The Regents of the University of California

INVESTMENTS SUBCOMMITTEE
July 11, 2017

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

Members present:	Regents Lemus, Sherman, and Zettel; Ex officio member Makarechian; Advisory member White
In attendance:	Regent Elliott, Secretary and Chief of Staff Shaw, Chief Investment Officer Bachher, Chief of Staff and Special Counsel Drumm, 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 May 16, 2017 were approved.

3. **UPDATE ON INVESTMENT PRODUCTS**

[Background material was provided to the Subcommittee 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 reported that it had been a good year for all investment products of the Office of the CIO. While final numbers for the year would be reported at the September meeting, annual returns for the pension and endowment of around 13 percent to 14 percent were anticipated. As of June 30, 2016, Office of the CIO assets were $97.6 billion; those assets had grown to around $110 billion by June 30, 2017. Assets were invested primarily in the U.S., and the U.S. market had been a strong performer. The Office of the CIO would increase investment in other parts of the world, particularly Europe and Asia, over the upcoming three to five years. Total assets were invested 52 percent in public equities, 30 percent in fixed income, and 14 percent in other assets. Gains in public equities had been the primary driver of returns for the fiscal year.

Mr. Bachher reported that he had assigned Managing Director Edmond Fong to lead the General Endowment Pool (GEP). Senior Managing Director Steven Sterman described the fixed income market environment. In the prior three months, economic data from around the world had been positive and supportive of continued growth. Inflation data in the U.S. and other places had continued to be below expectations, important to relieve the pressure on the Federal Reserve Board of Governors to raise interest rates more quickly than planned, allowing a continued deliberate pace of rate normalization. In June, the Federal Reserve Board of Governors did increase interest rates again, as anticipated, and reiterated its plan for gradual normalization of rates. In addition, the Federal Reserve Board of Governors provided more detail about its intent to reduce its Treasury bond balance sheet beginning in late 2017, from $4 billion closer to $2 billion over time. Mr. Sterman said that plan appeared to be very manageable and was unlikely to cause turbulence in fixed income markets. He expressed his outlook that the U.S. economy would continue in a slow-growth environment of around two to 2.5 percent of annual gross domestic product growth. He did not anticipate a dramatic increase in interest rates, but perhaps long-range rates would drift slightly higher. In this continued low-rate environment, core fixed income returns would remain low, around 2.5 to three percent. His office would search for areas of opportunity to find more yield in fixed income.

Senior Managing Director Scott Chan reported that public equities had experienced a strong run and the question remained how much further equity prices could increase. Passive global equity markets gained 18 percent in the past fiscal year. The public equity portfolio of the Office of the CIO, invested in both active and passive funds, had returned 21 percent for the fiscal year, including three percent or $1.2 billion of value added. Economic conditions that drove these results were the reverse of those of the prior few years. Earnings grew from 11 to 23 percent across all regions. In the prior two years there had been flat to declining earnings growth. Markets in China had stabilized and European markets increased 25 percent for the fiscal year; Chinese markets increased 32 percent; emerging markets increased 28 percent. U.S. public equity markets rose 18 percent. With strong earnings growth, procyclical sectors were the best performers. The technology sector increased 36 percent; financials rose 34 percent; materials stocks rose 25 percent. Mr. Chan anticipated a moderation of public equity gains, with slower earnings and cash flow growth. Equity valuations were elevated and more bifurcated around the world. His office would shift some holdings, both passive and active, from the U.S. to international markets.

Mr. Fong displayed a slide showing assets under management for the GEP and the ten UC campus foundations. At the beginning of the past fiscal year, total collective assets were $15.4 billion; he anticipated total assets of $17.5 billion at the end of this fiscal year. The GEP had paid out $4.2 billion over the past 20 years. From fiscal year 2014 through the end of the 2018 fiscal year, there would be inflows to the GEP of $2.15 billion, almost half of the payout of the prior 20 years. Mr. Fong asserted that these inflows reflected a deepening engagement of the Office of the CIO with the campuses.

Committee Chair Sherman asked about the source of the inflows. Mr. Fong stated that the bulk of 2017 inflow was proceeds from UCLA’s sale of the prostate cancer drug Xtandi royalty rights. In addition, $375 million was from UCSF’s and UC Irvine’s funds functioning as endowments (FFE). Mr. Bachher explained that an FFE represented a chancellor’s electing to move monies from the campus balance sheet to the GEP. The campus could take a payout or an extraordinary payout at any time based on its needs.

UC Santa Barbara had elected to move its endowment, which had been managed by Goldman Sachs for the seven years prior, to the GEP. The bulk of the remaining inflow was from UC campuses reallocating from the Total Return Investment Pool (TRIP) and the Short Term Investment Pool (STIP) to the GEP.

