The Regents of the University of California

INVESTMENTS SUBCOMMITTEE
January 15, 2019

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, Um, and Zager; Chancellors Hawgood, and Khosla; Staff Advisor Main; Student Advisor Huang
In attendance:	Regents Cohen, Kieffer, and Morimoto, Secretary and Chief of Staff Shaw, General Counsel Robinson, Chief Investment Officer Bachher, Executive Vice President and Chief Financial Officer Brostrom, and Recording Secretary Li

The meeting convened at 12:35 p.m. with Subcommittee Vice Chair Anguiano presiding.

1. **PUBLIC COMMENT**

Secretary and Chief of Staff Shaw explained that the public comment period permitted members of the public an opportunity to address University-related matters. The following person addressed the Subcommittee concerning the items noted.

Aidan Arasasingham, UCLA student and board member of the UC Student Association (UCSA), raised concern regarding aging facilities. At the November 2018 Regents meeting, Mr. Arasasingham spoke to the Regents during public comment about the lack of adequate furniture in lecture halls. He also raised recent examples of a flooded administrative building and a dormitory with a gas leak at UCLA. He stated that UCSA looked forward to working with the University and the Regents to support passage of the Higher Education Facilities Bond Act of 2020.

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

Upon motion duly made and seconded, the minutes of the meeting of November 13, 2018 were approved.

3. **2019 ECONOMIC FORECAST**

[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 introduced Jerry Nickelsburg, Director of UCLA Anderson Forecast, and announced that Mr. Bachher, Executive Vice President and Chief

Financial Officer Brostrom, and President Napolitano would be forming an economic advisory group to consider economic issues affecting the world and the UC portfolio.

Mr. Nickelsburg explained that his group's approach to economic forecasting is to get the economics right, check for logical consistency, consult history and data, and then develop a forecast using statistical techniques. He showed concern for the current elevated risk to the forecast. Mr. Nickelsburg laid out concepts for understanding the U.S. economy that he believed were not well known to policymakers. A decrease in government savings, signaled by an increased budget deficit and derivative of recent changes to federal tax law, can be balanced by private savings, because private and public savings are available for investment, which drives economic and productivity growth. Private savings are not on the rise, however, and the increased deficit will drive down domestic investment. The federal government will borrow and outbid private investors with higher interest rates, leading to less investment and slower economic growth, or the federal government can borrow from foreigners. In order to lend to the federal government, foreigners sell more to the U.S. than the U.S. buys from them in order to obtain U.S. dollars. Government savings are going down, and there is an explicit federal policy to drive the net trade balance up, that is, to close the trade deficit, and the two are inconsistent. What happens as a result will have a significant impact on the U.S. economy in 2019-20. Current estimates of the federal deficit do not factor the recession, which will happen, and when it happens, the federal deficit can be expected to grow from $1 trillion to $2 trillion, because the government must borrow from foreigners or crowd out domestic investment. In light of current trade disputes, the trade deficit is projected to increase as well. Federal policy has placed a large stimulus package on top of a full employment economy, which pushes up prices and wages due to increased demand. A normalization of interest rates was also projected, with an increase of 75 basis points before the economy softens, which matters for bond issuance in California. Therefore, the forecast expects higher interest rates and slower gross domestic product (GDP) growth. The fundamentals that gave the economy a two percent growth rate—investment, productivity, and labor force growth—have not changed, so the economy will return to that two percent growth rate once the stimulus package is exhausted this year. The new tax law incentivized investment that was meant for 2019-20 back into 2018, which will likely result in a one percent economy in 2020 and even a sub-one percent economy at the end of the forecast horizon.

Mr. Nickelsburg explained that the U.S. forecast usually informs the California forecast, except in the ways that the latter is different. Housing markets are softening nationwide and in California as well, as are home sales in California. This is an expected result of higher interest rates, because sellers are determining the new value of their home and buyers can afford either a smaller house or less expensive house due to higher mortgage payments. The forecast also explores tax rates; the new federal tax law makes California somewhat more tax-expensive. Based on the correlation between tax rates and GDP, it could be interpreted that higher taxes mean better economic growth, because higher taxation is associated with public goods. Large companies have not left California despite other states dropping their tax rates because of institutions like UC. Therefore, the change in the differential tax rates between states is unlikely to have much effect on growth in California. Current trade disputes appear not to have an effect on trade along West Coast seaports, which is consistent with the view that there will be more imports and a higher trade deficit.

