The Regents of the University of California

INVESTMENTS SUBCOMMITTEE
November 13, 2018

The Investments Subcommittee met on the above date at UCSF–Mission Bay Conference Center, San Francisco.

Members present: Regents Anderson, Anguiano, Leib, Park, and Sherman; Ex officio member Makarechian; Advisory members Bhavnani, Simmons, and Um; Chancellor Khosla; Staff Advisor Main; Student Advisor Huang

In attendance: Regent Morimoto, Faculty Representative May, Assistant Secretary Lyall, Chief Investment Officer Bachher, Executive Vice President and Chief Financial Officer Brostrom, Deputy General Counsel Woodall, and Recording Secretary McCarthy

The meeting convened at 2:00 p.m. with Subcommittee Chair Sherman presiding.

1. **PUBLIC COMMENT**

There were no speakers wishing to address the Subcommittee.

2. **APPROVAL OF MINUTES OF PREVIOUS MEETING**

Upon motion duly made and seconded, the minutes of the meeting of September 25, 2018 were approved.

Chief Investment Officer (CIO) Bachher recognized personnel of the Office of the CIO for their accomplishments. Subcommittee Chair Sherman announced the following promotions: Senior Managing Directors Richard Bookstaber and Sam Kunz; Managing Directors John Beil, Cay Hayne, Marco Merz, and Ronnie Swinkels; Investment Directors Craig Huie, Albert Lee, Byron Ong, and Aaron Staines; and Senior Investment Analyst Jack Zhu. The following staff received equity promotions: Floyd Gazzaway, Jessica Hans, Brady Jewett, Allen Kuo, Albert Lee, Tony Lo, Michael Swett, Matt Webster, and Trevor Woods. Subcommittee Chair Sherman and Mr. Bachher congratulated these staff members.

3. **ADOPTION OF INVESTMENT POLICY STATEMENT AND ASSET AND RISK ALLOCATION POLICY FOR THE BLUE AND GOLD ENDOWMENT**

The Chief Investment Officer recommended that the Investments Subcommittee recommend that the Regents adopt the proposed Investment Policy Statement, as shown in Attachment 1, and the Asset and Risk Allocation Policy, as shown in Attachment 2, for the Blue and Gold Endowment.

[Background material was provided to Regents in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Mr. Bachher explained that the Blue and Gold Endowment would be a new product for the Office of the CIO. There had been no substantive changes since it was discussed at the prior Subcommittee meeting. Senior Managing Director Sam Kunz said the Blue and Gold Endowment was intended to offer returns like the General Endowment Pool (GEP) but with liquidity similar to the Short Term Investment Pool (STIP). A reference portfolio was constructed that would match the GEP's 13 percent volatility while using broad, liquid, passive investments in only two asset classes: equity and fixed income. The Blue and Gold Endowment asset allocation would be 70 percent equity and 30 percent fixed income. Projected Blue and Gold Endowment 15-year returns of 5.7 percent would be between the 6.5 percent GEP return and the 4.8 percent Total Return Investment Pool's (TRIP's) return. Mr. Kunz advised that, because of the more concentrated nature of the Blue and Gold Endowment portfolio, investing in only two asset classes, its volatility would match that of the GEP, but its potential for negative returns could be more pronounced in times of market stress.

Mr. Kunz discussed the proposed Blue and Gold Endowment governance documents, the Investment Policy Statement (IPS) and the Asset and Risk Allocation Policy. The IPS set the payout rate at 3.75 percent, one percent below that of the GEP. The Asset and Risk Allocation Policy set the strategic asset allocation and allowable ranges around the allocation, and the portfolio benchmarks. The growth or equity allocation is 70 percent and the income allocation is 30 percent, both plus or minus ten percent. The Growth benchmark would be the broadest possible, the MSCI All Country World Index Investable Market Index Tobacco Free – Net Dividends, the same used for most of the Office of the CIO's equity products. The income benchmark would be the Bloomberg Barclays U.S. Aggregate Index. Following Regents' approval, the product would be implemented and a six-month glide path used to arrive at the target allocations. Mr. Kunz anticipated that the product would be fully invested by the second or third quarter of 2019.

Subcommittee Chair Sherman asked for an estimate of the eventual portfolio size. Executive Vice President and Chief Financial Officer Brostrom said the Blue and Gold Endowment was designed to take advantage of excess liquidity from STIP and TRIP, which together currently held $14 billion. Slowly over time, he hoped that about half of that amount could be allocated to the Blue and Gold Endowment. The more that can be transferred to longer term investments with predictable payouts, the greater effect it would have on the operating budget.

Subcommittee Chair Sherman asked how this action would affect UC's bond ratings and whether the assets held in the Blue and Gold Endowment would be considered as part of UC's liquidity. Mr. Brostrom responded that the rating agencies require that UC keep about $5 billion in STIP or liquid investments similar to STIP. Currently, the University held $4 billion of this liquidity requirement in STIP and a portion of TRIP counted as a liquid asset. The biggest driver of UC's liquidity needs were the medical centers, which were growing more quickly than the rest of the University. Mr. Brostrom expressed hope that the University would be able to count more of TRIP and a portion of the Blue and Gold Endowment toward its liquidity requirements.

Subcommittee Chair Sherman asked about the anticipated duration of the fixed income portion of the Blue and Gold Endowment. Mr. Kunz said the duration would be between that of the GEP and TRIP, the same as its benchmark, the Bloomberg Barclays U.S. Aggregate Index. Senior Managing Director Steven Sterman said that duration was currently slightly less than six years.

Regent Makarechian asked if the University could borrow from the Blue and Gold Endowment instead of from STIP to fund the UC Retirement Plan (UCRP) and to preserve liquidity in STIP. Mr. Brostrom agreed that STIP funds were used for many different operating purposes and had lent more than $4 billion to fund UCRP, which had been successful in increasing UCRP's funding ratio by eight percent. STIP funds were also used to originate mortgages, currently totaling $500 million. Each year, the University would evaluate how much liquidity was required for pension and mortgages, and how much could be moved to longer-dated assets. Moving assets to the Blue and Gold Endowment would be done slowly. Regent Makarechian pointed out that UCRP's borrowing from the Blue and Gold Endowment would be at a higher interest rate than borrowing from STIP. Since these products both fund campus operations, he posited that receiving a higher interest rate would benefit the campuses. Mr. Brostrom responded that borrowing at a rate higher than UCRP's expected return would defeat the purpose of the loan.

