LACERA

FOR INFORMATION ONLY

March 18, 2020

TO: Trustees – Board of Investments

FROM: Jonathan Grabel
Chief Investment Officer

FOR: March 23, 2020 Board of Investments Meeting

SUBJECT: **CIO Interim Report Regarding Market Environment and Fund Positioning**

The following report is intended to provide Trustees with a transparent and candid overview of LACERA's current Total Fund position, in light of the global coronavirus pandemic and market developments. During the last three months, global production volume has significantly decreased, market conditions have rapidly deteriorated, and equity gains from recent years have been erased. It is clear that COVID-19 is impacting and reshaping daily lives, institutions, and the markets.

COVID-19 has affected global supply chains and consumer behavior leading to the potential for a global recession. These recessionary concerns have been exacerbated by actions taken by oil producing countries to increase output, thereby prompting oil prices to collapse to levels last experienced nearly two decades ago. The combined impact of these exogenous shocks has been increased market volatility and a flight to safer assets, driving government bond yields to historically low levels (albeit with unusual volatility).

Table 1 highlights several changes among key market indicators on a year-to-date and month-to-date basis. The table is a non-exhaustive list of assets impacted by recent market activity that is meant to demonstrate the stark decline in several categories and the rapid rise of risk aversion.

Table 1
Changes in Asset Values and Measures of Risk in 2020 – as of March 17, 2020[1]

	1/2/20	3/2/20	3/17/20	Month to Date Changes	Quarter to Date Changes
10 Year Treasury Yield[1]	1.88%	1.10%	1.02%	-7%	-46%
High Yield Spreads[2]	3.56%	4.97%	8.41%	69%	136%
Russell 3000 Index	1,907	1,806	1,451	-20%	-24%
MSCI ACWI IMI[3]	1,449	1,339	1,064	-21%	-27%
NYMEX Crude Oil - $/barrel	$61	$47	$27	-42%	-55%
COMEX Gold - $/ounce	$1,528	$1,595	$1,526	-4%	0%
CBOE Volatility Index (VIX)	12	33	76	127%	509%

1) 10-Year Treasury Constant Maturity Rate
2) ICE Bank of America US High Yield Index Option-Adjusted Spread
3) MSCI All Country World Index - Investible Market Index
Sources: S&P CapitalIQ; Federal Reserve Economic Data

[1] Updated on March 18, 2020 with information as of close of March 17, 2020.

Noteworthy year-to-date changes include: (i) a 509% increase in the CBOE Volatility ("VIX") index[2] from 12 to 76, (ii) a 136% increase in high yield spreads[3] from 3.6% to 8.4%, and (iii) a 52% decline in crude oil from $61 per barrel to $27 per barrel. Moreover, both the Russell 3000 Index and MSCI All Country World Index – Investible Market Index (MSCI ACWI IMI) dropped 20% and 21% so far in March, respectively. Finally, volatility on March 17th, as measured by the VIX, reached 83, surpassing the previous peak of 79 observed during the Great Financial Crisis.

In response to these significant market fluctuations, central banks have taken drastic actions to prevent a global liquidity crisis. This week, central banks coordinated efforts aimed at easing the negative impact of the pandemic and related economic turmoil. The U.S. Federal Reserve cut the federal funds rate twice in March by a combined 1.50% to a range of zero to 0.25%, implemented $700 billion of quantitative easing, and invoked its powers to establish lending facilities that issue loans directly to American corporations seeking liquidity. Global central banks took accommodative actions as well, including: (i) Bank of Japan increased its asset purchase targets; (ii) Bank of Korea cut its rates by 0.50% to a level of 0.75%; (iii) Reserve Bank of Australia injected additional liquidity; (iv) Bank of Canada cut interest rates by 0.50%; and (v) European Central Bank has announced a €750 billion asset purchase program. These decisive actions are an attempt to mitigate the risk of another 2008-like recession.

LACERA's portfolio has not been spared from the market turmoil, nor is it intended to be. Rather, the portfolio has been carefully designed and implemented with three goals in mind: (i) provide long-term growth in order to pay benefits into the future, (ii) provide risk mitigating characteristics, which are particularly important in times of market volatility, and (iii) provide continuous liquidity to ensure the ability to pay current benefits. As noted throughout this report, these objectives are addressed through the combination of LACERA's functional asset classes working in concert. Total Fund and functional asset category returns are demonstrated in **Table 2**.

