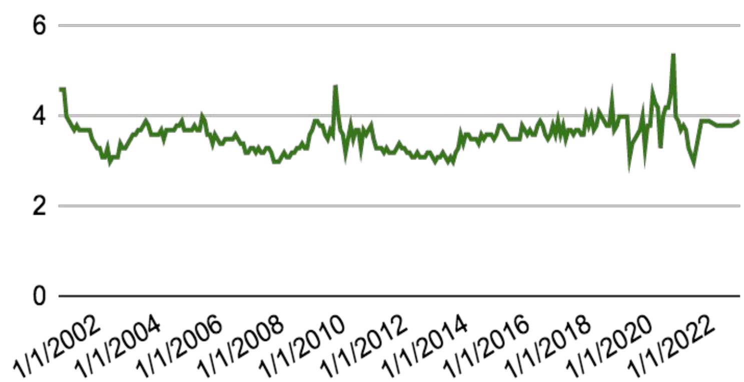
Total Exports (YoY% Monthly)

Source: Bloomberg



Unemployment Rate

Source: Bloomberg



South Korea Outlook: Summary

In conclusion, due to a strong COVID-19 response, effective government stimulus, benefits relating to China, and an economy primed to take advantage of current and future market trends, we believe that Korea is an attractive investment opportunity.

Japan Economic Outlook

Japan Economic Outlook

Consensus	2020	2021E	2022E
GDP Growth Rate	-4.7	2.6	2.7
CPI %	0.0	-0.2	0.6
10 Year T-Note Yield	0.02	0.1	0.1
Unemployment Rate	2.9	2.9	2.6

Sources: Bloomberg, Intl. Monetary Fund, European Commission

Last Updated: November 2, 2021

Japan has had trouble achieving growth and experienced a recession once COVID-19 hit. It is coming out of the recession but growth is relatively small and is just recovering to pre-pandemic levels. Similar to GDP, the country has struggled to achieve the stated goal of approximately 2% inflation, despite massive quantitative easing and zero to negative interest rates. While projections show a slight rise in inflation, we do not expect any significant changes. We believe that the biggest hurdles for Japanese economic growth are aging demographics and consumer hesitancy. With many older citizens leaving the workforce, there are not enough younger workers to replenish the labor shortage. Also, Japan's increased emphasis on career-oriented lifestyles have hindered people from settling down and forming families.

With the appointment of the new prime minister, Fumio Kishida, there is hope for an increase in Japan's growth through his new economic policies. Kishida mentioned an economic plan that is focused on distributing wealth more equally and narrowing the income gap between citizens. Therefore, this increased focus on wealth distribution could drive consumption which may positively affect economic growth, inflation, and interest rates. Despite this, these policies have yet to be tested and may not be realized for some time.

BAM believes that Japan is currently not an attractive investment due to the emerging demographic and cultural forces that will continue to limit its growth.

India Economic Outlook

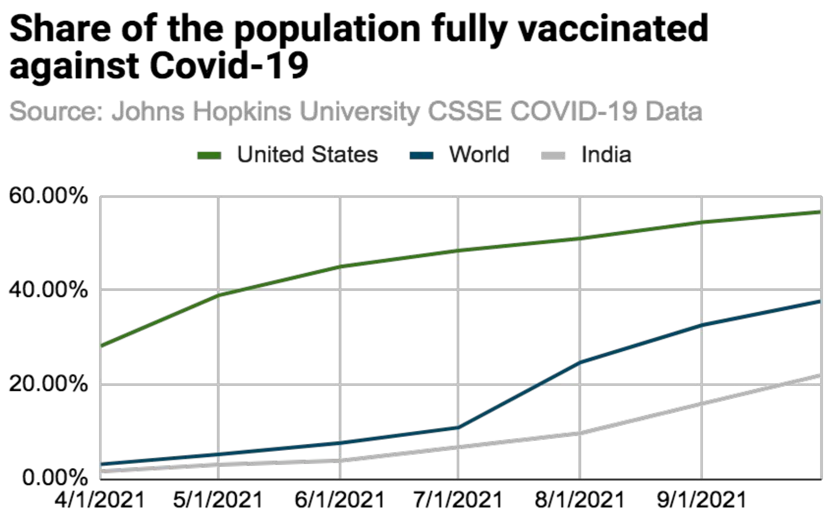
India Economic Outlook

Consensus	2020	2021E	2022E
GDP Growth Rate	-7.3	9.5	7.8
CPI %	6.2	5.3	5.0
10 Year T-Note Yield	5.9	6.3	7.5
Unemployment Rate	9.1	6.9	-

Sources: Bloomberg, Intl. Monetary Fund, OECD

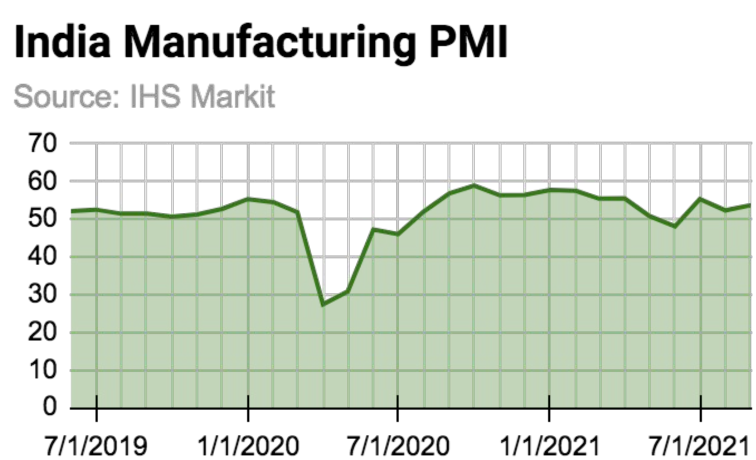
Last updated: November 2, 2021

India is one of the world's largest economies and in recent years has shown solid growth in the 6-7% range YoY. While India was significantly affected by COVID-19 in 2020, the economy started a robust recovery through the end of 2020 and early 2021. However, by mid-2021 poor management of COVID-19 was exposed when caseloads exploded throughout India. A major reason India has underperformed is due to the lack of a comprehensive vaccine rollout plan. India has currently only fully vaccinated around 22% of its population—one of the lowest rates in the world—which is hindering the economy's recovery (see vaccination graph below).



India has begun a transition away from agricultural work to expand into the services and manufacturing industries. Other than in June 2021, the IHS Markit India Manufacturing Purchasing Managers' Index has consistently reported readings above the 50 baseline since August 2020 (see chart below).

They have a population of over 1.36 billion people with a median age of 28 years old and only 115 million of the population is over 65. This means the majority of the population is in the working-class age group. Thus, in the long term, India offers strong demographic support for growth. However, poor COVID-19 management and earlier unilateral actions by the government (i.e. currency demonetization) lowers our confidence in the government's ability to execute well on recovery plans. As a result, we do not find India to be an attractive investment destination at the moment.



Capital Market Summary

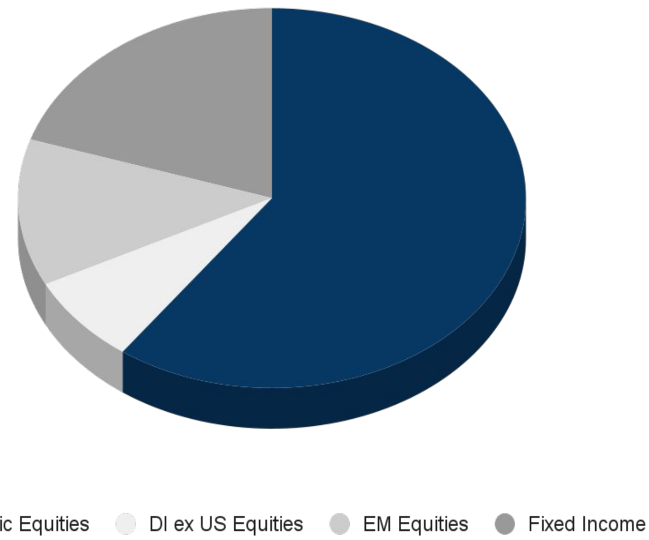
BAM's capital market outlook is informed by economic analysis, the Capital Asset Pricing Model (CAPM), and expected yield from fixed income. To apply CAPM, we define the market as the Russell 3000. We then employed an equity risk premium model developed by Professor Aswath Damodaran (NYU Stern). By combining the following inputs in the model, we arrive at the broad market expected return.

- Current level of Index (S&P 500, November 2, 2021): 4630.65
- Index Cash yield (dividends & buybacks): Average yield last 5 years = 4.21%
- Expected earnings growth rate for the next 5 years: Recovering Economy = 12.70%
- Current long-term risk-free rate: 10 Year T-bond = 1.56%
- Expected growth rate in the long term after year 5 = 2.50%
    - BAM factored in a higher long-term growth rate. We projected long-term growth to be higher than the ten-year Treasury bond consensus for 2022 (2%) given the continued pandemic recovery.

Using these assumptions, the model resulted in a 7.0% expected return on U.S. equities. The historical and expected returns for different asset classes are summarized below. It should be noted that expected future returns are significantly below historical levels of around 11% due to current valuations and the end of a 30-year trend of declining rates (see breakdown below). We believe using the expected future returns is more appropriate for decision-making based on our economic outlook and rising rates.