Regent Makarechian asked about the ultimate goal for this new product. It would be beneficial to fund it as much as possible, since it would earn higher returns than TRIP. Mr. Brostrom stated that Regent Makarechian's advice over the years, to move excess liquidity into products that could earn higher returns and benefit the campuses, was part of the impetus to create the Blue and Gold Endowment. STIP and TRIP combined held $14 billion currently. Mr. Brostrom hoped to demonstrate to the ratings agencies that UC was meeting its liquidity needs, which he anticipated would require $5 billion to $7 billion. Excess liquidity could be moved to the Blue and Gold Endowment or the GEP to earn higher returns for campus operating budgets. Regent Makarechian asked why the fixed income portion of the Blue and Gold Endowment would not be counted as liquidity by the rating agencies. Mr. Brostrom agreed that a portion of the Blue and Gold Endowment should be considered liquid by the ratings agencies, but it would be discounted by a degree of principal risk based on the duration and credit risk. These factors would be part of the University's discussions with the rating agencies.

Regent Anderson asked why the proposed benchmark for the Growth allocation was the MSCI All Country World Index Investable Market Index Tobacco Free – Net Dividends, and whether the total return should not include dividends. Managing Director Marco Merz explained that there is a gross dividend benchmark that includes all dividend payments. The net dividend benchmark is not without the dividends, but it assumes a certain dividend withholding tax rate, taking out only withholding taxes.

Upon motion duly made and seconded, the Subcommittee approved the CIO's recommendation and voted to present it to the Board.

4. **REVIEW OF ASSET CLASSES, RISK, AND OPERATIONS**

[Background material was provided to Regents in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Chief Investment Officer (CIO) Bachher provided an overview of performance during the past quarter ending September 30, 2018, at which time the Office of the CIO's assets under management were $123 billion. As of November 12, 2018, assets under management were $118 billion. As of September 30, the pension held $68 billion. Between June and September, $2 billion of portfolio cash had been invested in private market transactions, $1 billion of that in real estate. The UC Retirement Plan (UCRP) had 4.5 percent cash and the General Endowment Pool (GEP) had 3.5 percent cash. UCRP gained 2.5 percent for the quarter, the GEP gained 1.7 percent, the Total Return Investment Pool (TRIP) gained two percent, and the Short Term Investment Pool gained 1.9 percent.

Performance was driven by public equity volatility and the one-quarter lag in private equity valuation in comparison with its real-time public benchmark. Private equity valuations would be trued up at the end of the fiscal year. For the year ending September 30, UCRP earned 6.7 percent; GEP earned 7.5 percent.

Mr. Bachher explained that for each product the Subcommittee and the Regents approve an Investment Policy Statement that is implemented by the Office of the CIO. The asset allocation and current position of each product is reviewed by the Office of the CIO. Risk allocation across and within all products is a focal point. The strategic allocation targets across all products indicated a need to add $10 billion in private market assets over the upcoming three to five years, which would be funded by reducing allocation to public equities and some fixed income. For risk allocation purposes, every asset class is decomposed into its constituent parts, including the inherent risks in private equity, public equity, and fixed income.

Senior Managing Director and Chief Risk Officer Richard Bookstaber discussed how the Office of the CIO's investing is driven by a risk management framework. Risk management begins with verified data of positions and other market information. Risk reports are disseminated to product leaders and asset class teams and assessed. It was essential that a single, integrated risk management system is used across all asset classes. Risk of different asset classes appears throughout various products. For example, interest rate risk exists not only in fixed income, but also in real estate and equities. Equity risk is present not only in equities, but also in private equity and real estate.

Mr. Bookstaber said the risk framework used by the Office of the CIO has three types of risk measurement: traditional risk management that assumes the future would resemble the past; using stress testing to posit risks that may occur that have not occurred in the past; and consideration of follow-on effects of possible scenarios. The first level of risk includes broad-based macroeconomic risk factors such as economic growth, real interest rates, inflation, credit, commodities, and emerging markets. Exposure of each asset class to each factor is determined and aggregated to determine total risk. In UCRP, the GEP, and TRIP, 80 percent or more of the risk is related to economic growth factors. The volatility of these three products was currently quite low, about half of what it typically would be.

Mr. Bookstaber explained that economic growth dominated the risk factors because the assets included a large proportion of equities, which have much higher volatility than other types of assets. However, moving assets out of equities into fixed income would reduce returns. He displayed a Goldman Sachs Bull/Bear Market Risk Indicator, which he said was typical of other analysts' conclusions, which showed that the current potential for a bear market was higher than at any time since the 1970s. When volatility is low, investors put more into risky assets. Economic growth risk could be mitigated by reducing equities, but that would be hard to do given targeted returns. Various hedges could be used, but at a cost. The most attractive solution was to search for investment opportunities in areas not highly correlated with economic growth, such as real assets, private equity, and real estate.

Stress testing the portfolio was important in the current environment of low volatility. History is not necessarily a good guide to future risk. Stress testing allows consideration of events that do not have a historical precedent. Mr. Bookstaber cited some examples of stress testing various scenarios.

Regent Makarechian asked if possible effects of natural disasters such as earthquakes and fires were considered risk factors. Mr. Bookstaber said that the risk of most natural disasters and even political events tends to be short-term, although these events could have greater regional effect. UCRP, with its longer time horizon, could be affected by longer-term risk factors such as climate change or demographics. Senior Managing Director Gloria Gil added that the Office of the CIO manages risk of individual assets in various regions, for instance with earthquake insurance for separate accounts in real estate or windows that can withstand hurricane-force winds for holdings in Florida.

Regent Leib asked why volatility was low when it seemed that the stock market had been more volatile. Mr. Bookstaber said that volatility had increased recently.

Regent Anderson asked about the Office of the CIO's use of BlackRock's risk system and its relationship with BlackRock. Mr. Bookstaber explained that BlackRock's system was originally developed to manage risk in its own portfolios; the system was transparent and similar to others. Mr. Bookstaber chose the BlackRock system because of the company's expertise in fixed income and the support it offers. He expressed a high level of confidence in the BlackRock risk management system.

Chief Operating Officer Arthur Guimaraes introduced the Office of the CIO's operations leadership team. While the operations staff were fully integrated into office collaborations about investments and risk, the operations team must also be independent. For example, the operations team manages valuations. Various University governance groups function as operating risk managers. The Regents approve the Investment Policy Statements (IPS), and set asset and risk allocation, and benchmarks. The Office of the CIO implements the IPS and the asset and risk allocation. The operations team within the Office of the CIO monitors compliance with the spirit and the letter of the IPS and applicable laws. This team creates weekly and quarterly compliance reports verifying that investments are within applicable investment ranges. For some Office of the CIO portfolios, the operations team produces daily performance reports. The operations team also supplies data necessary for the in-progress implementation of an industry-leading data platform to support investment and risk decisions. The operations team also enables day-to-day operations, monthly investment valuation, and cost reports. Costs, including external management fees and incentives, are carefully monitored as a critical aspect of the effort to reduce costs. Management fees in UCRP had been reduced from 43 basis points (bps) in 2015 to 35 bps in 2018, which yielded significant savings of almost $50 million a year on a $60 billion portfolio.