Regent Makarechian asked about management fees saved by UCSB's moving its endowment from Goldman Sachs to the GEP. Mr. Bachher estimated that the campus saved about 1.5 percent. Investment Officer Susie Ardeshir said UCSB had been paying more than two percent, which included an advisory fee, underlying management fees, and performance fees. In response to a further question from Regent Makarechian, Ms. Ardeshir stated that UC Santa Cruz and UC Merced had always invested their endowments completely in the GEP. UC San Diego, UC Irvine, and UC Davis had a portion of their endowments invested in the GEP, ranging from UC Davis at 20 percent to UC San Diego at 60 percent. UC Berkeley, UCLA, and UCSF have management companies oversee their endowments exclusively. UC Riverside has an external advisor who manages its endowment. Regent Makarechian asked about those management fees. Ms. Ardeshir responded that the management fees charged by UC Berkeley's, UCLA's, and UCSF's management companies were 30 basis points (bps). Mr. Bachher said that amount represented the operating cost of the management office. External management costs would be in addition to that operating cost. In response to a further question from Regent Makarechian, Mr. Bachher said the campus' external management fees were not clearly reported, but he would begin to inquire as to those fees. Mr. Bachher noted that the management fee of the Office of the CIO is three bps. For a $110 billion portfolio, the difference between 30 bps and three bps in management fees would be $270 million annually.

Regent Makarechian asked why the campus foundations did not all invest in the GEP rather than use their own management companies. Mr. Bachher commented that campus donors generally preferred to give funds directly to the campuses. His office was happy to partner with the campuses, for instance in alternative investments. As of July 1, 2017, the Office of the CIO inaugurated a unitized product of its private equity, real estate, and absolute return assets that the campuses could purchase.

Mr. Fong reported that the GEP had year end assets of $10.6 billion, increasing in value in the fiscal year from $9.1 billion, with $900 million in market gains, $300 million in value added, and a net cash inflow of $300 million. The GEP asset allocation was 2.5 percent overweight in public equities, nine percent underweight in alternatives, and eight percent overweight in cash. Mr. Fong said this allocation generally aligned the portfolio with the benchmark risk, even with the overweight cash holding. The cash position enabled selective investing in opportunities in alternative investments.

The GEP returned 13.6 percent for the fiscal year, including 2.4 percent value added above the benchmark return of 11.2 percent. The driver of performance was public equities. Mr. Chan reviewed the GEP's public equity portfolio, which gained 22 percent, or $1 billion, $860 million from market gains and $135 million in value added. The public equity portfolio is managed externally, 70 percent actively and 30 percent passively. The focused active management program added to returns during the fiscal year. Over the past three years, the number of public equity external managers had been reduced from 60 to 14, with an average investment of $260 million with those 14 managers. The portfolios of those external managers are also focused, holding an average of just 20 to 30 stocks. His office preferred managers investing outside of the U.S., whose deep fundamental research gives them a competitive advantage, who tend to buy less highly valued stocks, and whose long-term focus is aligned with the Office of the CIO. In a year in which fundamentals, cash flow, and earnings mattered, these portfolios strongly outperformed. In non-U.S. stocks, these managers gained 34 percent, compared with the 20 percent gain in the benchmark. In China, one manager gained 36 percent, while the benchmark gained 23 to 28 percent. An overweight in financials benefited the portfolio, as a manager in that area gained 48 percent. Mr. Chan expressed his view that because the portfolio is different from the benchmark it would be well-positioned in the current market where values were elevated and risk had become higher. Mr. Bachher commented that in the prior fiscal year the markets had worked against the public equity portfolio's allocation. Over the longer term, the strategy would pay off.

Mr. Fong stated that complete valuations for alternative investments would be available by the September meeting. Preliminary results indicated that private equity gained 14 to 15 percent for the fiscal year. Public and private equity contributed about 86 percent of GEP gains.

Committee Chair Sherman asked what hedge was in place, should markets decline, and whether it was just in the asset allocation or an active hedge. Mr. Chan responded that the public equity portfolio had a long-term bias and did not have an active hedge, but was positioned to capture long-term growth. Mr. Fong added that the large cash position would moderate risk and serve as a hedge for downside market scenarios. Mr. Bachher added that the long-term GEP asset allocation to public equity had been lowered from 45 percent to 30 percent. He noted that active hedging strategies have an associated cost and holding cash provided a buffer.

Committee Chair Sherman asked if there were high-water marks in addition to hurdle rates for managers, so they would have to recoup losses and then reach hurdle rates to be paid incentive fees. Mr. Chan commented that 70 percent of the public equity portfolio managers had incentive fees and 70 percent of those had hurdle rates, half of which crystallize over a three-year period and had high-water marks in their incentive fee structure. Linking the incentive fees to a longer period of time helps align interests. Mr. Bachher noted the importance his office had placed on reducing management costs.

Mr. Fong summarized that GEP returns had been excellent for the fiscal year. His focus would be on long-term results, particularly for the GEP, the purpose of which is to provide its payout. The public equity allocation would be reduced over time and the allocation to private equity would be increased as opportunities present themselves. Mr. Bachher commented that three years prior the GEP had about 200 external managers, while by June 30, 2017, that number had been reduced to 85 with larger investments.

Committee Chair Sherman stated that having fewer external managers would distinguish the portfolio from the index.