Table 2
Estimated LACERA Portfolio Returns as of March 17, 2020[4]

LACERA Portfolio	Value as of 3/17/20*	Month to Date Changes	Quarter to Date Changes
Total Fund Return	$53,633	-9%	-12%
Functional Asset Category Returns:			
Growth	$24,568	-13%	-19%
Credit	$6,594	-8%	-8%
Real Assets and Inflation Hedges	$9,093	-8%	-11%
Risk Reduction and Mitigation	$13,378	-2%	1%

**$ in millions*

[2] The Chicago Board Options Exchange Volatility (CBOE Volatility) Index is a real-time market index that represents the market's expectation of 30-day forward-looking volatility and is used to measure the level of stress in the equity market.
[3] A bond spread is the difference in the yield between a non-Treasury bond and a Treasury bond; is indicative of the amount of excess return required to take additional credit risk (in this case high yield credit risk).
[4] LACERA's portfolio includes private assets, which do not price on a daily basis.

Overall LACERA's Total Fund is down an estimated 9% on a month-to-date basis and approximately 12% since January 1, 2020, as of March 17, 2020. LACERA's portfolio construction, which relies on its functional asset categories working together to enhance diversification, has exhibited both negative and positive performance. For example, while LACERA's growth strategies are down about 19% since the beginning of the calendar year, LACERA's risk reduction and mitigation asset category is up about 1% over the same period. In addition, LACERA's real assets and credit categories have exhibited less than half of the drawdowns experienced by the MSCI ACWI IMI. LACERA's carefully constructed asset allocation and strategic implementation aim to allow the portfolio to weather market shocks, while also being able to take advantage of long-term growth trends.

Total Fund Position and Liquidity

The Total Fund market value was $53.6 billion, as of close of business on March 17, 2020. Note that valuations for LACERA's private market assets (such as private equity and real estate) lag by three months and the impact of recent market developments on these assets will not be known for approximately three months. With that said, the indicative return for the Total Fund as of yesterday was -9.0% month-to-date.

LACERA currently holds $2.2 billion in cash. LACERA targets a cash weight of 0.5%, per its strategic asset allocation, but currently holds approximately 4%. The higher cash position is due to recent mandate terminations, cash inflows, and the anticipated funding of new, upcoming mandates. When LACERA has a cash position over the 0.5% target—as we currently do—the excess cash is invested in the cash "overlay" program. The overlay program allows the Fund to maintain approved policy targets by gaining market exposure at the functional asset category level. The overlay strategy rebalances this exposure on a daily basis to the most underweight asset category, while also maintaining the liquidity of cash.

In addition to our cash position, LACERA has approximately $32 billion—or almost 60% of the Total Fund—in assets that are more liquid in nature and could be converted to cash in a relatively short timeframe. These investments are LACERA's public equity, investment-grade fixed income, Treasury Inflation-Protected Securities ("TIPS"), and real asset completion portfolios.

LACERA has a two-pronged rebalancing program, where both the approved asset allocation and our liquidity position are examined daily. The first is LACERA's Total Fund cash overlay strategy as mentioned above. The overlay provides liquidity while adhering to LACERA's strategic asset allocation. The second approach is overseen internally. The Fund's allocation is reviewed daily versus policy weights and physical assets are rebalanced if the policy bands are breached at the functional asset category and sub-category levels. Both approaches are systematic. Future cash needs are projected over a month period.

LACERA's cash management positions us to retain adequate liquidity to meet obligations.

OPEB Master Trust

The OPEB Master Trust ("OPEB") is comprised of three separate sub-trusts: 1) Los Angeles County, 2) LACERA, and 3) Superior Court. OPEB assets are allocated to four functional categories: Growth, Credit, Real Assets and Inflation Hedges, and Risk Reduction and Mitigation. Within each functional category, assets are primarily invested in passive funds with the exception of a separately managed enhanced cash account in the Risk Reduction and Mitigation category.