Asset Class Performance	Index	Expected Return	20 yr Historical Return	20 yr Standard Deviation	Expected Return Models & Assumptions
Domestic Equities	R3000	7.0%	11.0%	15.0%	Damodaran Model & High LT Growth
Developed Markets	M1EA	6.0%	7.9%	16.5%	CAPM
Emerging Markets	M1EF	5.8%	12.6%	20.7%	CAPM
U.S. Fixed Income	AGG	1.9%	4.4%	3.4%	YTM
Cash	T-Bill	0.2%	1.2%	0.4%	3 Month T-Bill

Asset Allocation



Our target asset allocation is 60% U.S. Equities, 12.5% Emerging Markets, 7.5% in Developed Markets, and 20% Fixed Income.

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.

Portfolio Optimizer Results

BAM Expected Returns

Metrics	Max Ret.	Min. St Dev	Max SR
Return	5.93%	4.24%	4.68%
Standard Deviation	12.63%	8.78%	9.01%
Sharpe Ratio	0.47	0.48	0.52
Allocations % U.S. / DI / EM / AGG / Cash	80/0/0/20/0	30/23/7/20/20	38/20/2/40/0

20-yr Historical

Metrics	Max Ret.	Min. St Dev	Max SR
Return	10.08%	7.40%	8.31%
Standard Deviation	12.92%	8.98%	9.08%
Sharpe Ratio	0.78	0.82	0.92
Allocations % U.S. / DI / EM / AGG / Cash	50/0/30/20/0	53/7/0/20/20	58/0/2/40/0

The tables above show the optimizers' target asset allocation for Maximized Returns, Minimized Standard Deviation (Risk), and Maximize Sharpe Ratio, respectively.

Using the BAM Expected Returns scenario, the minimum standard deviation scenario is eliminated because it has the lowest returns while the other two scenarios do not present a significantly larger risk. When choosing between the maximized returns and the maximized Sharpe scenarios, BAM considers the role of interest rates on fixed income. Interest rates are expected to rise, and given the higher bond allocation in the Max Sharpe scenario, the return gap between the two scenarios will expand (decrease in returns from fixed income) and the standard deviation gap will shrink (volatility of the bond market increases with rising rates). Together with our positive outlook on the economy, BAM proposes to implement the maximized return scenario with a tactical adjustment in diversifying some domestic equities to Emerging Markets and Developed International Markets.

Our final allocations are as follows:

BAM Portfolio

Metrics	Max Ret.
Return	6.0%
Standard Deviation	12.1%
Sharpe Ratio	0.49
Allocations % U.S. / DI / EM / AGG / Cash	60/7.5/12.5/20/0

BAM's new target asset allocation is 60 percent in Domestic Equity, 7.5 percent in Developed International, 12.5 percent in Emerging Markets, 20 percent in Fixed Income, and 0 percent in Cash. Within the Emerging Markets, we recommend avoiding investments in Brazil, India, Russia, Japan, and South Africa due to their less-attractive economic outlooks and unstable political environments. Instead, we focus our investments on China and South Korea. The decision to invest in these particular Emerging Markets builds upon our expectations of a strong economic outlook in these countries. Out of the 20 percent invested in foreign markets, half of it was invested in China due to their economic growth. An additional 2.5 percent is invested in South Korea. Furthermore, the European Union has shown solid GDP growth, higher vaccination rates, and supportive government policies for businesses (stronger willingness to spend on stimulus), which are the reasons why BAM is allocating 7.5 percent of the total portfolio to the EU. With this, BAM's target asset allocation stands to gain increased expected returns and portfolio diversification while mitigating risk.

Performance Goals

Our mission is to exceed the CFAOC benchmark in the coming year. Based on our economic and capital market outlooks, portfolio optimization, and securities selection, we expect our portfolio to return 6.0% with a standard deviation of 12.1%. 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	6.0%	5.3%
Standard Deviation	12.1%	12.1%

Our portfolio will follow the CFAOC benchmark of 50% in Russell 3000 Index, 20% in MSCI All Country World excluding U.S. Index, and 30% in Bloomberg Barclays U.S. Aggregate Bond Index.

Fixed Income

	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 fixed-income investments are based on two current realities. First, current interest rates are near zero and second, rates are expected to rise. This means that achieving income in fixed income is a challenge and conservation of principle is critical. Given this, the team's fixed income approach focuses on three goals:

- Preservation of capital
- Protection against an economic downturn
- Generation of income with manageable risk

Although cash equivalents are the safest option and promise capital preservation, BAM did not allocate any investments to cash at this time due to near-zero yield. With the current markets, we were also hesitant to invest in foreign debt because developed markets have lower yields than the U.S. and emerging markets carry significant currency and credit risk, especially given our forecast of a strengthening dollar.

As a result, we allocated half of fixed income into U.S. 7-10 year Treasuries to provide capital preservation and a hedge against economic downturns. We chose the iShares 7-10 Year Treasury Bond ETF (IEF) due to its low expense ratio and intermediate duration of 8.1. Secondly, we invest the remaining half of fixed income into an actively managed senior loan fund for a higher yield with protection against rising rates. We chose a senior loan fund over high yield bonds due to the shorter duration, floating rates, and senior position of such loans in the capital structure. Additionally, we prefer actively managed funds as credit analysis is the most critical factor in any high yield investment and we want to leverage the fund's research capabilities. Finally, we chose the First Trust Senior Loan Fund ETF (FTSL) for its higher yield, higher historical returns, and better credit quality relative to an equivalent passive ETF. Additionally with our strong U.S. economic outlook, default risk is also limited. Key metrics for these two funds are shown below:

	iShares 7-10 Year Treasury ETF (IEF)	First Trust Senior Loan Fund (FTSL)
Assets Under Management	$14.3B	$2.85B
Duration	8.13	.94
YTM	1.51	4.27
Expense Ratio	.15	.86
Credit Quality	AAA	B+/B
5 Year Return (Annualized)	2.51%	3.65%

	Maximum (years)	Minimum (years)	Average (years)
Maturity	10	1	6.70
Duration	8.13	0.94	4.54

TARGET FIXED ASSET ALLOCATION

We are not allocating a percentage of our fixed-income portfolio to a specific sector or industry because of the additional risk that is associated with such allocations. Instead, we have decided to invest the fixed income section of our portfolio into iShares 7-10 year U.S. Treasuries Bond ETF, as well as a senior loan fund, split equally. We believe that these allocations appropriately expose our portfolio to a variety of sectors and industries.

Passive vs. Active Management

BAM has adopted an active management approach driven by rigorous domestic and international economic analysis and fundamental research of all securities included in our portfolio. However, we choose to invest in ETFs in seven sectors (Energy, Industrials, Materials, Real Estate, Utilities, Consumer Staples, Communication). Individually, these sectors make up less than 10% of our equity portfolio. We also invest in ETFs and mutual funds for Fixed Income and International investments. ETFs 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 markets are efficient in the long-term with some short-term inefficiencies that provide opportunities. Using a Top-Down approach, we will position our portfolio to capitalize on those opportunities while balancing risk and reward to capture additional value for our clients. Our extensive research and active analytical processes were key to identifying these existing inefficiencies to better our investment decisions. Based on academic research and our own findings, we have decided to employ a value strategy, but within value we look for 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 to build long-term wealth for our clients. We rely on in-depth research to justify all investment decisions. We do not follow or implement any quantitative or technical strategies as these are inconsistent with our investment philosophy. However, a quantitative security screening tool was used to assist in identifying securities that may outperform. The screening metrics we use are as follows:

- Country of Domicile U.S.
- Market Cap ≥ $1billion
- GICs sector
- Price-to-Book (lower is better)
- Price-to-Free Cash Flow (Price-to-Book for Financials)
- Price/Earnings-to-Growth (PEG) (lower is better)
- Gross Profit to Enterprise Value (Relative to Sector)
- Return on Assets (higher is better)
- Revenue Growth (5-year historical 2015-2019, and 2022 vs 2021 growth)
- EPS Growth (5-year historical 2015-2019, and 2022 vs 2021 growth)
- Debt/Equity (lower is better)

Due to the abnormal conditions created by COVID-19, BAM felt it appropriate to exclude the year 2020 when looking at data. BAM utilized 2015 to 2019 historical metrics as a baseline for normal business operation. When comparing forward-looking data, BAM used 2021 vs 2022 expectations to identify companies that are successfully recovering from the pandemic.

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

Although there are no set criteria to invest in large, mid, or small-cap companies, the BAM team does have a bias towards large-cap equities when presented with two equal opportunities. This is based on our research that showed while small-caps value premium has recovered, large-cap value premium has not yet recovered (See Value vs. Growth section).

International vs. U.S.

Staying true to our main goal of maximizing risk-adjusted returns for our clients, we have focused on maximizing the portfolio's return while minimizing risk. To make this determination where domestic and international securities are concerned, the team analyzed historical performance and volatility of the MSCI Emerging Markets Index, MSCI Developed International Markets Index, and the Russell 3000 Index when performing strategic asset allocation.

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

	Average Return	Standard Deviation
Russell 3000	**11.0%**	**15.0%**
MSCI Developing Markets	**7.9%**	**16.5%**
MSCI Emerging Markets	**12.6%**	**20.7%**

The economic impact from COVID-19 on the United States is starting to diminish and we believe that the economy is now coming out of recovery. However, the longer-term growth will be relatively mild once the economy fully recovers by 2022. As a result, we looked for higher returns internationally and decided to invest 20% of the portfolio into specific emerging and developed markets.