California Government Code Section 7514.7 requires all California public pension plans to disclose annually management fees for all alternative investment transactions after January 1, 2017. The Office of the CIO had been able to report this information for 75 percent of all UCRP alternative assets. The availability of data would continue to improve. Mr. Guimaraes summarized that the processes of the Office of the CIO around operational risk had continued to improve over the past four years.

Mr. Bachher added that reducing the number of external public equity managers during the past four years involved a transition that required intensive collaborative management by the investments and operations teams. Also due diligence on potential private transactions is conducted in house by the operations team. Information uncovered is communicated to Office of the CIO investment professionals and can result in decisions not to invest. The operations team has an equal voice in evaluating investments.

Subcommittee Chair Sherman asked if all external managers, including actively managed equities, separate accounts, and funds, were transparent so that the Office of the CIO would know all of their holdings. For example, it would be important to know if two managers had similar exposures. Mr. Guimaraes said his goal was to achieve 100 percent transparency. The Office of the CIO gets full transparency of its passive investments and is working to achieve better information about some of its commingled funds. Over the past few years, he estimated that transparency had improved by about 25 percent. Mr. Bachher added that the Office of the CIO would not invest in absolute return holdings without full transparency. Full transparency was necessary to know the relationship of holdings of various managers.

Regent Makarechian asked why total management fees dipped in 2016. Mr. Guimaraes said that was attributable to lower incentive fees related to market performance.

Regent Anderson asked about the timing of transparency and understanding the positions of portfolios. Mr. Guimaraes said that his office achieved better than 80 percent transparency. Some transparency information is reported daily and some monthly, for instance in absolute return.

Mr. Bachher said he had divided management of the public equities asset class into public and private. He noted the difficulty of an actively managed fund's outperforming the passive benchmark. The proportion of Office of the CIO public equity assets invested passively was growing and its actively invested public equity holdings were becoming concentrated in fewer external managers. Senior Managing Director Sam Kunz was managing passive public equities and Managing Director Ronnie Swinkels was managing the global active public equities.

Mr. Swinkels explained that the actively managed public equity portfolio was invested completely through external managers. Of the $45 billion in total Office of the CIO equities, $25 billion was invested actively and $20 billion passively, with proportions varying by product. The GEP equity portfolio was mostly invested in active holdings, UCRP was mixed, and TRIP was invested entirely in passive equities. He anticipated that two or three years hence about $30 billion would be in passive holdings and $15 billion in active. Passive investment, particularly in the United States where it is harder to outperform the benchmark, would be increased in UCRP. The active public equity portfolio would become increasingly concentrated with fewer external managers. The number of public equity external managers had been reduced from 60 a few years prior, to 28 in June 2017, to 20 currently. Mr. Swinkels sought managers with concentrated portfolios, with only ten to 15 stocks that they knew very well through close relationships with company management and research advantages that differentiated their ability to analyze these companies. He intended to move toward holdings outside of the United States and favored value-focused managers.

Mr. Swinkels remarked that longer term performance was his focus. Active management had added value to five-, ten-, and 20-year returns in both UCRP and the GEP. In the past year, UCRP, the GEP, and TRIP public equities had double-digit returns driven mostly by the market rally. UCRP public equity performance was 0.9 percent below its benchmark and the GEP performance was 0.1 percent below its benchmark. In UCRP and the GEP the portfolio's underweight to U.S. holdings, particularly the technology sector, reduced returns. Facebook, Apple, Amazon, Netflix, and Google had risen more than 40 percent for the fiscal year. Most of the Office of the CIO's public equity external managers had more defensive value positioning. The portfolio's public equity external managers outside the U.S. performed fairly well, especially in emerging markets, with a few external managers with concentrated focuses in China and India. Mr. Swinkels sought to add funds in the coming year, particularly outside the U.S., where market inefficiencies and less coverage presented opportunities for longer-term value-focused managers. In the U.S., he would seek active managers in fields requiring special knowledge, for instance in biotechnology or real estate. He favored managers with an alignment of interest with the Office of the CIO reflected in fee structures and the external managers' own investment in the product. When market dislocations presented opportunities, co-investments with external managers would be sought.

Mr. Kunz said he managed the passive portion of the public equity allocation. When the active and passive portions of public equity were combined, returns should be different from the benchmark, mostly by design. Some differences from the benchmark were the result of selection of active external managers and some were structural, resulting from areas in which the Office of the CIO saw more potential for excess returns. Risk management was used to control active investment risks. Certain passive funds had been used to mitigate the risk of active public equity holdings.

Subcommittee Chair Sherman asked what portion of UC's public equities were in separately managed accounts compared with commingled funds. Mr. Swinkels replied that these proportions varied by product. The GEP had 12 actively managed public equity funds in total, seven in either a managed account or a fund-of-one, meaning that it was a fund structure, but UC was the only investor. UCRP had eight actively managed public equity funds in fund-of-one managed accounts and several in commingled accounts. He intended to increase the number of funds-of-one. Subcommittee Chair Sherman asked whether either the commingled funds or the funds-of-one were subject to withdrawal gates on the investor or fund level. Mr. Swinkels responded that commingled funds were subject to both investor- and fund-level gating, and funds-of-one could be restricted on the fund level or the investor level as to the percentage of the University's investment that could be withdrawn per month or quarter. The Office of the CIO evaluates the appropriateness of the gate depending on the region and the liquidity of the underlying strategy, the relationship the Office of the CIO had with the manager, and the structures that manager has with its other clients. Subcommittee Chair Sherman asked if all these external managers had hurdle rates before performance incentives were paid. Mr. Swinkels said that of the 12 GEP funds, four did not have hurdle rates, although two of those had a multi-year basis for calculation of incentives. One fund did not have a performance fee and the seven others had hurdle rates. Of the 20 actively managed public equity funds in UCRP, six did not have a performance fee, ten had hurdle rates, and of the remaining four, three had multi-year bases for performance fees with clawback provisions and one fund was in the process of being redeemed.

Regent Anderson asked about the history of the portfolio's proportion of active to passive management and the basis for the current target allocation. Mr. Bachher said the aspirational target allocation of 25 percent active to 75 percent passive in public equities was based on the belief that it was more advantageous to be invested passively in the United States, as it was very difficult to outperform the benchmark currently in U.S. public equities. As the portfolio had grown, it became harder to find attractive active managers with sufficient capacity. If the portfolio had too many active managers, it had the risk of being similar to a passive index, but paying active management fees. The Office of the CIO would seek high-conviction active managers, but otherwise would invest passively.

Regent-designate Simmons asked about the diversity of the public equity external managers. Mr. Bachher said that the diversity of the external managers was poor, as was the diversity of the Office of the CIO staff. Increasing diversity had not been an intentional focus. Mr. Bachher expressed his commitment to diversity and inclusion, and his intention to make progress in that area.