Mr. Sterman discussed the UC Retirement Plan (UCRP), which had excellent returns for the fiscal year. As of May 31, 2017, UCRP had assets of $61.4 billion, up from $54.1 billion as of June 30, 2016. He noted that the discount rate had been reduced the prior year from 7.5 percent to 7.25 percent. At this July meeting, the Regents would consider a proposal to increase the employer contribution from 14 percent to 15 percent. A year prior UCRP's funding ratio was in the low 80 percent range. With the increase in assets from market gains and active management, Mr. Sterman anticipated that the funding ratio would improve several points. The demographics of UCRP indicate an increase in the number of retirements over the upcoming five to ten years, putting pressure on UCRP's payout ratio.

Committee Chair Sherman asked about demographic projections, given that UCRP currently had two active employees for every retired employee. Mr. Sterman commented that the proportion of retired employees would increase. Regent Makarechian commented that the Accountability Report indicated that a large number of active employees were currently at retirement age. He asked if comparable statistics were available for other institutions. Mr. Bachher said he would provide information from a study on the health of UCRP conducted at the request of the Office of the CIO; that study contained information about comparable programs. Regent Makarechian requested information about the effect of the new pension tier on UCRP.

Mr. Sterman reported that $6.5 billion of UCRP's gains for the fiscal year were market gains, and $1 billion was value added. Net cash flow was slightly negative, at minus $200 million, reflecting offsetting contributions, payouts, and infusion of a $450 million loan from STIP. In the 2017-18 fiscal year, STIP would lend UCRP an additional $391 million, as approved by the Regents three years prior.

Faculty Representative White commented that any comparison of UCRP to other institutions' retirement plans should take into account the fact that UCRP had a 20-year contribution holiday. This lack of contributions was more the cause of UCRP's current funding status than impending retirements.

Regent Makarechian commented that UCRP was 100 percent funded during the period of no contributions. Mr. White agreed that UCRP was more than 100 percent funded at that time; in hindsight it would have been preferable to reduce rather than eliminate contributions. In addition, contributions should have been restarted more quickly when UCRP's funding status changed.

Mr. Sterman said that UCRP's asset allocation was the same as at the last report to the Subcommittee in May. The portfolio continued to be slightly overweight in public equities and cash, and underweight in private alternatives. Over several years, the public equity portfolio would be reduced when private equity opportunities become available.

An agreement had been made with a strategic partner, a large asset manager that would help the Office of the CIO find private equity opportunities.
Committee Chair Sherman asked about UCRP's long-term target allocation of zero cash and how future cash outflows would be funded. Mr. Bachher said this question involved the projected cash flows from the pension plan and whether the cash flows would be negative. Ms. Ardeshir responded that, as a result of the proposed increase in contributions and borrowing from STIP, cash flows were not projected to be negative for the upcoming three to five years, but could be negative thereafter depending on contribution levels.

Regent Zettel asked for the rationale for the difference between the UCRP current public equity allocation of 56.6 percent that would be reduced to a long-term allocation of 50 percent, and the GEP's 45 percent public equity allocation that would be reduced to a long-term allocation of 30 percent. Mr. Bachher commented that in the past the GEP's asset allocation resembled that of a pension plan. Changes to the GEP asset allocation made it more appropriate for a long-term portfolio, which could hold more illiquid, private assets. Compared with the top 20 U.S. endowments UC's endowment still would have twice as much public equity and half as much private equity. In UCRP, the increase to 56.6 percent public equity had largely been a function of market gains.

Regent Makarechian asked what employer and employee contributions to UCRP would have been required if STIP had not loaned UCRP $2.3 billion. Ms. Ardeshir expressed her belief that an additional four to six percent in aggregate contribution from employer and employees would have been necessary. She would verify that information.

Mr. Sterman reported that UCRP returned 13.6 percent for the fiscal year through May 31. The main driver of returns was public equities, which gained 21 percent. Mr. Chan added that the public equity allocation in UCRP gained $7.4 billion for the fiscal year, including $6.3 billion from market gains and more than $1 billion of value added through active management. Drivers in public equity were similar to those described for the GEP public equity portfolio. The number of active external managers in UCRP had been reduced from 60 to 28, moving from investing an average of $370 million per manager to $620 million per manager. That increase in scale enabled the Office of the CIO to negotiate management fee discounts. He pointed out that the UCRP portfolio has different scale and objectives from the GEP. The UCRP public equity portfolio is $34 billion, compared with GEP's $5 billion public equity portfolio. Mr. Chan intended to shift more UCRP public equity assets from U.S. stocks to non-U.S., and increase passive management from the current 40 percent to about 60 percent. The portfolio would be well positioned if market conditions favored fundamentals such as earnings, cash flow, and valuations.

Mr. Sterman summarized that UCRP gained 13.6 percent for the year, but he did not expect those returns to continue. Over 20 years, UCRP had earned 6.8 percent annually, which he pointed out was below the 7.25 percent discount rate. Mr. Bachher noted that Mr. Sterman oversees the working capital portfolios in addition to fixed income.