As of the market close on March 17, 2020, OPEB declined 14.4% month-to-date and 19.4% year-to-date, primarily driven by the large drawdowns in the OPEB Growth and OPEB Real Assets and Inflation Hedges functional categories. The OPEB Growth category is comprised of a global equity MSCI All Country World IMI fund. As expected, Growth was the biggest detractor, declining 18.1% month-to-date and 25.8% year-to-date. The OPEB Credit category consists of three funds: high yield bonds, bank loans, and emerging markets debt (local currency). With credit spreads widening, Credit fell 11.0% month-to-date and 12.9% year-to-date with all three underlying funds posting negative returns mid-month. The OPEB Real Assets and Inflation Hedges category is a combination of commodities, real estate investment trusts ("REITs"), and treasury inflation-protected securities ("TIPS"). The composite declined 15.5% month-to-date and 20.1% year-to-date, led by greater than 20% losses suffered in the REITs fund for both month-to-date and year-to-date periods. Returns were slightly cushioned by the muted losses experienced in the TIPS fund. The OPEB Risk Reduction and Mitigation category includes an investment grade bond fund as well as a separately managed enhanced cash account. The composite fell 1.6% month-to-date, but remains modestly positive at 1.5% year-to-date. The enhanced cash account is currently yielding 2.3%, but is expected to trim down once the Fed rate cut is reflected.

Concluding Comments

As a multi-generation plan focused on the ultimate mission to pay benefits today, tomorrow, and into the future, LACERA has a deliberate investment approach to ensure the Total Fund can meet current and future obligations. As such, LACERA has intentionally developed and pursued an investment strategy that aims to navigate both positive and negative market environments. LACERA is guided by the Investment Beliefs that shape its Investment Policy Statement and strategic asset allocation. This foundation is designed to participate in growth during expansionary economic periods and protect the corpus of the portfolio in volatile markets.

Markets have had a tumultuous start to 2020. Some market observers have characterized current market dynamics as a "hundred-year event". Nevertheless, LACERA and its staff remain vigilant, engaged, and responsive to understand, invest, and protect the Total Fund's assets. We rely on the years of careful portfolio construction and preparation to build a stronger, more resilient asset allocation and we are committed to doing everything that is in our immediate control to ensure that LACERA continues to pay benefits now and for future generations to come.

In the Investments Division, we are committed to meeting any challenges that the current market environment presents and will continue to monitor the investment portfolio with prudence and care as LACERA's stakeholders deserve. LACERA has established policies, practices, and strategy that guide our actions. In turbulent times, such as in recent weeks, we draw guidance from our

Investment Policy Statement (including Investment Beliefs), strategic asset allocation and asset category structure reviews. The 2020 Work Plan also informs our actions. While market events and new information may adjust our future activity, our long-term, strategic course remains intact. We will preserve an adequate cash position to pay near-term benefits and further strive to identify investment opportunities that can position the portfolio to grow in the future to support long-term liabilities.

Attached to this memo is a description of how recent events have impacted segments of LACERA's portfolio. The attachment prioritizes timeliness of information, as we are dedicated to keeping you informed about portfolio developments during this period of market volatility. We note, however, that the market environment remains dynamic and, as such, any information may be outdated as developments continue to unfold. We will endeavor to keep the Trustees apprised of developments in a timely and thoughtful manner.

Now more than ever, our team approach in the Investments Division is crucial. We are available to address any comments or concerns.

Fund Position By Functional Asset Class Category

Please find below information and analysis of recent performance and market positioning for each of LACERA's functional asset class categories.

Growth *(47.4% of Total Fund as of February 29, 2020)*

LACERA's "growth" assets are expected to be the primary driver of total returns for the Fund over the long-term. As outlined in the IPS, growth assets are highly sensitive to economic conditions.

<u>Global Equity</u>

Global equity markets have been volatile since February, driven by a growing fear of the coronavirus pandemic disrupting supply chains and consumer demands, as well as recent Saudi-Russian oil price tension. Month-to-date, the MSCI ACWI IMI Index is down 18.1% as of March 17, 2020. By regions, the U.S. market, as measured by the MSCI US IMI Index, is down 16.1%, and Non-U.S. markets, as measured by the MSCI ACWI ex-US IMI Index, are down 20.7%. Within Non-U.S. markets, Emerging Markets fell 18.2%.

Portfolio Positioning

The global equity market downturn has been broad-based with each of the eleven Global Industry Classification Standard ("GICS") sectors generating negative returns year-to-date through March 17, 2020. The primary objective of the global equities portfolio is to provide equity market exposure (as measured by the MSCI ACWI IMI Index) with a secondary objective of generating alpha.

During this sell-off, the global equity portfolio performance has generally mirrored that of the broader equity markets. The portfolio is somewhat overweight smaller cap stocks and underweight the larger cap stocks, relative to the MSCI ACWI IMI benchmark. Given that small cap stocks have trailed large cap stocks by about 11% year-to-date, staff expects a modest drag to performance. The portfolio's slight overweight to emerging markets is expected to provide some relief since emerging market equities have moderately outperformed their developed markets counterparts during this downturn.