The 20% allocation to emerging and developed markets is focused on China, South Korea, and the European Union. These are seen as the regions with the best growth opportunities for the foreseeable future. This is driven by support from earnings growth, equity valuations, as well as COVID-19 immunizations. In regards to China's political influence on the market, we do have some concerns about government transparency and government-supported companies. For these reasons, our investments do not include companies that are owned by the Chinese government, but rather focus on non-state-owned enterprises.

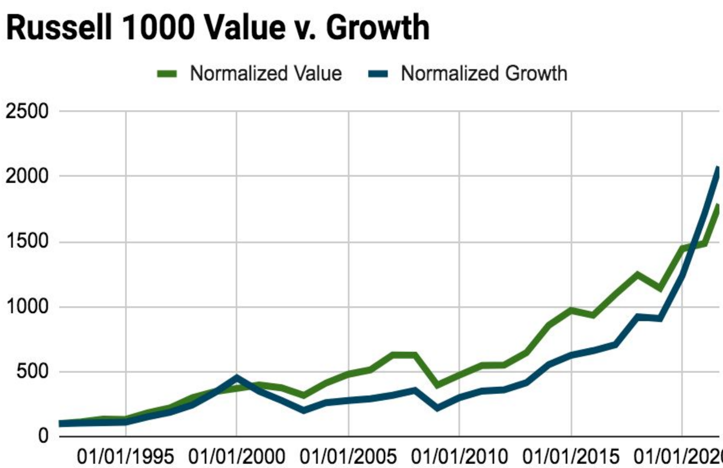
Market Timing vs Sector Rotation vs Long-term Hold & Buy

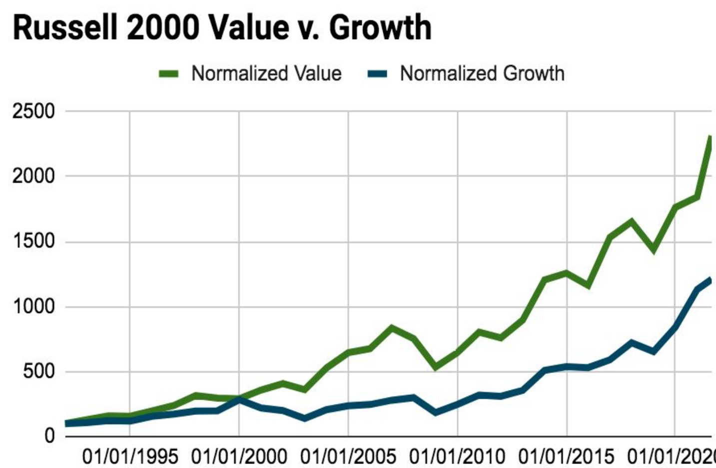
BAM does not believe in short-term market timing. Rather, we do believe, given the current structure of the economy, that various sectors will perform differently in terms of the next few years. According to our economic analysis, we come to the conclusion that the U.S. economy is currently in an early recovery phase. Our team of analysts reviewed each of the eleven sectors and how they will perform. We utilized this research to inform our over and underweighting of each sector. Additionally, we examined how COVID-19 will likely have a lasting positive impact on the Healthcare and Communication Services sectors. Also, we view Energy will be adversely impacted by the uncertainty caused by a societal transition to renewables. A similar process was followed for each sector. In the table below, we have outlined the true sector weights of the Russell 3000, our team's recommended sector allocations and reasoning.

Sector Allocations	R3000 Weight	BAM	Reasoning
Information Technology	26.9%	25.9%	The reduction in our allocation is based on our expectations of the sector valuations to normalize.
Healthcare	13.5%	14.5%	Due to its greater societal awareness and stifled demand for elective surgeries, we feel an increased allocation is appropriate.
Consumer Discretionary	12.3%	13.3%	Increase in household savings and pent up demand during COVID-19 lockdowns.
Financials	11.9%	12.4%	With a forecasted rise in interest rates and spreads increasing, we expect an improved performance.
Communication	10.0%	10.0%	Likely increase due to the implementation of 5G networks and people working from home.
Industrials	9.1%	9.1%	Increase government spending on infrastructure projects.
Consumer Staples	5.3%	4.8%	Decreased due to reduced pandemic buying.
Real Estate	3.4%	3.4%	While we expect the commercial sector to bounce back, we do not expect the overall Real Estate demands to fully recover.
Utilities	2.4%	1.9%	Rising rates are negative for this sector
Materials	2.4%	2.4%	A greener policy tilt for the U.S. could drive demand for a variety of basic commodities
Energy	2.8%	2.3%	Due to a decreasing dependency on oil and a transition towards renewable energy, we feel a decreased allocation is appropriate.
Total	100%	100%	

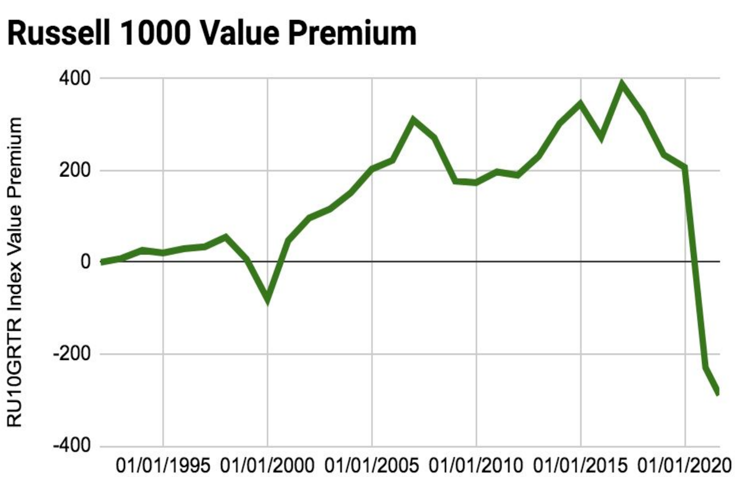
Value vs. Growth

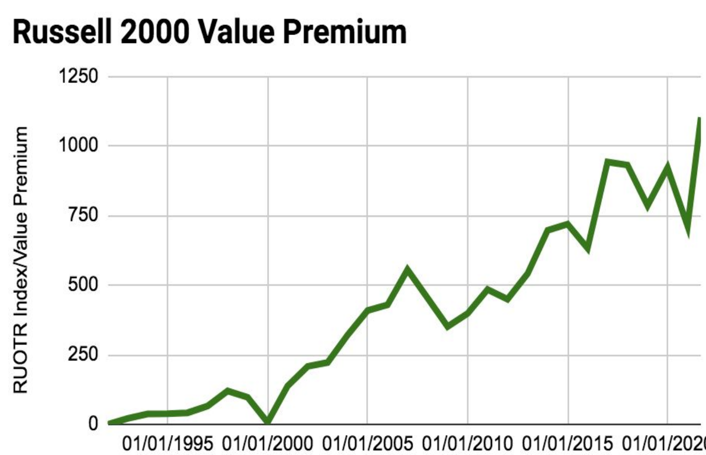
To determine our preference between the value or growth-oriented strategy, BAM analyzed the value and growth total returns for both large market capitalization and small market capitalization equities, represented by the Russell 1000 and Russell 2000 indices, respectively (see graphs below).





Over the past 30 years, value has clearly outperformed growth in small caps as shown by the Russell 2000 graph above. However, in the Russell 1000 index, growth has outperformed value only recently. We analyzed this in further detail using data from Bloomberg. The plots below graph the Value Premium (Value - Growth returns) for both large and small caps. We see that value outperforms but that the value premium has only recently become negative in large caps, indicating growth returns outperforming value returns.





We believe this recent shift is due to four factors:

1) lower interest rates

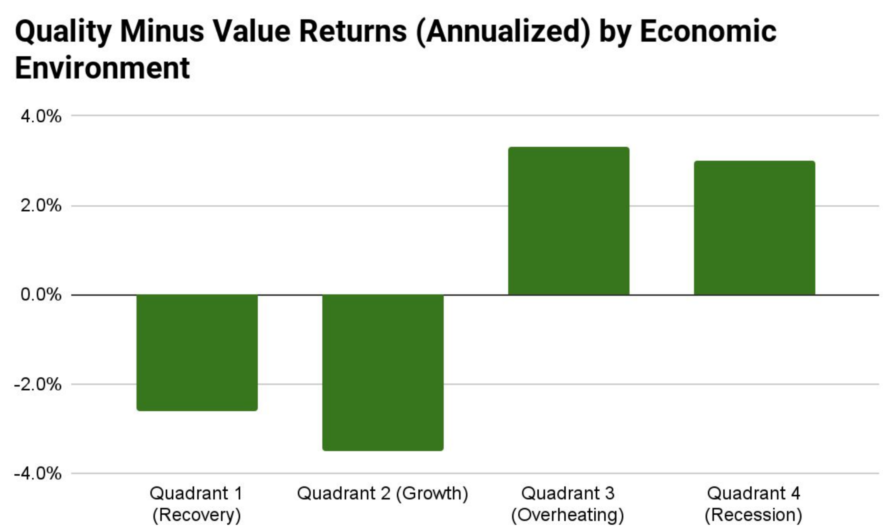
2) the structural shift to more virtual activities

3) market psychology - momentum investing in growth sectors

4) the recent anomaly of unusually high returns in growth stocks

Looking forward, we believe these factors will reverse, as rates are rising, lockdowns are ending, high valuations are raising questions about growth stocks, and value companies tend to be more economically sensitive.