Chief Operating Officer Arthur Guimaraes discussed the UC Retirement Savings Program (UCRSP) with assets of $22.1 billion, having increased by $500,000 since the May meeting and by $2 billion over the past year, including $1 billion in contributions. The UCRSP includes participant investment options of target date funds, a group of core funds, and a brokerage window, and serves 310,000 participants. UCRSP includes the 403(b) pre-tax plan, the 457(b) plan, and a defined contribution plan. The target date funds became the default investment in 2014 and currently comprise almost one-third of all UCRSP assets.

Mr. Guimaraes reviewed the history of UCRSP. State Street Global Advisors had been selected to manage the UCRSP target date funds and would take on fiduciary responsibility for the asset allocation, operations, and communications for less than one bps in fees. That change would be implemented by early 2018.

Regent Makarechian asked why there were more participants in the UCRSP than in UCRP. Ms. Ardeshir commented that the additional participants in the UCRSP could be employees who had left UC before they were vested in the pension plan, safe harbor employees who did not qualify for participation in the pension plan, and part-time employees.

Mr. Sterman reported on the working capital pool with assets of $15.9 billion as of May 31, an important source of capital for UC campuses to achieve their objectives. TRIP had fulfilled expectations that it would earn more than STIP, to serve as a more productive use of UC resources over the long-term. TRIP's market gains and value added were offset by cash flow out from payouts to campuses and withdrawals by campuses to fund particular projects.

TRIP's asset allocation was very close to its long-term allocation, with a slight overweight to the growth component and slight underweight to the income component. Mr. Sterman did not contemplate any significant changes to the asset allocation at the present time. He would work with the Office of the CIO's consultants during the course of the year to review the asset allocation to see if any changes should be considered to improve investment outcomes. TRIP returned 7.3 percent for the fiscal year, one percent over its benchmark. Returns were driven largely by TRIP's public equity portfolio, which earned 18 percent invested 100 percent passively. All asset classes performed well. TRIP had earned 7.1 percent annually since its inception.

Committee Chair Sherman asked about TRIP's liquidity and how many days it would require to turn the portfolio into cash. Mr. Sterman said TRIP was highly liquid. The 50 percent of the portfolio in fixed income, most in public investment-grade fixed income, could be liquidated within a week. He considered the 35 percent of the TRIP portfolio invested in passive equities to be very liquid. Mr. Chan agreed that it would take two days to liquidate the global equity portfolio. Mr. Sterman said 15 percent of the TRIP portfolio was illiquid.

Regent Makarechian noted that TRIP earned 8.3 percent for the fiscal year, while the GEP earned 13.6 percent. He asked how much liquidity was needed in TRIP. Mr. Sterman said this was considered when TRIP's asset allocation was reviewed. A large difference in return was the result of TRIP's 35 percent allocation to public equities compared with 55 percent in GEP, plus the GEP's larger allocation to alternative investments. TRIP's asset allocation reflects its function as an intermediate-term product, which required more liquidity over time than the GEP. Regent Makarechian asked if some of TRIP's liquidity could be invested longer term to earn higher returns. Mr. Sterman said issues such as that would be considered with the Office of the CIO's consultants. Volatility was also considered when developing TRIP's asset allocation because of the potential for drawdowns in negative markets. Mr. Bachher added that campuses have the option to move funds to the GEP as an FFE to earn higher returns. He agreed that UC's balance sheet should be used for the best benefit of the University. Ms. Ardeshir commented that the Office of the CIO continues to work with the campuses to optimize their returns given their liquidity needs and risk tolerances.

Mr. Sterman displayed a chart showing the gradual upcoming reduction in TRIP's payout ratio, approved at the May meeting, from 4.75 percent to 4.5 percent in 2018, and to four percent by 2020.

Mr. Sterman commented that the UC Cash and Liquidity Management team had moved to the Office of the CIO. Over the past 12 to 18 months, that team of six had been fully integrated into the Office of the CIO and is responsible for all banking services of the campuses and medical centers. This team oversees $82 billion of systemwide cash flows annually, and 93 million banking transactions, including 20 million credit card transactions totaling $1 billion in sales.

Regent Makarechian suggested issuing a UC credit card, given that volume of transactions.

Mr. Sterman advised that STIP held $6.9 billion as of May 31, 2017, well in excess of the $5 billion threshold. Over the next several years the cash flow for loans to UCRP would have to be managed. STIP was a very high-quality, short-maturity portfolio, returning 1.1 percent through May 31, 50 bps above the benchmark. Mr. Sterman anticipated that returns would increase with interest rates over the upcoming few years.

Mr. Bachher commented that his office has worked hard to reduce management costs, affirming his commitment to transparency about costs. Mr. Guimaraes reported that management fees included both management fees paid to external managers and the cost of the Office of the CIO's management. Incentive fees are those paid to external managers based on performance. He displayed a graph showing annual management and incentive fees for UCRP, GEP, and TRIP from 2014 through 2016. Management fees in UCRP were 44 bps in 2014, 42 bps in 2015, and 37 bps in 2016. That change of seven bps on a $60 billion asset base equals more than $40 million of savings annually. Management fees in the GEP were reduced from 85 bps to 79 bps during that period, yielding savings of more than $5 million annually. TRIP's management fees were reduced from 42 bps in 2014, to 31 bps in 2015, and 23 bps in 2016, an annual savings of $20 million, reflecting the move in TRIP from active to passive management of its public equity portfolio. The Office of the CIO had also closely monitored its internal management costs.