At the sector level, more cyclically sensitive sectors—such as energy, financials, materials and industrials—have been hit the hardest. The portfolio's underweight to these sectors has provided some protection, but not enough to offset the portfolio's underweight to the larger technology stocks, which have outperformed on a relative basis.

Reaction to Market and Related Mitigants

In December 2019, the Board established market cap and geographic ranges of +/- 5% relative to the global equity benchmark. To bring the portfolio's exposures more in-line with the MSCI ACWI IMI index and within Board-approved ranges, staff plans to propose recommendations to the Board to address the portfolio's underweight to larger cap stocks and to reduce the portfolio's volatility.

LACERA's latest global equities structure review sets a 15% target allocation to Factor-Based strategies.

The factor-based strategy mandate, planned for the March BOI meeting, is intended to provide a more cost-efficient means to capture returns associated with well-researched, persistent equity factors, while reducing volatility. Staff is contemplating modifications through upcoming Board recommendations to lower portfolio tracking error, consolidate manager line-up, and improve portfolio efficiency.

In a period of extreme market volatility and uncertainty around the duration and depth of the market sell-off, LACERA is maintaining a long-term focus and adhering to the strategic allocation approved in the latest structure review. Over the long-term, LACERA expects global equity risk commensurate with overall market beta, but with higher risk-adjusted returns.

Private Equity

The current market turmoil is not isolated to public equities; ramifications from COVID-19 may be a potential tipping point into a prolonged global economic downturn and may economically and operationally impact LACERA's private equity portfolio as well. The full impact of COVID-19 on private equity backed-companies is too early to fully assess since private equity assets are generally valued only four times per year, creating an inherent valuation lag. This may provide the benefit of time for price discovery to value assets correctly while also potentially smoothing returns across multiple reporting periods.

That said, COVID-19 and current economic uncertainty may lead to a pull back on mergers and acquisitions ("M&A") activity in the market. Supply chain disruptions, decreased customer demand, labor shortages, and volatility in the private equity market may place downward pressure on M&A pricing, leading to a disconnect between buyers who seek lower valuations and sellers who demand a specific price target. Private equity funds may find it difficult to execute exit strategies for their existing portfolio companies and may wait until there is more stability in the market. Operational constraints—such as travel restrictions and virus-related containment measures—may make it difficult for private equity firms to source and diligence deals. Accordingly, fund sponsors may need more time to deploy committed capital. Similarly, the inability for investors to conduct in-person diligence meetings with potential private equity managers may lead to a slowdown in fundraising. Private equity firms may postpone fundraising until travel is back to normal and virus containment policies have been relaxed.

Tightening of credit markets may reduce M&A activity. Companies are drawing on credit lines to cope with market volatility and dwindling corporate cash flows, putting pressure on lenders. Coupled with the increased risk of corporate downgrades and defaults, lenders may be conservative in extending credit. Private equity funds trying to execute an M&A deal may find credit more expensive and difficult to obtain and with more financial covenants than recent years.

Portfolio Positioning

While not completely insulated, the private equity portfolio is relatively well-positioned for a short to medium-term downturn given LACERA's historical focus on portfolio intentionality and diversification. Moreover, while the portfolio is currently overweight in the information technology ("IT") sector, LACERA's IT investments generally possess business models that are more economically resilient. For instance, a significant portion of these investments utilize software as a service ("SaaS") business models that provide essential services which are deeply embedded in their customers' organizations. The mission critical nature of these businesses may create high switching costs for customers, potentially putting SaaS companies in a better position to retain customers and generate recurring revenues during an economic downturn than companies with more traditional business models.

Secondly, LACERA's preference for investing with general partners who are sector specialists should translate into enhanced management of our private equity investments. Possessing sector-specific knowledge and operational capabilities should allow managers to navigate sector-specific issues and idiosyncrasies, both of which tend to escalate during periods of economic uncertainty.

Finally, with the recent execution of several co-investments and secondary purchases, LACERA has expanded its investing capabilities. This may position LACERA to capture near-term opportunities—such as prospective investments that may outperform despite weak market conditions. These may include investments that possess recession-resistant characteristics in highly defensive sectors such as consumer staples and healthcare. For new fund commitments, LACERA also plans to adopt a similar sector and investment philosophy but with a renewed interest in committing to distressed, special situations, and value-oriented managers who have demonstrated an ability to invest capital during past dislocations.