Our preference for value over growth is further supported by significant academic research (see Research). Israel, Laursen, and Richardson's research paper shows that value is still relevant and fundamental information has continued importance in the determination of stock returns across developed and emerging markets. The paper also acknowledges how a risk-balanced combination of value and other strategies is a powerful diversifier. BAM utilizes this paper to form the foundation of our emphasis on value investing. In addition, a paper written by Obenshain as a follow-up to Novy-Marx shows that Value could further separate into "Quality" and "Value". The definition of Value is Gross Profit over Enterprise Value (a valuation metric), and the definition of Quality is Gross Profit over Total Assets (a profitability metric). Both Value and Growth delivered different returns during different stages of the economic cycle. BAM utilizes this research and decided that we are in the early-mid stage of growth, therefore Value outperforms Quality (see graph below). Additionally, BAM decided to also factor in growth to avoid value traps, where the companies are inexpensively valued yet have little promise of gaining a competitive edge in the market. Based on prominent academic research papers and BAM's economic outlook, we have made a conscious decision to follow the VARG strategy.



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 starts with our screening process using the criteria discussed earlier. Within the screened stocks, 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. These reports help BAM understand each company's competitive position in their respective markets. To evaluate the intrinsic value of a company, we use Discounted Cash Flow (DCF) and Dividend Growth (DGM) valuation models.

Market Capitalization and Liquidity

As per compliance measures, 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 (lower is better) (Price-to-Book for Financials)
- Price/Earnings-to-Growth (lower is better) (PEG)
- Gross Profit to Enterprise Value (Relative to Sector)
- Return on Assets (higher is better)
- Revenue Growth (5-year historical 2015-2019, and 2022 vs 2021 growth)
- EPS Growth (5-year historical 2015-2019, and 2022 vs 2021 growth)
- Debt/ Equity (lower is better)

The components listed above were specifically crafted for the VARG strategy (See Value v. Growth). Price-to-book (P/B) is used to differentiate between value and growth. The Price-to-Cash Flow (P/CF) ratio is a newer component we decided to add to our strategy. While Price-to-Book is supportive of the data analysis done by BAM, over time it is not as critical toward the economy as it was in the past and thus we believe P/CF would be beneficial as an additional value metric. The PEG ratio is used to balance value and growth. We saw it as the first important metric to begin the screening-process transition to growth.

While most of the above growth factors are well known, the Gross Profit-to-Enterprise value ratio requires further justification. Gross profitability, defined as a company's gross profits (total revenues less cost of goods sold) to its assets, is a measure utilized to identify firms with more highly productive assets. Through research detailed in Novy-Marx' paper "The Other Side of Value: The Gross Profitability Premium," it was found that investments based on this profitability strategy generate significant excess returns. As a follow-up to Novy Marx, Obenshain broke value into two subcategories: Quality and Value with the conclusion that Value (GP/EV) outperforms Quality (GP/Assets) during the first half of an economic cycle. Based on this research, we have added GP to EV as a screening criterion. 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 the D/E ratio to identify firms that are not overly leveraged.

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 but likely shift our asset and sector allocations.

Equity Diversification Guidelines

Our asset allocation is diversified through 60% in Domestic Equities, 7.5% in Developed markets, 12.5% in Emerging Markets, and 20% in fixed income. Further diversification is achieved by investing in all eleven sectors of domestic equities. Our allocation by sector is listed above (See Equity Selection and Valuation). These 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 influenced by research done by Fidelity (The Business Cycle Approach to Equity Sector Investing). As mentioned earlier, sectors with less than a 10% 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 are geographically diversifying through investments in developed and emerging markets. However, we are excluding India and Japan due to political instability, lack of clarity on the COVID-19 resolution, and poor economic growth out of the pandemic. As a result, our 20% emerging and developed market allocation is focused on China, South Korea, and the EU. This is based on their strong economic outlook. We invest in these markets through broad ETFs in each country and region.

AVERAGE PERCENT INVESTED

Our sector allocation is listed in the table below. Each stock is equally weighted within each sector. On average there is a 2.3% 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	25.9%	10	2.59%
Healthcare	14.5%	5	2.90%
Financials	12.4%	5	2.48%
Consumer Discretionary	13.3%	5	2.66%
Communication	10.0%	ETF	
Industrials	9.1%	ETF	
Consumer Staples	4.8%	ETF	
Materials	2.4%	ETF	
Real Estate	3.4%	ETF	
Energy	2.3%	ETF	
Utilities	1.9%	ETF	
Total	100.00%		

Emerging Market Portfolio	BAM	Number of Stocks	Ticker
China	80.00%	ETF	CXSE
South Korea	20.00%	ETF	EWY
Total	100.00%		

Developed Market Portfolio	BAM	Number of Stocks	Ticker
European Union	100.00%	ETF	VGK
Total	100.00%		

Equity Portions		
BAM Portfolio	vs	Russell and ACWI
1.03	Beta	0.94
132 billion	Weighted Average Market Cap	415 billion
21.23	FWD P/E	20.10
4.65	P/B	3.82
34.64%	EPS Growth 1YR (22 vs 21)	23.44%
1.39%	Dividend Yield	1.61%

	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	

NUMBER OF STOCKS AND FUNDS IN THE PORTFOLIO

We will diversify our domestic equity portfolio by investing in 25 different equities and 7 broad sector ETFs across 11 sectors. Our international market portfolio is diversified via investing in 3 different markets (China, South Korea, EU) through broad ETFs. The specific number of securities per sector/country are listed in the tables below:

	# of ETFs	# of Securities
U.S.	**7**	**25**
China	**1**	**0**
South Korea	**1**	**0**
EU	**1**	**0**

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 rebalancings.

Risk

We view risk through four different perspectives:

1. Weekly review of Macro and Idiosyncratic risks
2. Tracking BAM Portfolio Performance versus CFAOC Blended Benchmark
3. Analyzing Portfolio Return Attribution
4. Monitoring Portfolio Metrics such as standard deviation, Sharpe ratio, and information ratio.

Performance Monitoring

We manage the portfolio risk by using diversification. This takes place in our diversified ETFs across seven sectors and individual stocks in 4 sectors. We achieve geographic diversification via investments in emerging and developed markets. Our portfolio also places investments in fixed income assets such as Treasury Bond ETFs and Senior loans as a way to conserve capital.

Our process to monitor risk includes weekly monitoring of portfolio performance as a critical risk management tool. One key aspect of this is we focus each week on identifying any security underperforming compared to its sector. Management also sets bounds of lagging securities to both relative sector performance and unrealized loss constraints. If securities continue to lag against the overall sector or have consistent week-over-week losses, a security review will be conducted and presented for action.

Our portfolio beta is 1.03.

Sell Discipline

To manage risk, the BAM team monitors performance on a weekly basis and follows the sell discipline described below:

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 the criteria are not met, 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.

ETF Selection

The selection process is explained below.

Equity

The domestic equity portion is allocated among eleven sectors. Each sectors weighting relative to the benchmark is determined by BAM's future economic outlook. (See Market Timing vs Sector Rotation vs Long-term Hold & Buy) It was decided that sectors that accounted for less than 10% of domestic equity would be represented by passive ETFs for less exposure to additional idiosyncratic risk associated with individual securities in a small portfolio. Based on Israel, et al. (see Research), historically, equal-weighted portfolios have outperformed market-weighted portfolios. Therefore, BAM decided to use an equal-weighted approach while utilizing more market-cap-weighted sector ETFs. 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 large 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 33.9% of the domestic equity allocation in ETFs across seven sectors.

Emerging and Developed Markets

BAM's decision to focus its emerging market allocation on China and Chinese-related economies stems from greater forecasted growth opportunities. BAM's emerging market ETF screening sought a market cap greater than $1 billion. When looking for an ETF to fulfill our China allocation, we filtered out ETFs that had a high percentage of state-owned company holdings as these firms are less profit-motivated and more politically influenced. BAM decided to consider the number of holdings, total AUM, YTD return, expense ratio, and Sharpe ratio in our evaluation of EM funds. Following this analysis, BAM decided the Wisdom Tree China Ex-State Owned Enterprises Fund (CXSE) was the best fit for our 10% allocation to China. In analyzing potential South Korean funds, BAM narrowed the selection down to three options in an ETF: an actively managed mutual fund, an passively managed ETF, and an actively managed closed-end fund. First, we decided to eliminate the closed-end fund due to its low trading volume and potential liquidity risk. As part of our analytical process, we have a strong preference for ETFs and Funds that represent their broad markets with a high number of diversified holdings. The actively managed fund did not meet these standards and was not chosen for our selection. As a result of all the previous information, BAM chose iShares MSCI South Korea ETF (EWY) for our 2.5% of South Korea equity allocation. For our EU allocation, using identical screener metrics as our emerging markets selection, BAM opted to choose an ETF that tracks developed countries within Europe rather than other ETF offerings which track both developed countries and frontier markets in Europe. Therefore, BAM decided Vanguard FTSE Europe ETF (VGK) was the best choice for our 7.5% allocation in the EU.