Managing Director John Beil reported on the private equity asset class. He planned to add three investment professionals to the existing four-member team. He explained that the goal for the private equity allocation was to be the highest-earning asset class in the GEP and UCRP, meaning that it would also carry the highest risk. Economic risk was the biggest contributor to private equity risk. Over the past five years, performance of the private equity portfolio had been strong at 17 percent, 2.3 percent above its benchmark. Co-investments and direct investments had been the largest drivers, generating 36 percent on a five-year annualized basis. Co-investments, which were fee- and carry-free, represent 17 percent of the private equity portfolio. Co-investments are generally investments made alongside the Office of the CIO's buy-out partners. Buyout funds had been the second-largest driver of returns and were the largest substrategy of the private equity portfolio, at 52 percent. Buyout funds generated returns of 14.8 percent on a five-year annualized basis.

Mr. Beil said venture capital, about 30 percent of the private equity portfolio, had been the performance laggard. Venture capital consisted of both early-stage venture and later-stage growth opportunities. Five-year returns were 13.7 percent. While the composition of private equity substrategies within the GEP and UCRP were similar, the GEP had benefited from a larger co-investment allocation over the past several years. The GEP, being a smaller portfolio than UCRP, had been able to generate more co-investments. Co-investment performance had been driven by good performance by partners and good security selection by the Office of the CIO private equity team, which had been very selective in choosing co-investments. Many of UC's peers were also seeking co-investment opportunities and the Office of the CIO had tried to differentiate itself by co-investing not only in equity but also through the Office of the CIO's fixed income team co-investing in the first and second lien credit generated from the leveraged buyouts. Those opportunities were considered part of the Office of the CIO's private credit asset class.

Mr. Beil said he intended to reduce the size of the venture capital exposure over the upcoming several years, while increasing the co-investment portfolio and, to a lesser degree, the buyout portfolio. Over the upcoming three to five years, Mr. Beil would like the private equity portfolio to be invested 70 percent in the United States. The 30-percent portion invested outside the U.S. would likely be roughly balanced between Europe and Asia over the medium term, but initial efforts had focused on Asia and would turn soon to a project in Europe. Mr. Beil intended to increase the international diversification of the private equity portfolio, as a tool to manage risk should there be a downturn in the U.S.

The aggregate private equity portfolio was currently $4.4 billion, $1.1 billion in the GEP and $3.3 billion in UCRP. Mr. Beil expressed the goal of more than doubling those amounts over the upcoming four to six years. The approved private equity allocation would increase from 11 percent to 22 percent in the GEP and from five to ten percent in UCRP. To achieve this expansion, Mr. Beil planned to invest about $2.2 billion per year over the upcoming five to seven years, including $700 million per year for the GEP and $1.5 billion for UCRP. His team would search for attractive opportunities and could exceed those amounts should there be a downturn that resulted in attractive pricing.

Mr. Beil summarized the private equity team's five areas of focus: to mitigate the J-curve impact to the portfolio resulting from the increase pacing of private equity investment. He explained that when the Office of the CIO commits to a fund, it takes that fund several years to put that capital to work, but the Office of the CIO was charged full fees on the committed amount. So increasing pacing resulted in increased fees for a period of time while the capital was being invested. The J-curve effect would be mitigated primarily through co-investments and other strategies. Geographic distribution of the portfolio would be increased. Co-investments would be increased. Discipline in being highly selective would be maintained. Larger investments would be made with fewer partners, differentiating the Office of the CIO and positioning it for co-investment opportunities. Risk would be carefully managed and the focus would be on long-term performance.

Subcommittee Chair Sherman asked about valuations of private equity holdings and if the Office of the CIO accepted the fund managers' valuations. Mr. Beil said that for the Office of the CIO's annual statements the Office of the CIO tested statements from its partners. For the interim quarterly statements, the Office of the CIO generally accepted its partners' valuations. When the Office of the CIO underwrites new investments, it carefully reviews how external managers had marked their investments compared with valuations upon exit.

Subcommittee Chair Sherman asked if distributions in kind of public securities made by commingled funds remained part of the private equity asset class or were moved to the public equity asset class. Mr. Beil said they were held in a sub-portfolio within the private equity portfolio.

Subcommittee Chair Sherman asked if the commitment amount of a private equity investment or the amount actually invested per year was attributed to the Office of the CIO's planned pace of investment. Mr. Beil commented that the net asset value was generally used and the commitment amount was also tracked. The net asset value of the private equity portfolio was currently around $4.4 billion, but when total commitments were added the portfolio totaled $9 billion. Subcommittee Chair Sherman pointed out that the value including commitments was close to the portfolio target.

Subcommittee Chair Sherman asked if most external managers charged fees based on commitments rather than on funds drawn. Mr. Beil said he had seen a few investment opportunities in the past year in which managers charged fees on drawn capital rather than committed capital. However, the vast majority of funds still charged fees on committed capital.

Regent Leib asked about the scalability of venture capital assets. Mr. Beil said that in early-stage venture capital, managers tend to raise funds consistently in the $200 million to $400 million range and these were highly sought after by investors. So an investment allocation for the Office of the CIO with the best managers might be in the range of $2 million to $5 million. The UCRP was so large that the role for this size investment was questionable. The amount of work for the staff of the Office of the CIO to underwrite a $2 million to $15 million investment would be the same as for a $200 million investment in a buyout fund. In venture capital, strategies for the UCRP and the GEP would likely diverge, with UCRP having more later-stage growth venture capital where larger investments were possible, and the GEP, with one-third the allocation of private equity of the UCRP, having more early-stage venture capital investments.

Regent Park asked if Mr. Beil anticipated any factors that would affect buyout funds. Mr. Beil said that for several years in the United States and Europe purchase price multiples had been elevated, with much capital seeking investments, causing his office to be cautious about buyout opportunities. Leverage had also been high as a result of low interest rates. Rising interest rates would be a drag on the income of companies that had been bought by buyout partners. Mr. Beil expressed his view that there were still attractive buyout opportunities, but emphasized the importance of exercising caution in manager selection.

Regent Park asked if the buyout portfolio was concentrated in any sectors. Mr. Beil commented that while the Office of the CIO preferred to invest with managers that were sector-specific and had more skill at selecting companies within those sectors, the overall buyout portfolio was broadly diversified, with some concentration in health care and software. Mr. Bachher said buyout funds had become bigger than ever, with a great deal of capital seeking deals; exuberance was high, giving him pause.

Regent Makarechian noted the high rate of return for co-investments and asked about the process for making co-investments. Mr. Beil said there was no limit on the proportion of co-investments in the private equity portfolio. The co-investment portfolio is comprised of what the Office of the CIO deemed to be the best opportunities brought to it by its partners. Since the Office of the CIO was investing greater amounts with fewer managers, it was being offered more co-investment opportunities, but would continue to be highly selective. In response to a question from Regent Makarechian, Mr. Beil explained that the 41.6 percent return on co-investments in the last fiscal year was driven by three transactions in particular, and underlying broader profit growth across the co-investment portfolio. Mr. Bachher said that four years prior the average size of an Office of the CIO co-investment was $15 million to $20 million, while it was not unusual currently for a co-investment to be $200 million. A $175 million co-investment in Duff and Phelps had been extremely lucrative and was without management fees or carry.