Mr. Bachher added that the annual cost of the Office of the CIO was $30 million to $35 million, which equals a management fee of three bps for the assets it manages. Another way to compare management costs is assets per investment professional. The Office of the CIO has 26 investment professionals who manage an average of $4.3 billion per investment professional, compared with its California peers in pension management at $1 billion to $1.5 billion per investment professional. More broadly in the industry, the average is between $700 million and $1 billion. His goal is that the Office of the CIO becomes more efficient with fewer people. Total management fees saved thus far were $65 million annually. Mr. Bachher's goal would be to increase annual cost savings to $100 million. These cost savings represent risk-free returns.

Mr. Bachher summarized that the Office of the CIO had earned $2.4 billion in value added, 20 to 25 percent above the benchmarks over the past three years. His goals for the 2017-18 fiscal year were to continue to collaborate with stakeholders to set realistic expectations, to manage products differently based on their risk and return objectives, to implement asset and risk allocations for all products, to add value through passive and active management, to reduce costs aggressively in a low-return environment, and to leverage UC's competitive advantages.

Mr. Bachher recognized three staff members of his office for their outstanding work: Cay Hayne in the real estate group; Trevor Woods, operations manager; and Craig Huie, investment officer.

4. AMENDMENT OF REGENTS POLICY 6102: GENERAL ENDOWMENT POOL STATEMENT APPENDIX 1 (BENCHMARKS)

The Chief Investment Officer recommended that the Investments Subcommittee recommend to the Finance and Capital Strategies Committee that the Regents amend Appendix 1 of Regents Policy 6102: Investment Policy Statement for General Endowment Pool as shown in Attachment 1, effective July 1, 2017.

[Background material was provided to the Subcommittee 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 recalled that in March the Regents approved a new asset allocation for the General Endowment Pool (GEP). When the asset allocation of the UC Retirement Plan (UCRP) was last approved, the benchmarks for its public equity portfolio were simplified from four to one. When the GEP asset allocation was approved, it was discussed that the fixed income allocation would serve the purpose of holding liquidity, while generating some income. The GEP fixed income portfolio currently had four benchmarks because it had been managed like UCRP. That would be

simplified as well. The GEP absolute return benchmark would be adjusted to be the same as that for absolute return in UCRP.
Mr. Bachher said the private equity asset class had never had a benchmark for performance attribution purposes. Mr. Bachher reported that Committee Chair Sherman had favored establishing a private equity benchmark for attribution purposes. Committee Chair Sherman added that establishing this benchmark would serve the interests of full transparency.

Mr. Bachher explained that the proposed GEP public equity benchmark was the MSCI All Country World Index IMI Tobacco Free, which represents global public equity opportunities and is UCRP’s single public equity benchmark. Currently the GEP public equity portfolio had four separate benchmarks, one each for U.S., non-U.S. developed, emerging market, and global public equities. This proposal would simplify the benchmark into one for global public equities, which would take effect as of July 1, 2017, the beginning of the current fiscal year. Mr. Bachher displayed a graph showing annual returns since 2005 of the GEP public equity portfolio, the current benchmark, and the proposed benchmark.

Mr. Bachher said the fixed income asset class, which would be called the Liquidity (Income) asset class, benchmark would change from four separate benchmarks, one each for U.S. core fixed income, high yield, emerging market, and Treasury Inflation Protected Securities to one benchmark, the Bloomberg Barclays U.S. Aggregate Index (Barclays Agg). Committee Chair Sherman commented that having one index would accomplish the same goal much more simply than weighting four indices. Mr. Bachher displayed a graph showing annual returns since 2005 of the GEP fixed income portfolio, the current benchmark, and the proposed benchmark. The role of fixed income in the GEP was to be approximately five percent of liquidity, which would be held in Treasuries or government bonds. The Barclays Agg would earn more than government bonds. However, opportunistic fixed income would increase returns so that the Barclays Agg would be an appropriate benchmark.

Mr. Bachher stated that the proposed GEP absolute return benchmark would be changed from the HFRX Absolute Return Index to the HFRI Fund of Funds Composite Index, the same as that for UCRP. Mr. Bachher displayed a graph showing annual returns since 2005 of the GEP absolute return portfolio, the current benchmark, and the proposed benchmark.

Committee Chair Sherman commented that the private equity asset class had not had a benchmark previously, other than the actual private equity return. The proposed benchmark would be the broad Russell 3000 Index plus a 300 basis point (bps) illiquidity premium. This benchmark would be phased in, with a 150 bps illiquidity premium for the first year beginning July 1, 2017. Mr. Bachher displayed a graph showing annual returns since 2006 of the GEP private equity portfolio and the proposed benchmark. Mr. Bachher suggested that the same change be made to the UCRP private equity asset class benchmark. Committee Chair Sherman agreed.