Fixed Income

For BAM's fixed income allocation, our investments would be limited to ETFs rather than individual bonds, because individual fixed income security purchases are not allowed per CFAOC guidelines and research into individual fixed-income security (specifically corporate) is too resource-intensive to make appropriate selections for our portfolio. BAM first analyzed the historical performance of each fixed income subclass. Given potential equity downside risk and BAM's higher than expected inflation projection, we sought to balance downside protection with floating rate exposure in fixed income. (See Fixed Income) From there, BAM analyzed ETFs based on different fixed income metrics such as effective duration, credit quality, and yield-to-maturity. Considering these metrics along with BAM's outlook on rising interest rates, we examined the duration exposure as well as efficacy in hedging equity volatility through the framework of our three goals in fixed income: preservation of capital, protection against economic downturn, and generation of income with manageable risk. To provide preservation of capital and protection against economic downturn, intermediate-term Treasuries were chosen as BAM believes they provide the best option for hedging our portfolio without taking on excessive interest rate risk. In order to meet the goal of generation of income with manageable risk, BAM analyzed emerging market bond ETFs, high yield bond ETFs, and senior loan funds. BAM eliminated emerging market fixed income ETFs due to their negative sensitivity to rising interest rates. High-yield fixed-income ETFs were also not attractive due to their option adjusted spreads being near an all-time low. BAM views senior loans as an attractive investment option because of its yield relative to lower risk as a result of their senior position in the capital structure, floating interest rates, and higher credit ratings. As a result, 10% allocation to IEF and 10% to FTSL were chosen because they provided the best balance of our fixed income goals of capital preservation, protection against an economic downturn, and marginal yield relative to risk.

Sell Discipline - Mutual Funds and ETFs

We plan to track the performance of selected ETFs versus their stated benchmarks and will sell any ETF 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 start our portfolio 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 Dr. Damodaran's Equity Risk Premium model, the CAPM, and our economic analysis. 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 blended mix between Maximized Return and Maximized Sharpe Ratio. This aligns with our investment philosophy of balancing risk and return. Our target asset allocation is 60 percent domestic equity, 20 percent international equity (10 percent in China, 2.5 percent in South Korea, and 7.5 percent in EU), and 20 percent fixed income. Each of these asset classes is discussed below.

Domestic Equities

The domestic equity portion is allocated among eleven sectors. Each sector's overweight and underweighting is based on future outlook. It was decided that sectors that represented less than 10% of domestic equity would be represented by ETFs. These sectors were Communication, Consumer Staples, Industrial, Real Estate, Utilities, Materials, and Energy. Together, these ETFs make up approximately 33.9% of the domestic equity allocation. The remaining Health Care, Consumer Discretionary, Tech, and Financial sector allocations were then to be divided into individual securities.

The Fundamental screening criteria (See Fundamental Factors) were used to find potentially attractive securities in sectors where we did not choose ETFs. A detailed analysis of the screened securities using BAM's valuation criteria (including DCF and DGM models) was used to make 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 seven sector ETFs and twenty-five individual stocks.

International Markets

In an effort to reduce risk and capture the overall market performance, BAM decided to invest in international markets through ETFs. After analyzing which countries offered the highest potential for growth and future performance, it was decided that China, South Korea, and the European Union would offer the greatest investment opportunity. We decided to invest half of our international allocation in China, and the remaining half split 25% to South Korea and 75% to Europe. One broad ETF was chosen to represent the market for each country. For the China ETF, we focused on avoiding Government Sponsored Enterprises (GSE) as we believe these companies are less transparent and less profit-driven. As a result, BAM chose WisdomTree Trust China ex State Owned Enterprises Fund (CXSE). For the EU, we chose an ETF that tracked the developed countries in Europe. For South Korea, BAM chose the broad iShares MSCI South Korea ETF.

Fixed Income

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

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

Portfolio Construction					
Type	Bloomberg Function	YTM	Effective Duration	Standard Deviation	Credit Quality
Short-Term Treasury	LT12TRUU	0.08	0.4	0.3289%	AAA
Intermediate Treasury	LT08TRUU	0.93	4.03	2.41%	AAA
Long-Term Treasury	LUTLTRUU	1.95	18.57	3.38%	AAA
Short-Term Corporate	I01092US	1.1	0.82	0.40%	A3/BAA1
Long-Term Corporate	LD07TRUU	3.08	15.21	2.83%	A3/BAA1
Corporate Intermediate	LD06TRUU	1.73	4.51	1.16%	A3/BAA1
Corporate Aggregate	LBUSTRUU	1.68	6.75	0.95%	AA1/AA2
High Yield	LF98TRUU	4.79	3.98	2.10%	BA3/B1
Preferred Stock (15y Data)	SPTREFTR	4.16	3.06	2.68%	-

Our allocation decisions were based on three main goals that we believe balance well with the equity and emerging markets portion of our portfolio:

1. Capital preservation
2. Protection against further economic downturn
3. Generation of income with manageable risk

For our capital preservation goal, we filtered out preferred stock and high yield bonds due to their equity-like volatility. Given the nature of these investments, preferred stocks and high yield bonds are much more dependent on a company's operating performance relative to high-quality investment-grade bonds. As a result, these investments have characteristics that are a mixture of bonds and equity. Because BAM already has a high allocation to equity, it was decided to avoid these assets in our fixed income portfolio.

Given BAM's positive economic outlook, we believe that our fixed income allocation will benefit from a lower default rate and protection from rising interest rates. The table above has shown the effective duration for each fixed income sub-asset class. Longer-term fixed income investment will have more negative exposure to rising interest rates than shorter-term investment. However, higher duration could provide more hedge against potential economic downturns. Given our positive economic outlook while still acknowledging the risk, BAM decided to invest in an intermediate-term Treasury, iShares 7-10 year Treasury Bond ETF, to provide preservation of capital and protection.

To gain some yield given the rising rates environment, we determined that we would need to allocate a portion of the portfolio to senior loans. Our research focused on investments with active management, floating interest rates and the senior position in the capital structure. As a result, BAM made a conscious decision to invest in the First Trust Senior Loan Fund.

Pricing and Stop-loss Monitoring

Our team will keep track of the CFAOC portfolio positions in both a shared Excel spreadsheet on Google Drive as well as utilizing the Portfolio Management (PORT) function on the Bloomberg Terminal. The PORT function will allow us to frequently monitor portfolio attribution, total return performance, and risk metrics against the benchmark. These results will be analyzed weekly during the academic calendar, and every other week during non-academic sessions. Each meeting will be a combination of in-person and virtual until social distancing guidelines are relaxed. Stop-loss levels will also be monitored weekly. Any security that hits or comes close will be proactively reviewed and will thus be identified during these meetings and a process to find replacements or reconfirm our belief in the security will be initiated 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. We act according to the CFAOC and BAM policies and guidelines, which are monitored by the Chief Compliance Officer. Furthermore, all decisions must be approved by the Managing Director, and all trades are executed by the Trader. Faculty Advisors are copied on all trade proposals and have veto power on decisions.

Rebalancing

The portfolio will be rebalanced quarterly if economic conditions, sector weights, or individual security weights have deviated significantly. Otherwise, BAM will rebalance annually to maximize time, cost-efficiency, and minimize execution risk.

The BAM team utilized prominent academic 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.

The following are papers that BAM has added to its research pool in order to inform its investment decisions:

- "How Does Quality Work?" by Obenshain of Verdad Capital. October 4, 2021.
- "Is (systematic) value investing dead?" by Ronen Israel, Kristoffer Laursen, Scott Richardson. March 14, 2020.
- "What explains the decline in r*? Rising income inequality versus demographic shifts" by Atif Mian, Ludwig Straub, Amir Sufi. August, 2021.
- "Value Judgments: Viewing the Premium's Performance Through History's Lens" by Dimensional Advisors. October 24, 2019.

The Obenshain paper is a follow-up to Novy-Marx' paper "The Other Side of Value: The Gross Profitability Premium," which BAM has used previously. Obenshain shows that similar to Novy-Marx, value does outperform growth. He further shows that different types of value perform differently at various points of the economic cycle. Obenshain separates value into "Quality" and "Value." The definition of Value is Gross Profit over Enterprise Value, and the definition of Quality is Gross Profit over Total Assets. The key conclusion that BAM utilizes is that in the early stages of entering a sustainable growth period, Value outperforms Quality.

Israel, Laursen, and Richardson show again that Value does outperform Growth with a further refinement that equal weight portfolios outperform valuation weighted portfolios. BAM utilizes this paper as confirmation of its VARG strategy and equal-weighting within the actively managed sectors.

Mian, Straub, and Sufi explain why interest rates are currently extremely low. The main takeaway is that the benefit of economic growth has accrued mostly to higher-income individuals. Further, since these individuals are relatively less likely to spend, they accumulate excess savings. As a result, there are more savings chasing safe investment opportunities, leading to a lower rate of returns from these investments. BAM utilizes this paper as support for our view that while rates will be higher than the consensus over the next year or two, we do not see rates going substantially higher beyond 2023 as we believe income inequality will continue.

The industry research by Dimensional Fund Advisors concludes that over time value has outperformed growth but more recently growth has significantly exceeded its historical returns. They view this as an anomaly and believe that value will regain its lead. BAM aligns this research with our VARG investment strategy.

BAM also continues to use the following papers that we have mentioned in prior reports:

- "The Other Side of Value: The Gross Profitability Premium" by Novy-Marx. June, 2012.
- "Corporate Governance And Equity Prices" by Gompers, Ishi, and Metrick. September 12, 2001.
- "The Business Cycle Approach to Equity Sector Investing" Fidelity Investments research. June 14, 2021.

Novy-Marx shows that value does indeed outperform growth and thus forms a foundational basis for BAM's VARG strategy. The Gompers, Ishi, and Metrick's paper was used as a basis for BAM's own research into governance with the conclusion that better governance leads to higher returns. The Fidelity research shows 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.