Regent Morimoto asked if co-investments were made alongside existing buyout partners. Mr. Beil said he would consider opportunities from any partner, but more than 95 percent of co-investments had been made with existing buyout partners. Mr. Bachher added that potential co-investment partners value clarity, decisiveness, and a precise timeframe for responsiveness on the part of potential partners. UC’s investments governance structure provided the Office of the CIO the flexibility to respond within days, which was a large advantage.

Regent Morimoto asked about the anticipated size of the co-investment portion of the private equity portfolio and of individual investments in the future. Mr. Beil said he intended co-investments to become 25 percent to 30 percent of the private equity allocation for both the GEP and UCRP. His team was moving in the direction of more standard sizes of individual investments. The size of investments would be roughly $75 million for the GEP and $175 million for UCRP. There would be some opportunities for the GEP and UCRP to invest together.

Chancellor Khosla congratulated the Office of the CIO on its effort to reduce management costs and asked how much of private equity returns were attributable to lower expenses and how much to investment acumen. Mr. Bachher explained that the 2.6 basis point overall internal operating expense of the Office of the CIO was on a base of the total $120 billion assets under management. Regent Makarechian added that UC's co-investments saved the typical two percent management fee plus the 20 percent of profits, typical for private equity. Mr. Bachher said the Office of the CIO's focus on reducing costs allowed it to mitigate private equity's generally high management fees with the fee savings from co-investments. Lower fees can also be negotiated in other asset classes, such as real estate.

Regent Anderson asked if the Office of the CIO should invest more in its own staff to increase its ability to develop co-investment opportunities. Mr. Bachher answered in the affirmative. Subcommittee Chair Sherman added that many co-investment opportunities are invitations from the Office of the CIO's commingled investment partners. Mr. Bachher cautioned that co-investments have a large potential investment risk as well as risk of adverse publicity.

Senior Managing Director Steven Sterman said his fixed income team of eight with an average tenure at UC of ten years managed the $40 billion fixed income portfolio, including $7.5 billion in portfolio cash at year's end. Of the fixed income portfolio, 85 percent was actively managed, with the remaining 15 percent passively managed, mainly the strategic allocation to emerging market fixed income, which was 100 percent passively managed. The fixed income portfolio is 90-percent managed internally by the fixed income team, which selects securities and executes trades on the Office of the CIO trading desk.

Mr. Sterman explained the role of the fixed income portfolio. In working capital, the higher allocation to fixed income dampens overall volatility and provides income for the campuses' operating budgets. In the pension, fixed income provides diversification away from the riskier asset classes, cash flow to pay pension liabilities, and liability matching. In the GEP, fixed income provides liquidity to fund more tactical and opportunistic trades across asset classes, to generate cash flow to pay obligations annually, and to seek returns opportunistically.

Mr. Sterman discussed key marketplace risks, particularly interest rate risk and credit risk. Interest rate risk had been playing out for three years, since the Federal Reserve Board of Governors began to raise interest rates gradually. Since late 2015, long-term Treasury bill rates had increased more than 100 basis points. To mitigate that risk, the duration of higher quality core fixed income in UCRP had been reduced to shorter than the benchmark; the shortened duration had contributed to returns above the benchmark. More yield achieved by underweighting U.S. Treasury securities and increasing allocation to spread sectors had offset the effects of the interest rate increase. Mr. Sterman expressed his view that, although the Federal Reserve would continue to raise interest rates into mid-2019 before pausing to evaluate the cumulative impact on the economy, much of the interest rate risk was past. He predicted that inflation would decelerate, rather than accelerate. Mr. Sterman had therefore extended the duration of the core fixed income portfolio to close to the benchmark duration.

However, Mr. Sterman expressed his view that, unlike interest rate risk, credit rate risk had not yet played out in the market. Leverage had crept up and lending terms had softened. Mr. Sterman anticipated that the cumulative impact of rate increases and the withdrawal of liquidity would have some effect in 2019 or 2020. Mr. Sterman's team was managing credit risk by selling $500 million of investment-grade credit in UCRP, moving from an overweight to a market weight in credit. He anticipated possibly selling another $250 million to $500 million to achieve an underweight position, to be able to profit from a market dislocation. His team was being very selective in high-yield credit.

Fixed income performance reflected the low-rate environment. Core fixed income generated negative returns. The benchmark returns for the past fiscal year were negative, However, all fixed income portfolios outperformed their benchmarks. Selectivity and patience would be key in 2019 and 2020, waiting for better opportunities to assume risk. The emphasis would be on preserving capital rather than making money.

Senior Managing Director Gloria Gil explained the role of the real estate asset allocation. When the Office of the CIO's real estate program was started 12 years ago, its purpose was diversification, as it had low correlation to public securities; enhanced returns of income and appreciation; and as an inflation hedge. The portfolio had grown to $4 billion in 12 years. In 2006, when the real estate program was started, core real estate was very expensive, so the Office of the CIO focused on value add and opportunistic assets. In 2008, the recession hit and the Office of the CIO started its separate account program, allocating $1 billion to managers, instructing them to wait patiently for opportunities for distressed assets. The separate account program started buying assets in 2010, acquiring some assets at half price.

Ms. Gil reviewed real estate performance. Core assets returned 11.7 percent for the past seven years, with the best-performing assets in the separate account program. The separate account build-to-core mandate, which Ms. Gil said was essential to the program's success, was to build its own core assets from assets bought at wholesale, improving them, and then selling them. Her team analyzed each year whether to hold or sell these assets. The Office of the CIO had full control with its external managers, including the ability to terminate them at any time, and alignment of interests. The Office of the CIO did not pay disposition fees, but it did pay acquisition fees, meaning that managers were not incentivized to sell, but rather to participate in value creation knowing that they could reinvest in the next asset.

Ms. Gil anticipated that the real estate portfolio would grow from its current $4 billion to $5.6 billion in four to six years. This would be accomplished by patient, selective investing. The portfolio was tilted geographically toward the Pacific region, which outperformed U.S. markets in the past 20 years. She would seek to diversify the portfolio into various types of holdings, for instance seeking affordable multi-family housing in New York and on the West Coast, attractive because of the shortage of housing. Single family housing for first-time buyers or first-time move-ups was also attractive.

Interest rate risk would be mitigated through swaps or fixed rates for separate accounts. In addition, fully valued assets are sold. The portfolio was positioned to be resilient in a recession by focusing on senior and student housing, medical offices, life science and laboratories, grocery-anchored retail, and data centers, a new addition to the portfolio. Her office would use its existing relationships to invest with little competition and lower fees. Ms. Gil intended to deploy about $700 million per year and grow to 80 percent U.S. and 20 percent international.