With regard to personal income tax revenues, Mr. Nickelsburg explained that, in a garden-variety recession, the general fund is predicted to drop by about $19 billion in the first year and about $17 billion in the second year for a total impact of about $36 billion. In a mild recession, the general fund is predicted to drop by about $30 billion. The difference between garden-variety and mild recessions is minor because of the income drop for high income earners and the lack of initial public offerings (IPOs). California has a rainy day fund of about $14 billion, and Governor Newsom intends to add another $1 billion to it. Paying down debt will mean $10-15 billion more to the fund, so California may not be hurt too badly by the next recession.

Mr. Nickelsburg concluded with the California forecast. The growth rate will fall from two percent in 2018 to about one percent in 2020. Personal income will grow at four percent after inflation, unemployment will stay at full employment, and housing production will grow due to policy discussions around changing the permitting process and zoning.

Regent Leib asked whether the housing permits forecast accounted for new legislation. Mr. Nickelsburg responded that the forecast accounted for some bills passing and noted that, despite the forecast of about 130,000 units, California lost 30,000 units to wildfires in 2017 and 2018. California is not making much headway even with new permitting.

[At this point, Subcommittee Chair Sherman presided over the meeting.]

Advisor Zager asked whether the California housing market would continue to do better than that of the rest of the U.S., because it seemed as if the California market should be softer due to the tax rates. Mr. Nickelsburg replied that the California housing market would be softer relative to it they would have been without the change in tax law. Demand for California housing, which comes from all over the country and the world, is still very strong but will soften.

Regent Cohen asked what would be required in order for the state to increase to 250,000-350,000 housing units per year. Mr. Nickelsburg responded that capacity was the issue. California currently has 850,000 construction workers, with about 500,000 of those workers building 100,000 homes. In order to build 300,000 homes, the state would need 1 million more construction workers, on top of additional equipment and capital investment. Building 300,000 homes requires considering all capacity constraints and how to ease them.

Regent Makarechian remarked that one of the biggest problems in California is zoning. It takes ten years to transition an unzoned parcel of land to residential housing in California while it takes three months in Texas. Building the same house can be up to four times less expensive in Texas. There are reports that hundreds of thousands of people have left California, including some corporations. The State needs to increase zoning and decrease regulation in order to facilitate faster building. Another issue is the availability of financing; the California Public Employees' Retirement System (CALPERS) enters into joint ventures with builders of residential housing. With regard to labor, people come to California to work but move to other states when California slows down. Regent Makarechian asked what Mr. Nickelsburg's thoughts were on that. Regent Makarechian also noted the rising interest rates and asked whether UC should change its assumption of the discount rates. Mr. Nickelsburg responded that interest rates were built into the forecast. With regard to housing, people are leaving and coming to California. Data shows that people with a higher education come to California because they can earn higher incomes and can afford the California lifestyle. If large numbers of people are indeed leaving the state, then home prices should go down, but demand for housing is still increasing. Population size and the amount of housing are political decisions. Mr. Nickelsburg declined to comment on what discount rate Mr. Bachher should use, reiterated that the forecast predicted that the federal funds rate will increase by 75 basis points.

4. **UPDATE ON INVESTMENT PRODUCTS**

[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 Bachher explained that the investment performance results in this item were up to date as of September 30, 2018. Performance results as of December 31, 2018 would be emailed to the Regents once they were finalized. The following speakers from the Office of the CIO introduced themselves: Rick Bookstaber, Chief Risk Officer of the Office of the CIO; Marco Merz, Managing Director of Defined Contributions Products; Edmond Fong, Senior Managing Director of Absolute Return Investments; Ronnie Swinkels, Managing Director of Public Equity; and David Schroeder, Senior Portfolio Manager of Fixed Income Investments.

Mr. Swinkels presented an update on the equity markets. Markets have been volatile because of: 1) the Federal Reserve and interest rate policy that have created uncertainty among investors; 2) trade issues between the U.S. and China that have created uncertainty globally; 3) general concern about economic slowdown; and 4) potential and actual government shutdown. The U.S. had been outperforming for most of 2018, but the Standard & Poor's (S&P) 500 Index was down nine percent at the end of the year. In the fourth quarter, the S&P Global Index was down 13 percent, and, in the U.S., technology and energy stocks such as Facebook and Apple saw double-digit decreases. In 2018, the S&P was down 4.5 percent, the first negative since 2008. The U.S. still significantly outperformed global markets; developed and emerging markets were down by 15 percent in 2018. In Europe and Japan, growth had bounced back in 2016-17 and investors were cautiously optimistic but disappointed due to uncertainty in Europe from issues such as Brexit and a corporate governance crisis in Japan. China experienced a selloff of domestic Chinese equities in September and October 2018, with a total drop of 30 percent that year. India, another meaningful part of UC's active portfolio, experienced a mini financial crisis in September and October of 2018 due to concern over some local banks. That situation has since improved, but investors are wary. There is a concern about the independence of the central bank in India. The Brazilian market is excited about new, business-friendly government. Year-to-date, global markets are up roughly four percent but continue to be volatile. Mr. Bachher added that there was volatility in the fixed income markets as well.