Finally, we used academic research "The Cross-Section of Expected Stock Returns" by Fama/French and "Where is the Value Premium" by Ludovic Phalippou to research and support our equity strategy of Value and Reasonable Growth (VARG).

BAM obtains most of the data from the Bloomberg terminal. This is supplemented with data, industry research, and commentary from Financial Times, International Monetary Fund, World Bank, the Federal Reserve, the EU Commission, Wall Street Journal, Morningstar, Factset, and Fidelity. BAM also uses Bloomberg for Equity Screening and the PORT function for portfolio performance analysis.

Unique Approaches to Information

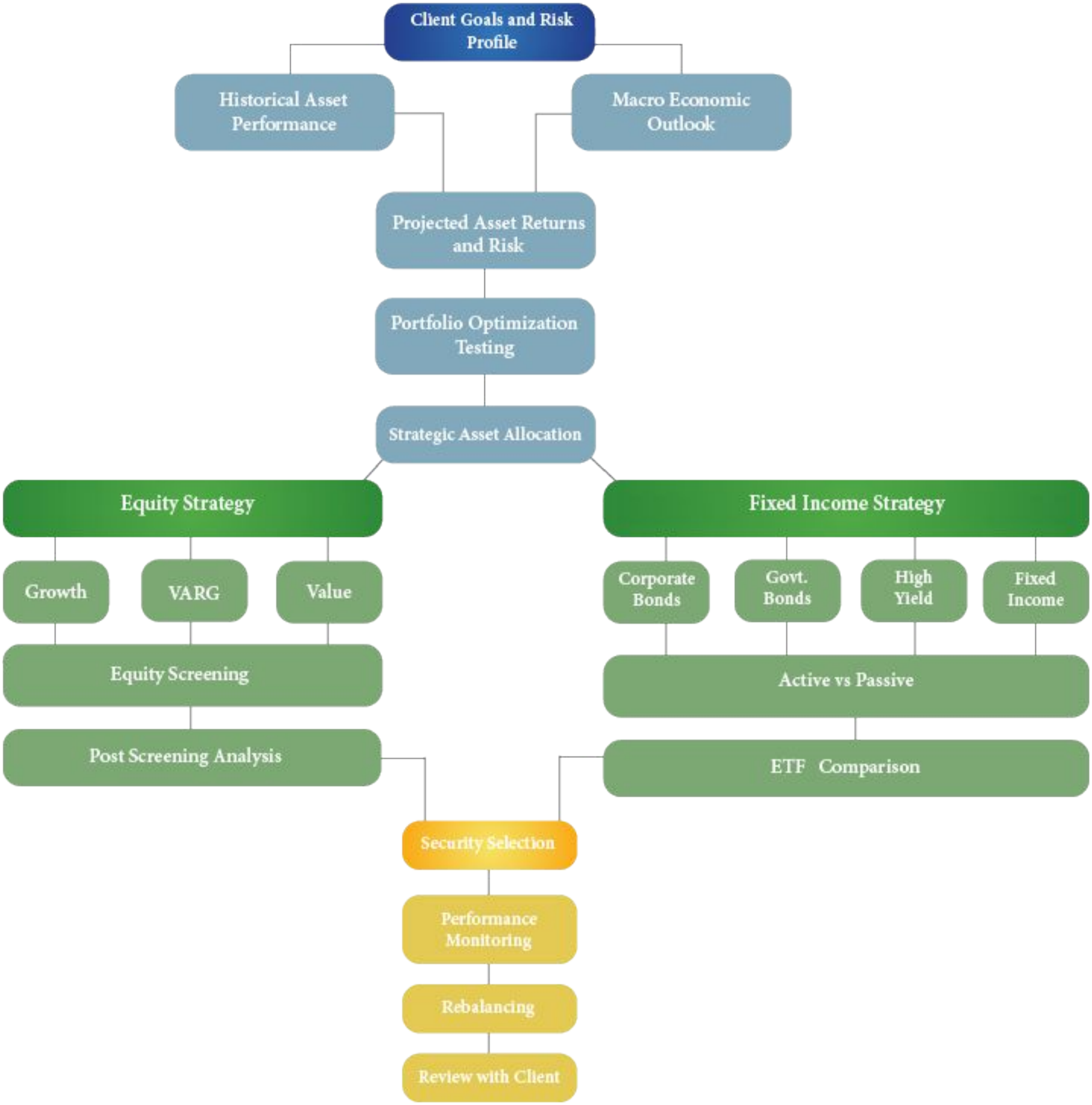
Along with the fundamental and quantitative analysis, our team has adopted the BAM 13 analytical framework to establish a consistent security review across all companies resulting from our screener. Broadly, the BAM 13 assesses historical and future growth, operational efficiency, and company governance. Adopting the BAM 13, we believe will allow us to select stronger, more sustainable, and better-managed companies.

The focus of BAM 13 is looking at a company that is growing, managed efficiently, has relatively good value, and is run for shareholder benefit. We use the 13 criteria listed below. Criteria 1-3 focus on companies that grow top and bottom line while leveraging top line for faster bottom line growth. Criteria 4-5 target companies in a growth industry and investing in future growth. Criteria 6-9 look at the company's stability, historical efficiency, and stable to conservative debt management. For this year, we are including criteria 10 to look at the company's supply chain stability during COVID-19. Criteria 11 looks at management's convictions in the company. Criteria 12 seeks to identify companies with good value while 13 identifies companies that are well managed for its owners.

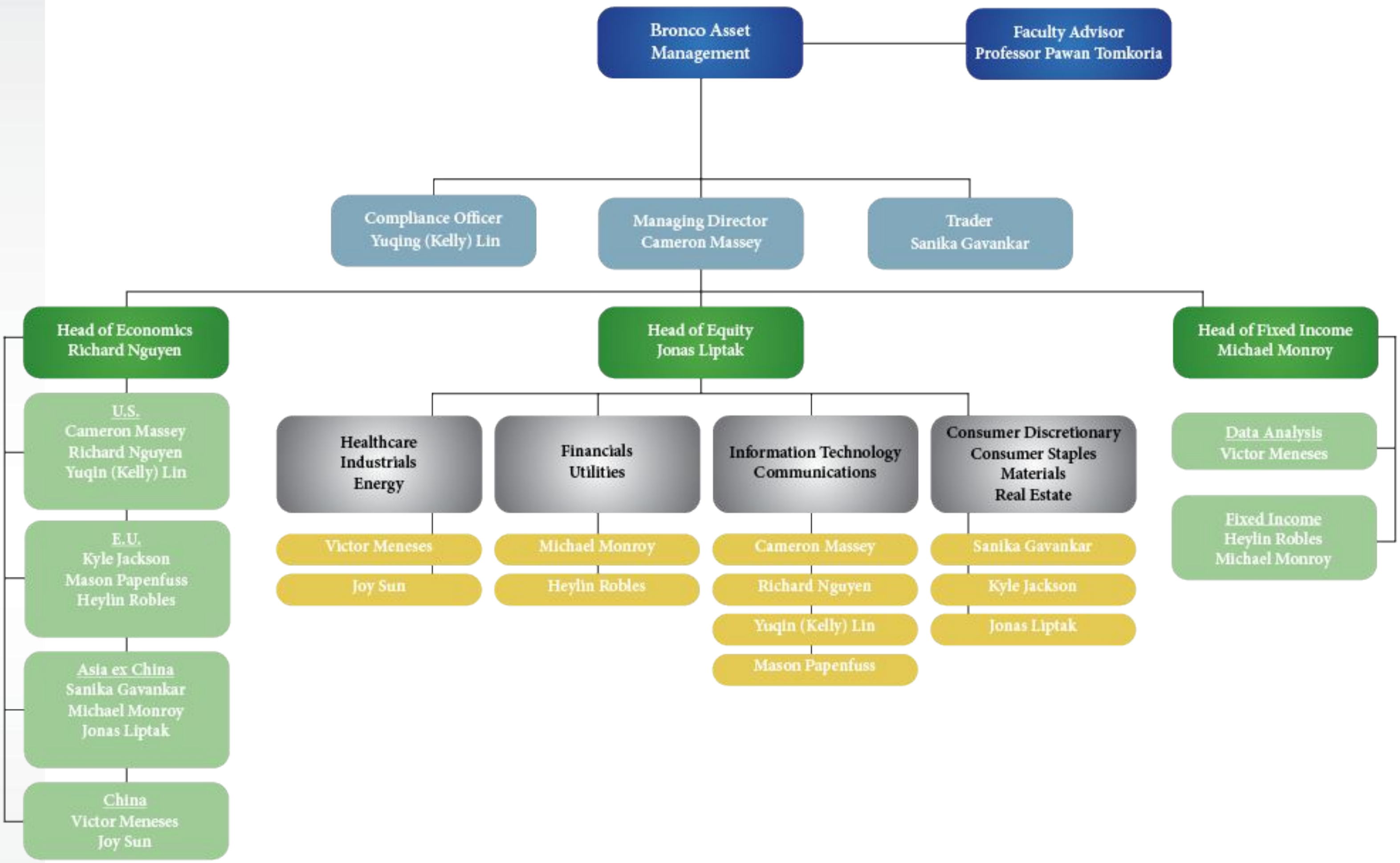
BAM 13
Future revenue growth 2019-2023 CAGR
Future EPS growth 2019-2023 CAGR
Has EPS growth exceeded Revenue growth 2019-2023?
Industry Growth 2023 vs 2021
R&D as a percent of sales 2022 vs 2019
Is the current year and next year forecast EPS trend flat or up over the last 90 days?
Is operating income margin improving 2016-2019 in a row?
Is Working Capital Turnover Ratio improving 2016-2019 in a row?
Is Debt/Equity Ratio flat or declining past 2016-2019 in a row?
Is Days Inventory on Hand rising or stable (trend Q4 2019 to Q3 2021)?
Is Net Insider Buying exceeding Selling over last 4 quarters?
Is PEG Ratio below 2? (If not, use relative comparison)
ISS Governance Quality Score (lower is better) (5 pass, 6 fail)

The BAM team allocated 60% of time and resources into a top-down macro-economic analysis which includes world economic outlook and forecasts, capital market outlook, asset allocation, portfolio optimization, equity and fixed income strategies. For the remaining 40% of the time, the team focused on a bottom-up approach that consists of sector allocation, stock screening, and individual equity fundamental analysis and valuation.