Regent Makarechian asked why the GEP real estate portfolio earned four percent more than the UCRP real estate portfolio. Ms. Gil explained that in recent years more value added and opportunistic assets were added to the GEP and core assets were added to UCRP, resulting in a divergence of return over time. A portion of the value-added and opportunistic would be added to UCRP.

In response to another question from Regent Makarechian, Ms. Gil confirmed that her office made co-investments with its partners, which was part of the total allocation.

Regent Anderson asked why different products were allocated to the GEP or UCRP. Mr. Bachher explained that the total allocation in the GEP for real assets, meaning real estate and real assets, was slightly under ten percent. Assets were allocated to the GEP or UCRP proportionally to the size of the assets. Ms. Gil explained that core assets that produced more income would better serve the pension and higher-yielding assets would better serve the GEP. Mr. Bachher noted the importance of diversifying the real estate portfolio.

Managing Director John Ritter reported that the real assets portfolio was in transition from one mainly in natural resources to one more evenly distributed among opportunistic, natural resources, and infrastructure, three categories with varying characteristics that added diversification. The role of the real assets portfolio is to add diversification by performing well at times when other asset classes such as equities do not perform well. The real assets portfolio would be highly industry and sector focused, invested in a range of holdings from core to venture. To mitigate risk, Mr. Ritter would seek investments in structured products with more downside protection. The number of real assets external managers had been reduced and the investment size increased. The average investment size over the past two years was close to $200 million with very strategic managers who could also drive co-investments.

Mr. Ritter reported that real assets returned 9.77 percent for the past fiscal year. Performance was much worse over the past three-, five-, and seven-year periods, largely driven by a severe underperformance in natural resources, mostly private equity oil and gas investments. Infrastructure and opportunistic assets had performed well. Regarding risk, he anticipated volatility in commodities. Real assets often had high leverage and would be affected by increases in interest rates. Mr. Ritter had avoided investing in highly leveraged core assets for the past two years. He anticipated opportunities in growth of global digital telecommunications, public real assets, and insurance-related strategies, and sought to increase co-investments and geographic diversity.

Senior Managing Director Edmond Fong discussed the absolute return program, which he had managed since 2014. The Office of the CIO did not view hedge funds as an asset class, but rather as a collection of investment strategies that might share a common legal structure and fee structure. No single hedge fund strategy would perform well in all environments. The range of hedge fund strategies is quite varied, and their use depends on the objective. The objective of the Office of the CIO's absolute return program was to generate high-quality returns over the long term of a market cycle and, importantly, independent of market moves.

Since 2014, the absolute return portfolio had been restructured to meet this objective. First, the portfolio was de-risked by reducing exposure to high risk strategies. Second, the team sought to find areas of value in hedge funds. Fair criticisms had arisen in investment circles about the hedge fund industry, with a growing divide between asset owners and partners. It was important to determine how to align a hedge fund with UC's interests, being mindful of management fees. The Office of the CIO was willing to pay management fees linked to performance through hurdle rates. It was also important to find fund managers willing to invest alongside the Office of the CIO, so the managers would have a vested interest. The Office of the CIO should be paid at the same time as the hedge fund, not afterwards. It was also important to find hedge funds that would have aligned values with UC, including consideration of Environmental, Social, and Governance factors, and diversity and inclusion. The number of external absolute return managers was reduced from 35 managers to 15 currently. Currently, the portfolio was being re-risked.

Mr. Fong discussed performance of the absolute return portfolio, which had returned 60 percent of equity returns for one-, seven-, and ten-year periods, but with less than one-third the risk of the equity market. For the past fiscal year, absolute return earned 6.4 percent with the lowest equity beta ever for the absolute return portfolio. Historically the absolute return beta to the equity markets had been between 0.3 and 0.4; currently the beta was less than 0.1. Mr. Fong expressed confidence that the absolute return portfolio could generate these returns without being dependent on a buoyant equity market. The risk and return characteristics of the portfolio would change in the future as the portfolio was re-risked.

Mr. Fong displayed a graph showing the number of absolute return strategies and external managers over time, demonstrating an increasingly simplified approach while growing the portfolio from $4 billion to $7.5 billion. The average investment had grown to $0.5 billion, affording the Office of the CIO a large seat at the table and making discussions about alignment easier. A new opportunistic strategy was initiated five years prior and is an increasing portion of the portfolio. During the prior fiscal year, the portion of opportunistic investments increased from 30 percent of the portfolio to 50 percent and was still increasing. Opportunistic investments are those that do not fit neatly in another category of hedge fund strategy. The Office of the CIO structures opportunistic investments to sometimes participate in profit-sharing or revenue sharing, with terms and conditions that allow better risk management. Opportunistic investments might be temporary in nature, for instance as a byproduct of a market dislocation.

Mr. Fong asserted that the way these strategies are executed could create value, starting with research, followed by canvassing the market landscape and curation of potential partners through collaborative discussions. All investments with such a bespoke mandate had outperformed those managers' other products. Mr. Fong cautioned that the business of alternative investments was difficult, requiring providing solutions to business partners, and offering unique scale and flexibility. Although returns of both public equities and hedge fund indices were poor during the prior month of October, the absolute return portfolio had positive returns.

Addressing potential future opportunities, Mr. Fong expressed his desire to avoid investing in crowded markets. The Office of the CIO was reducing its holdings in systematic or quantitative strategies as $2 trillion in capital was seeking those strategies and that amount could double in the next three to five years. Also, while the use of leverage to enhance returns in a number of strategies was increasing in the market, the Office of the CIO preferred rather to focus on value and dislocation, without the use of leverage. Mr. Fong saw opportunities in areas that would show secular growth should there be a cyclical downturn or recession. The Office of the CIO would seek opportunities in asset management, Asian and European special opportunities, niche financing strategies, and distressed strategies.

Mr. Bachher summarized that his office was not currently seeking to invest in assets tied to economic growth, but was seeking uncorrelated opportunities. In the short term, he was satisfied with asset allocations and would be patient in the current risky environment.

The meeting adjourned at 5:10 p.m.

Attest:

Secretary and Chief of Staff

Effective:

UNIVERSITY OF CALIFORNIA
BLUE AND GOLD ENDOWMENT
INVESTMENT POLICY STATEMENT

POLICY SUMMARY/BACKGROUND

The purpose of this Investment Policy Statement ("Policy" or "IPS") is to define the objectives and policies established for the management of the investments of the University of California BLUE AND GOLD ENDOWMENT (BGE). The management of BGE is subject to state and federal regulations and laws, and all other University investment policies, which may not be listed in this document. The investment policy statement consists of the following sections:

- Investment Objectives
- Payout Policy
- Monitoring and Reporting
- Conflicts of Interest
- Disclosures
- Policy Maintenance

This policy reflects the Governance Framework outlined in Bylaws 22 and 23 of the University and the Finance and Capital Strategies Committee Charter. The Board defines the goals and objectives of BGE and is responsible for establishing and approving changes to this IPS. The Finance and Capital Strategies Committee and Investments Subcommittee are responsible for establishing the Asset and Risk Allocation Policy (with Board approval), which defines the strategic asset allocation, risk tolerance, asset types, and benchmarks of the portfolio.