Mr. Schroeder reviewed the fixed income market. With regard to ten-year treasury yields, there was a risk-off trade from November 2018 through January 2019; rates have rallied sharply while credit spreads have widened materially. Ten-year yields peaked in November 2018 at 3.25 percent and fell 70 basis points to 2.55 percent at the close of business on January 3, 2019 and rose to 2.7 percent, where they stayed at the time of the presentation. This is similar to the gross scare in 2016. Mr. Schroeder believed that there were three main drivers for this move: 1) financial conditions tightened due to lower equity prices, 2) Treasury market liquidity deteriorated sharply in 2018 (liquidity fell by twice as far this year), 3) weakening in growth fundamentals, and indicators tracking the probability of recession have risen. The fixed income markets are pricing at ease, suggesting that the Federal Reserve (Fed) has stopped raising interest rates and will lower rates. Typically, when the Fed indicates a pause and as Treasury yields rally, intermediate maturities lead and fall by about 30 basis points over two months after the hiking cycle is done. Currently, a much steeper decline of Treasury yields have been observed. With regard to inflation, the December Consumer Price Index (CPI) report showed a pickup inflation, with a three percent steady rate of change for the services index, and core goods prices rose by about 20 basis points. Over the last four years, core goods prices have been declining in the CPI by an average of 60 basis points. There are some hints of inflation pressure building that have not been seen for some time. Wage growth has been peaking; at 3.2 percent per the last labor market report. Credit spreads have widened materially. In terms of performance, 2018 has been one of the worst years in recent memory for corporate bonds. Investment grade credit spreads widened by 60 basis points, and high yield widened by 166 basis points, resulting in excess returns of negative three percent for the investment grade market and negative 4.7 percent for the high yield market. In the investment grade market, BBB-rated bonds widened at three times the rate of those rated A and AA. In high yield market, CCC-rated bonds lagged those rated B and BB. Cyclical sectors underperformed. The U.S. credit market is currently in a much more fragile state, and leverage in the system has increased dramatically in the last five years. The BBB component of the investment grade index has risen from 25 percent in the 1990s to 50 percent currently.

Subcommittee Chair Sherman asked about the shape of the yield curve. Mr. Schroeder replied that the slope of yield curve is a symptom, not a cause, with regard to a recession indicator. The Office of the CIO uses the slope of a yield curve to project rates and forward space. The flat yield curve seems to indicate that there is very little change for yields in the next 12 months. The ten-year Treasury note yield, one year forward is up four basis points. The Office of the CIO takes a broad range of rate scenarios and fits the portfolio to the team's view of how things might evolve. The Wall Street consensus is that the Federal Reserve will make two interest rate changes in 2019. The markets project that overnight rates will fall by 25 basis points into 2021, with the shorter part of the yield curve inverted, but Mr. Schroeder believed that prediction was too aggressive.

Subcommittee Chair Sherman asked whether this analysis of the curve informing a decision on allocating to or from equity exposure given the curve may be indicating a slowdown. Mr. Schroeder replied that the Fixed Income team at the Office of the CIO uses the curve to establish sector allocation within the fixed income portfolios.

Advisor Zager asked how the Office of the CIO expected the markets to perform in an environment where it has projected two percent growth and about two percent inflation in 2020. Mr. Schroeder responded that the credit market has experienced recent difficulties. The Office of the CIO has taken its exposure to corporate bonds down to market weight. Credit spreads and rates have been modestly bearish, and the Office of the CIO is looking for higher rates. Mr. Schroeder believed that fair value in intermediate Treasury yields is three percent—one percent real interest rate and two percent breakeven inflation rate. The AAA-rated securitized product yields just above four percent, which the Office of the CIO thinks is a decent return for the risk taken. Fixed income returns are in the low single digits. High yield has widened a lot, and the coupon rate has an eight percent handle. Mr. Swinkels added that he would expect a below-average return for equity in 2019 but acknowledged the wide range of potential outcomes due to volatility.