Investment Process Flowchart



CPP BAM Organization Chart



CPP BAM Portfolio
Appendix I

Asset Class	Sector	Ticker	Name	Portfolio Weight
Domestic Equity	Information Technology	FISV	Fiserv Inc.	1.55%
		ANET	Arista Networks Inc.	1.55%
		ADI	Analog Devices Inc.	1.55%
		ADBE	Adobe Inc.	1.55%
		AMAT	Applied Materials Inc.	1.55%
		AVT	Avnet Inc.	1.55%
		OLED	Universal Display Corp.	1.55%
		LRCX	Lam Research Corp.	1.55%
		GPN	Global Payments Inc.	1.55%
		CGNX	Cognex Corp.	1.55%
	Healthcare	BSX	Boston Scientific Corp.	1.74%
		UNH	UnitedHealth Group Inc.	1.74%
		EW	Edwards Lifesciences Corp.	1.74%
		MRK	Merck & Co. Inc.	1.74%
		A	Agilent Technologies	1.74%
	Consumer Discretionary	TGT	Target Corp.	1.60%
		FL	Foot Locker Inc.	1.60%
		BWA	BorgWarner Inc.	1.60%
		HAS	Hasbro Inc.	1.60%
		TMHC	Taylor Morrison Home Corp Common	1.60%
	Financials	WAL	Western Alliance Bancorp	1.49%
		TRV	Travelers Companies Inc.	1.49%
		SCHW	Charles Schwab Corp.	1.49%
		ESNT	Essent Group Ltd.	1.49%
		SBNY	Signature Bank	1.49%
	Communication	VOX	Vanguard Communication Services ETF	6.00%
	Industrials	VIS	Vanguard Industrials ETF	5.46%
	Consumer Staples	VDC	Vanguard Consumer Staple ETF	2.88%
	Materials	VAW	Vanguard Materials ETF	1.44%
	Real Estate	VNQ	Vanguard Real Estate ETF	2.04%
	Energy	VDE	Vanguard Energy ETF	1.38%
	Utilities	VPU	Vanguard Utilities ETF	1.14%
			Total Domestic Equity Allocation	**60.00%**

CPP BAM Portfolio

Appendix I

Asset Class		Ticker	Name	Portfolio Weight
Emerging Markets Equity	China	CXSE	WisdomTree China Ex State Owned Enterprises Fund	**10%**
	South Korea	EWY	iShares MSCI South Korea ETF	**2.5%**
			Total Emerging Markets Equity Portion	**12.5%**
Developed Markets Equity	European Union	VGK	Vanguard FTSE Europe ETF	**7.5%**
			Total Developed Markets Equity Portion	**7.5%**
Asset Class		**Ticker**	**Name**	**Portfolio Weight**
Fixed Income	Intermediary Treasury	IEF	iShares 7-10 Year Treasury Bond ETF	10%
	Senior Bank Loan	FTSL	First Trust Senior Loan Fund	10%
			Total Fixed-income Allocation	**20%**

CAPM Assumptions	
Risk Free Rate (10 Year T-bond)	1.56%
Equity Risk Premium (Damodaran Model)	5.24%
Average Individual Stock Weight	2.3%

Fixed Income Metrics	
Maturity	6.70
Duration	4.54
Tracking Error	0.66

Expected Returns	
Domestic Equities	7.30%
Emerging Markets Equities	5.65%
Developed Markets Equities	6.35%
Fixed Income	2.20%
Weighted Total	6.0%

Equity Metrics	
Beta	1.03
Market Cap	132B
P/E	21.23
P/B	4.65
EPS Growth	34.64
Dividend Yield	1.39

Equity Research Report

As of November 08, 2021

Analysts: K. Jackson
J. Liptak

BorgWarner Inc. (NYSE:BWA)

Overview:

Recommendation: BUY
Sector: Consumer Discretionary
52W High/Low: $55.55/35.79
PE (FWD): 10.2

Mkt Cap: $11.2 B
Current Price: $46.68
DCF Valuation: $67.06
BAM 13: 8/12

Enterprise Value: $14.3 B
Purchase Price: $46.68
Street B/H/S: 42%/53/5
Dividend Yield: 1.5%

Executive Summary:

BorgWarner Inc. (NYSE:BWA) is a top producer of engineered automotive components and is well-positioned to capture the automotive industry's transition toward electric vehicle component manufacturing. Since 2015, BWA has been growing its market position through recent acquisitions that have bolstered the company's EV parts manufacturing portfolio. With many governments moving towards limiting internal combustion engine vehicles sales by 2040, growing consumer demand for EVs, and many OEM customers ramping up production, BWA's expanding portfolio is set to supply the industry's manufacturing requirements for automotive components. The company's strategic investments along with industry tailwinds allow management to forecast a target revenue of 45% from EV related parts within the next 10 years.

Relative to its current competitors, BWA is close to the median for all value metrics, including P/E, P/CF, P/B and PEG ratio (see Key Metrics). However, when set against the EV industry comparisons as a whole, BorgWarner trades well below the median in all major value metrics listed previously (see Value Proposition). Therefore, BWA represents a Value and Reasonable Growth (VARG) security that is currently valued relatively inexpensive yet positioned to capture a rapidly growing industry. Using a DCF valuation, we value BorgWarner at $67.06 per share using a DCF analysis with a 2% terminal growth rate and a 9.53% cost of equity. With the stock currently trading at $46.68, this stock has a 43.65% potential upside and we recommend a BUY.

Key Metrics:

Overview	Market Cap	5-Yr Rev. CAGR	5-Yr EPS CAGR	D/E	PEG	P/B	P/CF	P/E
Industry Median	4.2 B	-0.1%	-3.8%	22.5%	0.4	1.5	4.5	10.3
Borgwarner (BWA)	11.2 B	9.1%	14.0%	26.3%	0.4	1.5	6.4	10.2

Value Proposition:

Overview	P/E	P/B	PEG	P/CF
EV Industry Med.	60.1	11.9	1.1	74.3
Borgwarner (BWA)	10.2	1.5	0.4	6.4

Summary Financials:

Borgwarner(BWA)	2018	2019	2020	2021E	2022E	2023E
Revenue ($MM)	10,530.00	10,168.00	10,165.00	14,897.90	16,749.60	18,075.30
Rev Growth %	7.5%	-3.4%	-0.03%	44.6%	12.6%	10.1%
EPS	5.08	3.08	0.20	4.02	4.72	5.64
EPS Growth %	33.1%	-39.4%	-93.6%	2,010.0%	17.4%	19.5%
ROE %	23.4%	16.7%	8.98%	12.3%	12.9%	13.5%
LTD/Equity Ratio	45.9	35.9	58.2	61.4	53.1	--
Year-End PE Ratio	6.8	10.9	15.4	11.6	10.1	8.3

Company Overview:

BorgWarner Inc. is an auto parts company that primarily supplies automotive powertrain components and systems with an emphasis on manufacturing and selling its products globally to OEMs of passenger cars and trucks. In addition, they also distribute to OEMs of commercial and off-highway vehicles. BorgWarner is considered a top manufacturer of clean technology solutions for combustion, hybrid, and electric vehicles. BWA offers a diversified product portfolio including chain systems, emissions and thermal systems, starters, alternators, hybrid electric motors, and electric motors. BWA supplies to many major automaker companies including Ford and Volkswagen which account for about 25% of sales along with other large customers including Stellantis, Daimler, Hyundai, and General Motors. BWA operates in four main segments, including: Air Management, E-propulsion and Drivetrain, Fuel Injection, and Aftermarket Parts, accounting for 55%, 39%, 5% and 1% of total revenue respectively.

Industry Overview:

The electrification of the automotive industry is a trend that is starting to take hold. Governments around the world including the United Kingdom, Germany, Japan, Canada, 12 U.S. states and many others have already committed to ending the sale of new combustion engine-based vehicles within the next 20 years. In addition, the U.S. and E.U. are attempting to pass proposed bans. The movement to electrification is not just a product of government action, but also a result of consumer demand for EVs (see Appendix 1). This new demand has not gone unnoticed by BorgWarner's main customers either, with Ford pledging to spend more than $30B by 2030 on electric vehicle development and VW stating with confidence that it will stop selling gasoline-based cars in Europe by 2035.