Regent Lemus asked how the Sharpe ratio or risk profile of the benchmarks compared with existing benchmarks. Mr. Bachher responded that more detail regarding risk characteristics was in the meeting materials. Investment Officer Ardeshir stated that UCRP private equity Sharpe ratio was 1.15 compared with 0.6 for the Russell 3000 Index, meaning that the portfolio was returning more return per unit of risk. She explained that the Sharpe ratio was the absolute return of the asset class divided by the volatility, being the dispersion of returns, and signifies how much return is being achieved per unit of risk. The public equity portfolio risk was the same as that of the benchmark index.

Upon motion duly made and seconded, the Committee approved the Chief investment Officer's recommendation and voted to present it to the Finance and Capital Strategies Committee.

5. **REGENTS POLICY 6102: GENERAL ENDOWMENT POOL STATEMENT REVIEW**

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

Chief Operating Officer Arthur Guimaraes introduced this discussion of the Office of the Chief Investment Officer's (CIO) strategic review of the General Endowment Pool (GEP) Investment Policy Statement (IPS) and other Regents policies relating to investments, working with Mercer Consulting, the Office of the General Counsel, and the Office of the Secretary and Chief of Staff to the Regents. The Regents' committee structure had changed with the adoption of updated Bylaws. The current IPS was 87 pages long and unwieldy. The Office of the CIO would propose reducing the IPS to a much shorter document, and developing a separate Asset and Risk Policy and a separate Implementation Manual.

Investment Officer Susie Ardeshir emphasized the importance of governance as a critical component of successful management. The purpose of this review was to align the Office of the CIO with the current governance structure of the Regents, including the committee charters, which specify authority for determining asset classes, asset allocation, and benchmarks. Her office would recommend that some authorities previously delegated to the Investments Subcommittee be changed to consent responsibilities, to be recommended by the Investments Subcommittee to the Finance and Capital Strategies Committee, in order to give members of that committee the ability to review and consider those recommendations.

Regent Zettel asked about the draft IPS and other documents. Ms. Ardeshir observed that these were for discussion. The only action proposed for the current meeting was the update to GEP benchmarks. Some changes in the IPS would be proposed to align with the new governance structure.

Ms. Ardeshir discussed a draft GEP IPS, a proposal to reduce the current 87-page IPS to a six-page document. It was proposed that many issues currently in the IPS would be moved to an Implementation Manual. This approach would then be used for the IPS for the UC Retirement Plan and other products. Every investment product would have a simplified IPS.

In connection with this review, it would be proposed that the Charter of the Finance and Capital Strategies Committee be modified to provide that the Investments Subcommittee would recommend to the Finance and Capital Strategies Committee changes in asset classes, asset and risk allocation, and benchmarks. An Implementation Manual would be developed that included materials shifted from the IPS that would involve what she said were processes and procedures of the Office of the CIO.

CIO Bachher clarified that risk allocation and selection of benchmarks would be added as consent responsibilities of the Investments Subcommittee, meaning that the Subcommittee would make recommendations to the Finance and Capital Strategies Committee. Ms. Ardeshir commented that risk allocation and benchmark selection should be at the same level of authority as setting asset classes and asset allocation, and would be part of the Asset Allocation and Risk Policy. The current Appendix One of the IPS would become the Asset Allocation and Risk Policy. Her office was proposing that all other appendices of the current IPS would become part of an Implementation Manual under the authority of the Office of the CIO, which could make changes to the Manual with no action by the Regents. Her office would propose that the Implementation Manual would include matters currently covered in IPS appendices such as risk management policies and procedures, derivatives, liquidity, and leverage policies, investment manager guidelines, watch list criteria, and valuation policies. Ms. Ardeshir said the key elements of the IPS would explicitly designate responsibilities and accountability. She expressed her office's view that constraining policies that would limit opportunistic investments should be avoided in policy. Risk controls should provide comfort to stakeholders.

The IPS would include a statement on sustainability. Mr. Bachher commented that the current IPS included reference to prohibited investments such as tobacco products. In response to calls for divestment of fossil fuel holdings, the Office of the CIO had developed a Framework for Sustainable Investing that included environmental, social, and governance (ESG) issues. The Office of the CIO would go beyond the Framework and consider the potential impact of climate change in investment decision-making and risk assessment. Committee Chair Sherman suggested that the Sustainability Framework be called, instead, an ESG Framework. Regent Makarechian agreed. Mr. Bachher expressed his view that the Office of the CIO would be a national leader by including sustainability in its IPS.

Committee Chair Sherman suggested that governance documents when approved be shared with the campuses. He asked what level of risk would be acceptable in the GEP. Senior Managing Director Richard Bookstaber commented that any risk metric is based on past events and is predictive if the future resembles the past. Any risk management system examines past variability that occurred for the instruments that make up a given portfolio. A measure called value at risk represents how much returns could change over a period of one year, with a 90 percent degree of probability. The Office of the CIO bases its risk profile on ten to 11 percent value at risk. On a longer term, a pure U.S. S&P500 portfolio would have a volatility of 17 to 20 percent. A ten to 11 percent value-at-risk would mean a portfolio that could go up or down over the next year a little more than half as much as the S&P500. A ten percent value-at-risk meant that, with 90 percent probability, the portfolio had the potential to go down ten percent or less over the next year.