5. **REVIEW OF ASSET CLASSES**

[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 Bachher began with an overview of assets under management. As of September 30, 2018, UC was managing assets of $123.1 billion, and, by December 31, 2018, UC assets dropped to $114 billion. Endowment fell from $12.3 billion to $11.7 billion, but the biggest change came from the pension, which fell by $5 billion. The pension consists of half public equities, and, given the recent volatility of the markets, down from ten to 20 percent. Total return was mostly flat; changes came mostly from cash flow, and 35 percent of total return assets are in passive public equities. The Short Term Investment Pool and captive insurance were roughly flat as well. Growth from $118.7 billion at the beginning of fiscal year 2018 to $123.1 billion by September 30, 2018 was the result of robustly driven market gains, and the Office of the CIO would have more data on the period of September to December in ten days when books are closed.

Managing Director. Merz explained that the Savings Program is the sibling of the Pension Plan. The Savings Program is voluntary while the Pension Plan is mandatory; together, they total $90 billion in assets. The $25 billion in Retirement Savings is remarkable, showing that people want to save above and beyond the pension. Despite the decline of equity markets in December 2018, UC participants sold less than $30 million—the equivalent of less than 20 basis points—which showed their commitment.

Senior Managing Director Fong reviewed UC Endowment, which reflected a relatively buoyant market environment with market gains of approximately $300 million. In anticipations of returns being compressed across all asset classes in the future, the Office of the CIO will focus on adding value as it grows its portfolio. With regard to net cash flow, outflow was about $330 million, and inflow was roughly $130 million. Due to movement in the markets, the UC Endowment is estimated at $11.7 billion by the end of

2018. Mr. Bachher added that 40 percent of the UC Endowment is in equities, which means a decrease of about $600 million mostly driven by the equity markets.

Mr. Bachher provided a review of the Working Capital Pool and noted that everything in the short term is fixed income, and everything in the total return is a blend of stocks and bonds with some absolute returns, the passive nature of the stocks being the biggest driver of the market value changes. UC Captive Insurance was roughly flat with a little inflow from premiums.

Mr. Bachher also provided a review of Asset Allocation. In the last four quarters, the Office of the CIO has managed a higher cash balance and acted relatively conservatively, anticipating a choppy market but not knowing when that will happen. Cash balance was as high as 12 percent, but, as the year proceeded, the overall liquidity position was around five percent. Furthermore, a pipeline of private market opportunities was fulfilled in the last two quarters of 2018, and capital was called. The private markets and fixed income allocations seem higher primarily because of market movement and partially because the Office of the CIO closed market transactions. UC invests 73.1 percent in the U.S. despite a desire to diversify investment to other countries, especially in light of recent selloffs, but the Office of the CIO does not want to rush into those markets. From September through December 2018, public equities went down from 52 percent ($64 billion) to 46 percent ($53 billion) and held more cash overall, which helped. Private markets went from about 16 percent to about 18 percent from September through December.

Mr. Bachher then described the results from the UC Pension, defining the policy weight as the target in the asset allocation. Policy weight for public equity is 52.2 percent. On September 30, 2018, public equity had a portfolio weight of 57.1 percent and cash had four percent. By December 31, 2018, portfolio weight in public equity was about 52 percent after market movement and the cash position is 5.3 percent.

Mr. Merz presented information about the Savings Program, noting that, unlike the Pension or Endowment, the Office of the CIO does not have direct influence on the asset allocation. As of September 30, 2018, 300,000 individual participants held 59.2 percent in equity, an aggregation of individual participant asset allocations. Participants also hold 34 percent in fixed income. In December 2018, there was a reduction in equity to 56.6 percent. Subcommittee Chair Sherman asked whether much of the savings program is target date funds. Mr. Merz replied that there was roughly $9 billion in the target date fund, which is almost half of the savings program. Subcommittee Chair Sherman asked how often the target date funds rebalance, and Mr. Merz responded that there is an ongoing mechanism on a quarterly basis where the roll down of risk occurs as the participant of that risk approaches retirement. An asset allocation model is rerun annually, and this may change asset allocation. There is a dual change in asset allocation on a quarterly and annual basis. Assets have significantly increased in the target date fund. Only five years ago, those assets were about $3 billion. Assets in the target date fund have nearly tripled, which allows the Office of the CIO to implement a diversified asset allocation. Mr. Merz stated that the biggest problem for 401(k) retirement savings plans generally is that asset allocation risk is switched to the participant. More assets in the target date fund means a better long-term outlook and return expectations for participants.