The Chief Investment Officer (or "Office of the Chief Investment Officer") is responsible for implementing the approved investment policies and developing investment processes and procedures for asset allocation, risk management, investment manager selection and termination, monitoring and evaluation, and the identification of management strategies that will improve the investment efficiency of BGE assets.

POLICY TEXT INVESTMENT OBJECTIVES

1. Overall Objective

BGE is an investment pool established by the Regents and is available to UC campuses and other related entities. The objective of BGE is to provide a low cost, liquid, diversified investment vehicle in which the various UC organizations can invest their long-term excess capital reserves to earn a higher return than would otherwise be expected from short-term cash management vehicles (such as TRIP and STIP). This objective is subject to risk and liquidity tolerances established with the Office of the President, Chief Financial Officer, and campuses. BGE seeks to achieve this objective by taking advantage of the economies of scale of investing a large liquid pool of assets. The pool intends to invest in the most liquid and transparent investments available that provide appropriate market exposure, at the lowest possible expense, in order to provide the opportunity for immediate withdrawal of funds by an investor with minimum impact on other investors in the pool.

2. Return Objective

BGE seeks to maximize its return on investment, consistent with levels of investment risk as stated below that are prudent and reasonable given long-term capital market expectations and the overall objectives of BGE, including liquidity maximization and expense minimization. The performance of BGE will be measured relative to its objectives and policy benchmark found in the Asset and Risk Allocation Policy.

3. Risk Objective

While the Board recognizes the importance of the preservation of capital, it also recognizes that to achieve BGE's overall objectives requires prudent risk-taking, and that risk is the prerequisite for generating investment returns. Therefore, investment risk cannot be eliminated but should be managed. Risk exposures should be identified, measured, monitored, and tied to responsible parties as identified in the Asset and Risk Allocation Policy; and risk should be taken consistent with the BGE's objectives and the expectations for return from the risk exposures. The BGE should have a low probability of loss of capital and/or a loss of purchasing power over a full market cycle (typically four to eight years).

4. Payout Policy

BGE will have an annual payout rate that provides investors with a source of income that is perpetual, growing, and predictable.

The objective of the payout rate is to allow BGE to grow on a total return basis while "smoothing" the payout in order to mitigate disruptions in the budgets of end-investors throughout economic and market cycles.

The payout rate for eligible assets in BGE is 3.75%.

5. Sustainability Objective

The Office of the Chief Investment Officer (OCIO) shall incorporate environmental sustainability, social responsibility, and governance (ESG) into the investment evaluation process as part of its overall risk assessment in its investments decision-making. ESG factors are considered with the same weight as other material risk factors influencing investment decision-making.

The OCIO uses a proprietary sustainability framework to provide core universal principles that inform the decisions and assist in the process of investment evaluation. The OCIO manages BGE consistent with these sustainability principles. The Framework can be found on the OCIO website in the sustainability section.

MONITORING AND REPORTING

The OCIO is responsible for monitoring the portfolio and investment managers on an ongoing basis. The OCIO should monitor and report to the Investments Subcommittee, Finance and Capital Strategies Committee, and Board of Regents on the following items.

1. Asset and Risk Allocation

2. Investment Performance and Attribution (against benchmarks identified in the **BGE Asset and Risk Allocation Policy**)

3. Material Changes to Organization and Investment Strategy

4. Potential Material Issues and Risks

While short-term results will be monitored, it is understood that BGE’s objectives are long-term in nature and progress towards these objectives will be evaluated from a long-term perspective.

DISCLOSURES

The Chief Investment Officer provides investment-related information on BGE to the Regents' Investments Subcommittee in a manner consistent with the requirements outlined in this policy. Current and historical materials are publicly available on the Regents' website The Chief Investment Officer's Annual Report for the most recent fiscal year is also available on the Chief Investment Officer's website.

RESTRICTIONS

The Regents require that purchase of securities issued by tobacco companies and companies with business operations in Sudan are prohibited in separately managed accounts. The Chief Investment Officer will determine what constitutes a tobacco or Sudan company based on standard industry classification of the major index providers and must communicate this list to investment managers annually and whenever changes occur.

COMPLIANCE/DELEGATION

The BGE Investment Policy Statement should be reviewed at least annually and updated as necessary. Revisions may be recommended by the OCIO, Investments Subcommittee, Finance and Capital Strategies Committee, and approved by the Board of Regents.

NO RIGHT OF ACTION

This policy is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the University of California or its Board of Regents, individual Regents, officers, employees, or agents.

PROCEDURES AND RELATED DOCUMENTS

BGE Asset and Risk Allocation Policy [Pending discussion and approval by the Board]

Investment Implementation Manual*

*Changes to the Investment Implementation Manual do not require Regents approval, and inclusion or amendment of references to these documents can be implemented administratively by the Office of the Chief Investment Officer.

Attachment 2

UNIVERSITY OF CALIFORNIA

BLUE AND GOLD ENDOWMENT

ASSET AND RISK ALLOCATION POLICY

UNIVERSITY OF CALIFORNIA BLUE AND GOLD ENDOWMENT
ASSET AND RISK ALLOCATION POLICY

POLICY SUMMARY/BACKGROUND

The purpose of this Asset and Risk Allocation Policy (Policy) is to define the asset types, strategic asset allocation, risk management, benchmarks, and rebalancing for the University of California BLUE AND GOLD ENDOWMENT (BGE).

POLICY TEXT ASSET CLASS TYPES

Below is a list of asset class types in which BGE may invest so long as they do not conflict with the constraints and restrictions described in the BGE Investment Policy Statement. The criteria used to determine which asset classes may be included are:

- Positive contribution to the investment objective
- Widely recognized and accepted among institutional investors
- Low cross-correlations with some or all of the other accepted asset classes
- Highly liquid
- Highly transparent
- Available at minimal expense

Based on the criteria above, the types of assets for building the portfolio allocation are:

1. Growth

Includes publicly traded common stock of issuers domiciled in U.S., Non-U.S., and Emerging Markets. The objective of the growth portfolio is to generate investment returns while maintaining high levels of liquidity and transparency through a diversified portfolio of common stocks.

2. Income

Income includes a variety of income-related asset types. The portfolio will invest in interest-bearing and income-based instruments such as corporate and government bonds, inflation-linked securities, cash, and cash equivalents. The objective of the income portfolio is to provide interest income and necessary liquidity for cash flows and portfolio rebalancing needs and to diversify the risks present in the growth portfolio.