Committee Chair Sherman said it would be important to quantify the risk profile of the portfolio.

6. **REVIEW OF REGENTS POLICY 6106: TOTAL RETURN EXPENDITURE POLICY ON REGENTS' GENERAL ENDOWMENT POOL ASSETS**

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

Investment Officer Susie Ardeshir explained that Regents Policy 6106: Policy on Total Return Expenditure on Regents' General Endowment Pool Assets specified that the GEP spending policy was set by the Regents. Her office would propose that this policy be rescinded and that GEP spending policy be incorporated into the Investment Policy Statement that would be reviewed annually by the Regents.

7. **REVIEW OF REGENTS POLICY 6107: ENDOWMENT ADMINISTRATION COST RECOVERY ON REGENTS' ASSETS (GENERAL ENDOWMENT POOL)**

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

Investment Officer Susie Ardeshir stated that endowment administration cost recovery provided a mechanism to recoup costs of administration of assets in the General Endowment Pool. The current rate is 55 basis points (bps). The Office of the Chief Investment Officer would propose that this policy be rescinded and the endowment administration cost recovery rate be included in the Investment Policy Statement, which would be reviewed annually by the Investments Subcommittee and recommended for approval to the Regents.

8. **REVIEW OF REGENTS POLICY 6201: INVESTMENT POLICY FOR THE UNIVERSITY OF CALIFORNIA CAMPUS FOUNDATIONS**

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

Investment Officer Susie Ardeshir said that the Office of the Chief Investment Officer (CIO) proposed that this policy be modified to reflect the practice of campus foundation reporting. She suggested surveying the campus foundations about their costs of reporting. Each of the campus foundations has its own board, which sets its own investment policy. Annually, the Office of the CIO collects the campus foundations' reports for the Subcommittee and the Regents. Some required reporting was redundant, as the campus foundation reports are incorporated into the University's financial reports.

Regent Zettel asked if the campus foundations were audited. Ms. Ardeshir said all campus foundations were audited by PricewaterhouseCoopers and reported as separate components.

Regent Makarechian asked about the role of the Executive Vice President and Chief Financial Officer in the proposed governance, particularly relating to the University's cash flow and liquidity. Ms. Ardeshir commented that the University's cash flow and liquidity would be in the domain of the Finance and Capital Strategies Committee. CIO Bachher agreed.

Regent Makarechian suggested that liquidity requirements of the University be specified and added to policy at the appropriate level, likely to be considered by the Board of Regents. Committee Chair Sherman suggested raising that issue with the Finance and Capital Strategies Committee. Mr. Bachher agreed.

The meeting adjourned at 4:30 p.m.

Attest:

Secretary and Chief of Staff

Additions shown by underline; deletions shown by strikethrough.

APPENDIX 1
Effective: July 1, 2017
Replaces Version Effective: May 12, 2016

ASSET ALLOCATION, PERFORMANCE BENCHMARKS, AND REBALANCING POLICY

Based on the risk budget for the GEP, the Committee has adopted the following asset allocation policy, including asset class weights and ranges, benchmarks for each asset class, and the benchmark for the total GEP.

Criteria for including an asset class in the strategic policy include:

- Positive contribution ~~positively~~ to the investment objective of GEP
- Widely recognized and accepted among institutional investors
- ~~Has~~ Low cross correlation with other accepted asset classes
- ~~Has a~~ Meaningful performance history
- ~~Involves a unique set of investors~~

The allowable ranges for each asset class and in total have been chosen to be consistent with budgets and ranges for total and active risk.

[This space intentionally left blank.]

UNIVERSITY OF CALIFORNIA GENERAL ENDOWMENT POOL
INVESTMENT POLICY STATEMENT

A. Strategic Asset Allocation and Ranges

	Target Allocation	**Allowable Ranges**	
		Minimum	**Maximum**
Global Equity	30.0%	20.0	52.5
US Equity	15.7		
Developed Non US Equity	11.0		
Emerging Mkt Equity	3.3		
Private Equity	22.5	10.0	32.5
Absolute Return (Strategic Opportunities)	25.0	15.0	32.0
Real Assets	12.5	3.0	17.5
Liquidity (Income)	10.0	0.0	17.5
TOTAL	100%		

B. Asset Class Performance Benchmarks

The Committee has adopted the following performance benchmarks for each asset class. Criteria for selection of a benchmark include:

- Unambiguous: the names and weights of securities comprising the benchmark are clearly delineated
- Investable: it is possible to replicate the benchmark performance by investing in the benchmark holdings
- Measurable: it is possible to readily calculate the benchmark's return on a reasonably frequent basis
- Appropriate: the benchmark is consistent with The Committee's investment preferences or biases
- Specified in Advance: the benchmark is constructed prior to the start of an evaluation period
- Reflecting 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