Mr. Fong, who reviewed the Endowment Asset Allocation (Endowment), recalled that the Office of the CIO had approximately 7.5 percent cash, 42 percent public equities, 21 percent liquidity income, and 37 percent other investments at the end of fiscal year 2018. By September 30, 2018, cash was reduced to 2.1 percent, or $300 million. Mr. Fong explained where the $500 million went. In light of a dominant growth risk factor in UC portfolios, the Office of the CIO wanted to diversify and created a pipeline of private market opportunities. A number of assets in this pipeline were non-market and non-auction, which meant UC could have bilateral discussions with the seller, control of pricing discipline, and reduce cost of transaction. These assets also diversified the broader endowment. Of the $500 million, 60 percent was invested in real estate, with the Office of the CIO underwriting six to eight percent unlevered. The Office of the CIO invested 20 percent in real assets with strong cash flow generation like traditional and digital infrastructure. Some of these were co-investments that reduced costs and mitigated the J-curve. Fifteen percent of the cash went to absolute return strategies. The Office of the CIO was quite pleased with how things transpired with regard to private market opportunities. In the quarter ending December 31, 2018, there was further deployment of cash—40 percent in private equity and 40 percent in absolute return. Public equity was about 38 percent of the Endowment. Liquidity was 21 percent at the beginning of the fiscal year and was now 14.2 percent. Cash was at 40 basis points, but the Office of the CIO anticipated an increase in cash from Funds Functioning as Endowment (FFEs) and return to a two or three percent cash cushion. Private market investment was ahead of schedule but market volatility was expected.

Mr. Bachher provided an overview of the Total Return Investment Pool. Growth, which is passive public equities, decreased from about 37 percent to 35 percent from September through December. Cash decreased about $100 million as well. Short Term and Captive Insurance asset allocations were essentially flat.

Chief Risk Officer Bookstaber reviewed Risk Allocation performance, noting that volatility was increasing and nearing its historical average. The Office of the CIO has considered three areas of risk: 1) uncertainties regarding technology; 2) demographics and society, e.g., changes in labor force culture and immigration; and 3) climate change. There is already evidence of climate change's effect on the economy, namely, number of deaths and productivity in the labor force in emerging markets. Whether risk affects the market depends on the liquidity of the market, how leveraged the markets are (i.e., to what degree people borrow to go into risky assets or show bias toward risky assets), and concentration that exists in those markets. Historically, the risk for the Pension is ten to 11 percent, and the risk for Endowment is 10.5 to 11.5 percent. Currently, the Pension went from 6.7 percent volatility in September 2018 to 9.6 percent volatility in December 2018, and the Endowment, more risky by nature, went from 6.4 percent volatility to 10.4 percent volatility during that same time. Volatility for Total Return and Short Term Investment Pools did not grow as significantly, because fixed income tends to be more stable by nature.

Aside from the usual tools for managing risk, the Office of the CIO also watches for thematic risks and shocks to the economy.

In terms of overall performance, fiscal year-to-date (June 30-September 30, 2018) numbers were in negative territory, with the exception of the Short Term portfolio.

Subcommittee Chair Sherman asked how current numbers compared to UC's benchmark. Mr. Bachher replied that the Office of the CIO was still waiting for private markets results in order to close the books for December 31, 2018. Managing Director Swinkels spoke about public equities to provide more information in this regard. The Pension through December 2018 was estimated to be roughly flat at negative ten percent. Endowment was projected to be down 12 percent due to significant exposure to emerging markets, Japan, and Europe, which were underperforming, but the opposite was the case in 2017. UC's stock selection was expected to balance any potential tilt in the portfolio. Mr. Bachher added that, since public equity is a significant weight of the Pension Plan and other products, UC must recover the ten percent drop in order to achieve a flat position in the new year. This would be a significant obstacle to overcome, but the Office of the CIO would continue to focus on value-added strategies.

Senior Portfolio Manager Schroeder reviewed fixed income performance. For fiscal year-to-date, fixed income outperformed at 20 to 25 basis points. Mr. Schroeder had not yet received numbers from December 2018 and could not report on them. Mr. Fong reported on absolute return, remarking that the portfolio has gone through massive transition, reducing its bet. While markets and hedge fund strategies struggled, UC was resilient, only down about 40 basis points. Absolute return was outperforming its benchmarks by five percent and already restoring in January 2019 what was lost in December 2018. Mr. Bachher provided some preliminary numbers on investment products for fiscal year-to-date and calendar year 2018 that would be finalized later. Regent Kieffer asked for numbers going back three to five years, and Mr. Bachher provided an overview as of December 31, 2018.

Advisor Zager asked about LIBOR-based products. Mr. Fong responded that the Office of the CIO was considering migrating to a different reference rate because LIBOR was present in some UC hurdle rates.

Mr. Bachher closed the presentation by stating that the Office of the CIO would remain conservative. There was no urgency to quickly deploy capital in private markets, because the private markets were lagging. The Office of the CIO would continue to seek opportunities while managing risk and staying cautious at this time.

The meeting adjourned at 2:10 p.m.

Attest:

Secretary and Chief of Staff