Investment Thesis:

BorgWarner's management has set a forward-looking goal of being at the forefront of electric vehicle parts production with a target of 45% of revenue coming from Electric Vehicle related parts by 2030. They have been growing their electrification capabilities for commercial and light vehicles in their major segments through aggressive mergers and acquisitions. BWA has been proactive in this goal with acquisitions starting in 2015 with REMY international, SEVCON (2017), Delphi Technologies (2020), and AKASOL (2021). The acquisition of these companies have enabled BorgWarner to create a strong foothold and offer excellent growth potential within the rapidly expanding EV market. With many of their existing customers quickly expanding their EV production, BorgWarner is well suited to have a great position within this rapidly evolving market.

Risks:

Company and valuation risks include:

- Rising interest rate risk affecting affordability of car loans, lowering demand levels.
- Risk of continued supply chain gridlock originating from COVID-19.
- Cyclical risks of the automotive industry, as demand for cars goes down during recessions.
- BWA moving revenues into a developing EV
- Move toward EV damages existing combustion based product mix.
- Failure to realize benefits from acquisitions, such as Delphi and Akasol.
- Existing in a competitive industry, BWA must continue to innovate to stay ahead.

DCF Valuation Model: Continuing Operations Perspective: All Amounts in Millions

Last Updated 11/8/2021

Description	TICKER	Sector	Market Cap (Bn)	Market Cap (mil)
BorgWarner Inc.	BWA	Consumer	$11,149,360,800	$11,149

DCF Valuation: on 1/1/2022	67.06
Current Stock Price	46.68
Upside (Downside)	43.65%
Total Potential Return	53.18%

Completed Months of Fiscal Year: 0

	2017	2018	2019	2020	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	Perpetuity
Assumptions										
Sales Growth	8.0%	7.5%	-3.4%	-0.03%	45.20%	12.80%	8.70%	7.80%	6.00%	2.00%
EBIT Margin	11.0%	11.3%	12.8%	6.1%	9.91%	10.42%	11.12%	11.43%	11.36%	10%
Tax Rate	54.6%	18.6%	37.1%	71.3%	25%	25%	25%	25%	25%	25%
Net WC Turnover (excluding Cash)	14.9	12.5	10.4	12.7	12.00	12.00	12.00	12.00	12.00	10.00
FA Turnover Ratio	2.8	3.1	3.3	1.9	2.00	2.00	2.00	2.00	2.00	2.00
Cost of Capital										
10 Year T-Bond Rate					1.51%					
Cost of Debt (WACC_COST_DEBT from BB)					1.53%					
Cap Structure % Debt					33.01%					
Equity Risk Premium (Damodaran)					5.24%					
Beta					1.53					
CAPM Ke					9.53%					
Cap Structure % Equity					66.99%					
WACC					6.76%					
Income Statement										
Sales	9,799.30	10,530.00	10,168.00	10,165.00	14,759.58	16,648.81	18,097.25	19,508.84	20,679.37	21,092.96
EBIT	1,077.10	1,190.00	1,303.00	618.00	1,462.67	1,734.81	2,012.41	2,229.86	2,349.18	2,109.30
Taxes on EBIT	587.665598	220.8355321	483.9714286	440.4775583	365.67	433.70	503.10	557.47	587.29	527.32
Net Earnings Before Interest	483.30	985.00	797.00	567.00	1,097.01	1,301.10	1,509.31	1,672.40	1,761.88	1,581.97
Diluted # Shares (Millions)	211.50	209.50	206.80	214.00	214.00	214.00	214.00	214.00	214.00	214.00
Balance Sheet										
Net WC (excluding Cash)	657.30	840.00	979.00	803.00	**1,229.97**	**1,387.40**	**1,508.10**	**1,625.74**	**1,723.28**	**2,109.30**
Net Fixed Assets excl. Intangibles excl GW	3,479.40	3,437.00	3,073.00	5,337.00	7,379.79	8,324.40	9,048.63	9,754.42	10,339.68	10,546.48
Total Debt+Other LT Liabilities	3,621.10	3,524.00	2,833.00	5,591.00	5,591.00	5,591.00	5,591.00	5,591.00	5,591.00	5,591.00
Cash Flow Statement										
Net Earnings Before Interest	483.30	985.00	797.00	567.00	1,097.01	1,301.10	1,509.31	1,672.40	1,761.88	1,581.97
Depreciation	367.80	391.00	400.00	479.00	662.34	747.12	812.12	875.47	927.99	946.55
Net WC (Incr) Decr	(61.90)	(276.00)	(166.00)	243.00	(426.97)	(157.44)	(120.70)	(117.63)	(97.54)	(386.01)
Fixed Assets (Bought)Sold	(555.50)	(510.00)	(472.00)	(425.00)	(2,705.13)	(1,691.73)	(1,536.34)	(1,581.26)	(1,513.26)	(1,153.35)
Free Cash Flow	233.70	590.00	559.00	864.00	(1,372.75)	199.06	664.38	848.97	1,079.07	989.16
PV						186.450209	582.9028931	697.6828718	830.6249012	15993.75117
Cumulative PV						186.45	769.35	1,467.04	2,297.66	18,291.41
-Total Debt Net of Cash										3,941.00
Equity Value										14,350.41
Equity Valuation/Share										**67.06**
										67.0580002

The Auto industry is primed to have a growth period coming out of the COVID-19 pandemic. The pent up and increasing demand for vehicles as the economy reopens sets up the industry to do very well. With household savings high throughout the pandemic the demand for vehicles is in a great spot (see Appendix 2).

BorgWarner is a company that can capitalize on the recovering auto industry, while also being positioned for future growth. The biggest auto industry trend is electrification and BWA is a great way to invest in that market.

BWA is well connected with companies that are moving in that direction and having the technology to provide a newer product to the market with their acquisitions.

Key Drivers:

Our recommendation is based on the following key drivers:

- Rapidly repositioning to gain exposure to the quickly growing EV marke
- Expected recovery of the automotive industry.
- BWA is a strong VARG proposition compared to the broad EV industry.
- Strong management core has enabled constant increases in efficiency and reduction of excess leverage.
- Outperforming the auto parts industry historically and coming out of the COVID-19 pandemic.
- Overall financial stability and strength throughout the trade war and ongoing supply chain constraints
- Flexible M&A approach to gain access to markets of interest.

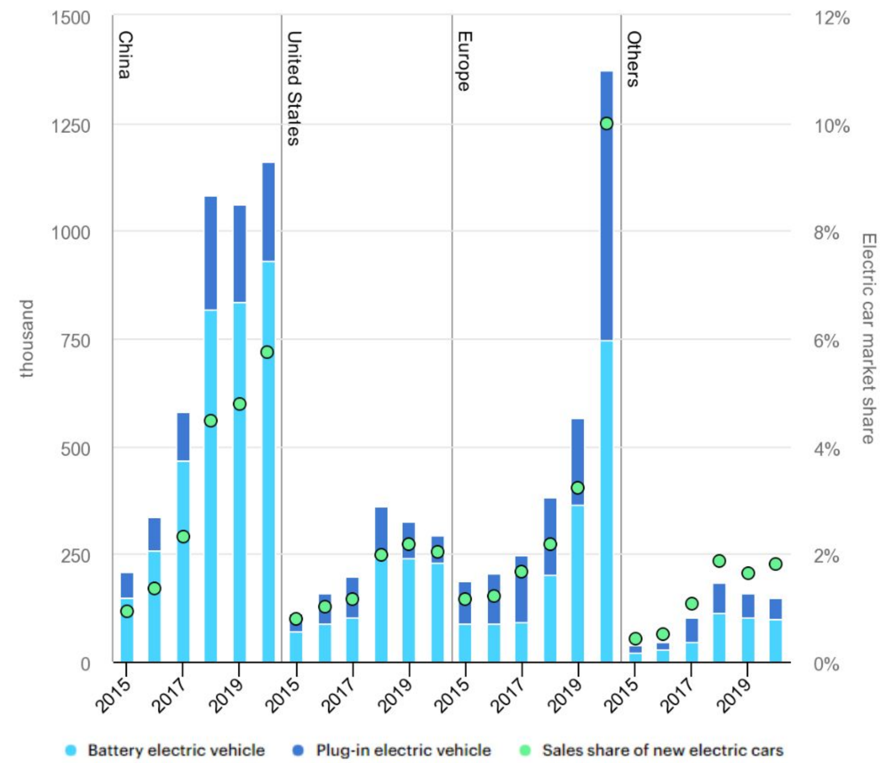
Recommendation and Valuation:

BAM issues a **BUY** recommendation.

Using a DCF valuation, we value BorgWarner at $67.06 per share using a DCF analysis with a 2% terminal growth rate and a 9.53% cost of equity. With the stock currently trading at $46.68, this stock has a 43.65% potential upside.

Our recommendation is based on the company's outstanding 5-year Revenue and EPS CAGR of 9.06% and 13.99% compared to the industry median of -0.08% and -3.81%. This growth is expected to continue with its move into EV. This is supported in their acquisitions of EV-focused companies that have improved their technologies and well-established connections with major automaking companies that are expanding their EV segments. BWA represents exposure to electrification-linked growth at an attractive valuation, as it currently trades inexpensively relative to earnings, earnings growth, free cash flows, and book value when compared to the broader EV industry. In addition to the above, the company has strong potential to take advantage of post COVID-19 market trends such as increased savings rate leading to pent up demand, and easing supply chain issues. As such, BAM believes that BorgWarner presents an attractive investment opportunity.

1. Global Electric car registrations and market share, 2015-2020
Source: International Energy Agency



U.S. Monthly Personal Savings

Source: Bloomberg