3. Derivatives

A derivative is a contract or security whose value is derived from another security or risk factor. There are three fundamental classes of derivatives – futures, options, and swaps – each with many variations; in addition, some securities are combinations of derivatives or contain embedded derivatives. Use of derivatives to create economic leverage is prohibited, except for specific strategies only. Permitted applications for derivatives are: efficient substitutes for physical securities, managing risk by hedging existing exposures, to implement arbitrage or other approved active management strategies.

Given the mandate for liquidity, transparency, and minimal expense, a passive implementation of all assets is expected. Derivatives are expected to be used to improve liquidity and minimize tracking error to passive indices.

Each asset class is assigned a benchmark that represents the opportunity set and risk and return characteristics associated with the asset class.

RISK MANAGEMENT

Three principal factors affect BGE's financial status: 1) budget use, 2) payout, and 3) investment performance. The level of risk tolerance will take account of all three factors. At certain levels of assets and a given payout policy, it could be possible that the investments do not achieve the necessary performance to meet the spending budget. The result would be that either payout policy, use in budget, or risk tolerance would have to be changed.

There are different types of risk tied to various responsible parties at each level of BGE investment management. Thus, different risk metrics are appropriate at each level.

The **principal risks** that impact the BGE, and the parties responsible for managing them are as follows:

- Capital market risk is the risk that the investments decline in value or do not create a positive real rate of return over a full market cycle. Responsibility for determining the overall level of capital market risk lies with the Board at the recommendation of the Investments Subcommittee. The implementation of this risk is the responsibility of the Chief Investment Officer who will employ a passive investment program.
- Liquidity risk is the risk that investments cannot be liquidated in time to meet requested redemption requests.

Although the management of investment portfolios may be outsourced, investment oversight and risk management are primary fiduciary duties of the Board that are delegated to and performed by the Chief Investment Officer. The Chief Investment Officer shall report on risk exposures and the values of the several risk measures to the Board.

Product level (Board, Investments Subcommittee, and Office of the Chief Investment Officer)

- Payout Risk (insufficient assets to meet planned payout)

  - Measures the risk of inappropriate investment policy and strategy

    - Loss of purchasing power and loss of capital

- Total Investment Risk (volatility of total return)

    - Measures the risk of asset allocation policy

Implementation level (Office of the Chief Investment Officer)

- Active Risk or "Tracking Error" (volatility of deviation from style or benchmark)

    - Measures the risk of unintended exposures or ineffective implementation
    - If passive implementation is used, active risk also captures tracking error caused by asset allocation deviations from the strategic allocation

- Liquidity Risk

Risk Measures:

Tracking Error: BGE shall be managed so that its annualized tracking error budget shall not exceed 100 basis points. This budget is consistent with the ranges around the combined asset classes and incorporates asset / sector allocation and security selection differences from the aggregate benchmark.

Liquidity Risk: BGE shall be managed so that at least 20% of its total assets can be liquidated within 3 business days.

The Office of the Chief Investment Officer (OCIO) is responsible for managing risk and shall implement procedures and safeguards so that the combined risk exposures of all portfolios taken together are kept within risk bands. Further, within limits of prudent diversification and risk budgets, total and active risk exposures are fungible. That is, the OCIO may allocate risk exposures within and between asset types in order to optimize return.

STRATEGIC ALLOCATION

The purpose of the Strategic Asset Allocation is to reflect BGE's purpose and objectives, as well as the investment beliefs and organizational capability of the OCIO. The actual portfolio exposures will deviate from the Strategic Asset Allocation as a result of price drifts, opportunity set, and value-adding activities of the OCIO.

The investment strategy of BGE will incorporate the risk tolerance of the Board, Finance and Capital Strategies Committee, and the Investments Subcommittee, the relationship between current and projected assets, evolution of the University's financial needs, namely BGE payout, budget, contributions, and growth expectations.

UNIVERSITY OF CALIFORNIA BLUE AND GOLD ENDOWMENT
ASSET AND RISK ALLOCATION POLICY

Below are the strategic asset allocation long-term weights and allowable ranges:

Table 1

	Strategic Asset Allocation	Allowable Ranges Minimum	Maximum
Growth	**70%**	**60%**	**80%**
Income	**30%**	**20%**	**40%**
Total	**100%**		

The program will invest primarily in liquid, low cost, marketable securities.

BENCHMARKS

The following criteria have been adopted for the selection of benchmark indices. It is understood that not all benchmarks will meet the entire list of criteria, but ideally, benchmarks that meet most of the criteria will be selected. There may be instances where tradeoffs are made between benchmarks that meet some of the criteria but not others.

1. **Unambiguous**: the names and weights of securities comprising the benchmark are clearly delineated.

2. **Investable**: is possible to replicate the benchmark performance by investing in the benchmark holdings.

3. **Measurable**: it is possible to readily calculate the benchmark's return on a reasonably frequent basis.

4. **Appropriate**: the benchmark is consistent with investment preferences or biases.

5. **Specified in Advance**: the benchmark is constructed prior to the start of an evaluation period.

6. **Reflects Current Investment Opinion**: Investment professionals in the asset class should have views on the assets in the benchmark and incorporate those views in their portfolio construction.

Benchmarks are a tool against which to measure the effectiveness of investment strategy either at a total fund level, at an asset class or strategy level, or at the mandate level. Based on the benchmark selection criteria, the following strategic policy benchmarks have been chosen:

Table 2

Asset Class	Benchmark
Growth	MSCI All Country World Index (ACWI) Investable Market Index (IMI) Tobacco Free - Net Dividends
Income	Bloomberg Barclays US Aggregate Index

The **Total Portfolio Benchmark** is a weighted average consisting of each of the monthly returns of the benchmarks noted above weighted by the Strategic Asset Allocation percentages.

REBALANCING

There will be periodic deviations in actual asset weights from the strategic target weights. Causes for periodic deviations are market movements, cash flows, tactical tilts, and asset selection. Significant movements from the asset class policy weights will alter the intended expected return and risk of BGE. Accordingly, BGE may be rebalanced when necessary to ensure adherence to this policy and the Investment Policy.

The OCIO will monitor the actual asset allocation. The Board directs the OCIO to take all actions necessary, within the requirement to act prudently, to implement the asset allocation in a manner that ensures that BGE achieves its risk and return objectives.

The OCIO shall assess and manage the trade-off between the cost of rebalancing and the active risk associated with the deviation from Strategic Asset Allocation weights. The Chief Investment Officer may delay a rebalancing program when the Chief Investment Officer believes the delay is in the best interest of BGE.

COMPLIANCE/DELEGATION

The BGE Asset and Risk Allocation Policy Statement should be reviewed at least annually and updated as necessary. The Investments Subcommittee may recommend action which will be placed on the Consent Agenda for approval by the Board.

NO RIGHT OF ACTION

This policy is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the University of California or its Board of Regents, individual Regents, officers, employees, or agents.

PROCEDURES AND RELATED DOCUMENTS

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