Asset Class	**Benchmark**
Public Equity	MSCI All Country World Index IMI Tobacco Free
~~US Equity~~	~~Russell 3000 Tobacco Free Index~~
~~Non US Eq. Devel.~~	~~MSCI World ex-US Net Tobacco Free~~
~~Emerging Mkt Eq.~~	~~MSCI Emerging Market Free Net~~
~~Fixed Income~~	~~Barclays US Aggregate Bond Index~~
~~High Yield Fixed Income~~	~~Merrill Lynch High Yield Cash Pay Index~~
~~Emg Mkt Fixed Income~~	~~Dollar Denominated: JP Morgan Emerging Markets Bond Index Global Diversified~~
~~TIPS~~	~~Barclays US TIPS Index~~
Private Equity	~~N/A~~ Russell 3000 Index + 300 basis points (See below note 2.)
Absolute Return	~~Diversified: HFRX Absolute Return Index~~ HFRI Fund of Funds Composite
Real Assets (non-Real Estate) Real Estate (Real Assets)	~~N/A (See below note 3.)~~ Actual Real Assets Portfolio Return NCREIF Funds Index – Open End Diversified Core Equity (ODCE), lagged 3 months
~~Real Estate~~	~~NCREIF Funds Index – Open End Diversified Core Equity (ODCE), lagged 3 months~~
Liquidity (Income)	Barclays US Aggregate Index

Notes on asset class benchmarks:

1. Global Equity: The Chief Investment Officer will determine what constitutes a tobacco company based on standard industry classification of the major index providers (e.g., Russell, MSCI) and communicate this list to investment managers annually and whenever changes occur.

2. Private Equity: As we transition the benchmark into the portfolio we will use150 basis points illiquidity premium for the first year. ~~*Long term* portfolio returns will be compared to investable public equity alternatives as well as non-investable peer group indices. There is no appropriate market benchmark to use for *short term* performance evaluation or decision making.~~
~~3. Real Assets (all strategies ex-commodities): similar to Private Equity~~

C. Total GEP Performance Benchmark

This is the composition of the total GEP performance benchmark referred to in the Investment Policy Statement, Part 4(b). The percentages below add to 100%. Until GEP reaches its long term targets the performance benchmark will reflect the glide path framework and interim weightings, which will differ from the long term policy approved in the Strategic Asset Allocation and as noted below

Percentage	**Benchmark**
30.0%	× MSCI All Country World Index IMI Tobacco Free
~~21.0%~~	~~× Russell 3000 Tobacco Free Index~~
~~14.0%~~	~~× MSCI World ex-US Net Tobacco Free~~
~~7.5%~~	~~× MSCI Emerging Market Free Net~~
~~5.0%~~	~~× Barclays US Aggregate Bond Index~~
~~2.5%~~	~~× Merrill Lynch High Yield Cash Pay Index~~
~~2.5%~~	~~× JP Morgan Emerging Market Bond Index Global Diversified~~
~~2.5%~~	~~× Barclays US TIPS Index~~
~~11.5~~ 22.5%	× ~~Actual return of private equity portfolio~~ Russell 3000 Index +300 basis points
~~23.0~~ 25.0%	× ~~HFRX Absolute Return Index~~ HFRI Fund of Funds Composite
~~3.0~~ 12.5%	× ~~Aggregate Real Assets benchmark (see section B), with components weighted by their actual weights within the total real assets portfolio~~ NCREIF Funds Index – Open End Diversified Core Equity (ODCE), lagged 3 Months Actual Other Real Assets Portfolio Return
~~7.5~~ 10.0%	× Barclays US Aggregate Index

Notes on Total Fund benchmark:

~~1. The benchmark for private equity is replaced by the private equity portfolio's actual performance. This has the effect of neutralizing the active performance of this class for purposes of total fund performance evaluation.~~
1 ~~2~~. The calculation of the Total Fund benchmark will assume a monthly rebalancing methodology.
2 ~~3~~. In the event of a significant change in asset allocation, the Chief Investment Officer in consultation with the Subcommittee may specify an alternative weighting scheme to be used during a transition period.

D. Rebalancing Policy

There will be periodic deviations in actual asset weights from the long-term/current policy asset weights specified above. Causes for periodic deviations are market movements, cash flows, and varying portfolio performance. Significant movements from the asset class policy weights will alter the intended expected return and risk of the GEP. Accordingly, the Investment Committee authorizes the Chief Investment Officer to rebalance the GEP when necessary to ensure adherence to the Investment Policy.

The Chief Investment Officer will monitor the actual asset allocation at least monthly. The Committee directs the Chief Investment Officer to take all actions necessary, within the requirement to act prudently, to rebalance assets to within the policy ranges in a timely and cost effective manner when actual weights are outside the prescribed ranges. The Chief Investment Officer may utilize derivative contracts [in accordance with Appendix 4] to rebalance the portfolio such that the portfolio's net exposures are consistent with policy ranges.

The Chief Investment Officer shall assess and manage the trade-off between the cost of rebalancing and the active risk associated with the deviation from policy asset weights. With approval from the Chair of the Committee, the Chief Investment Officer may delay a rebalancing program when the Chief Investment Officer believes the delay is in the best interest of the GEP. Results of rebalancing will be reported to the Committee at quarterly meetings.