Market Opportunities

While every market downturn is different, LACERA may also draw from lessons learned during the Global Financial Crisis ("GFC"). For example, as the GFC was unfolding, LACERA temporarily suspended new private equity fund commitments (as did other limited partners). Looking back, LACERA would have been better served maintaining a consistent investment pace. The 2009 vintage year has been one of the best performing vintage years in private equity over the past two decades. Though we cannot predict the duration and severity of the COVID-19 pandemic, we can learn from the past and sustain our deployment pace in both good markets and bad.

Similarly, 2009 was a great time to be a buyer in the private equity secondaries market with an average pricing discount of nearly 45% of net asset value for leveraged buyout ("LBO") transactions according to Setter Capital. Many limited partners, including leading endowments, reduced their private equity exposure during the GFC due to the significant losses incurred in other parts of their portfolio. Others were in need of liquidity, and therefore were motivated sellers willing to accept a significant discount to their portfolios. Notably, this attractive "window of opportunity" only lasted about a year, as average pricing discounts for these secondary LBO purchase transactions dropped from 45% to 20% by 2010. Thus, only those investors who were nimble and able to recognize that these discounts were driven by limited-partner specific issues, rather than portfolio impairments, were rewarded.

With the GFC learnings in mind, LACERA anticipates maintaining its investment pace and opportunistically scanning the private equity landscape to help the Total Fund access equity exposures that are either mispriced, difficult to find, and/or unavailable in public markets. Some of these structures (e.g., stapled secondaries,[5] general partner stakes,[6] preferred equity[7]) might be new and/or require delegated authority in order to meet tight transaction deadlines. We anticipate facilitating Board education and deliberation on these structures in the future in order to prospectively position LACERA to act when opportunities arise during this and future downturns.

Risk Reduction and Mitigation *(26.7% of the Total Fund as of February 29, 2020)*

The objective of this asset category is to produce modest returns with a low level of volatility and a low correlation to growth assets. In the event of an overall market downturn, this asset category can be a source of liquidity for benefit payments. The category consists of three segments: cash, investment grade bonds, and hedge funds.

Cash

The cash portfolio is invested in high-quality, short-term fixed income instruments. Given its market value of about $2.2 billion, the cash portfolio provides ample liquidity to the Total Fund to support near-term cash obligations, including member benefits. Looking within the cash portfolio, there is plenty of liquidity, with approximately 25% readily accessible overnight. The portfolio's duration is less than 0.5 years—meaning there is a relatively low degree of interest rate risk—and 60% of the cash portfolio matures within six months. The Fed has taken a number of steps in an effort to inject liquidity into the financial system. These steps include cutting overnight lending rates to essentially zero. Although the rate cut is immediate, the cash portfolio benefits from the higher yield of cash instruments purchased prior to the cut. Therefore, the portfolio's yield as of March 17th was 1.6%. This will decline as positions mature and proceeds are reinvested.

Investment Grade Bonds

Recession concerns caused by the pandemic have triggered a flight to assets viewed to be high quality, resulting in a dramatic decline in U.S. Treasury yields. The 10-year Treasury yield started the year at 1.92%, fell to a historic low of 0.31% on March 9th, but has since rebounded to 1.24%. That is still a significant 0.68% yield decline (price rally). But looking only at the beginning and ending yields masks the significant rise in volatility. This volatility impacts the Treasury market directly, but it also indirectly impacts all other bond sectors, because all other sectors are priced relative to Treasury securities.

Since bonds do not trade on an exchange, price discovery is always somewhat of a challenge. The large and swift yield changes experienced this year exacerbated the situation, resulting in an even more opaque market.

The investment grade bond markets have held up reasonably well during the market turbulence. The primary reason is that the benchmark for this segment is the Bloomberg Barclays U.S. Aggregate Bond Index, a broad measure of all fixed-rate, U.S. dollar-denominated, investment

[5] Stapled Secondary: combines the acquisition of the existing portfolio of fund asset(s) with an agreement by the acquirer (e.g., LACERA) to provide a capital commitment to the general partner's next fund.

[6] GP Stakes: direct equity investments representing a minority ownership position in a general partner's underlying management company.

[7] Preferred Equity: a fund-level financing that establishes a senior class of limited partner interests with preferential terms.

grade bonds with a maturity greater than one year. The following table shows that Treasury bonds comprise over 40% of this index, and mortgage-backed securities backed by government guarantees represent almost 26%. Adding in almost 6% for government-related bonds issued by Agencies and quasi-governmental entities, means that over 70% of the index has some degree of a government guarantee. Therefore, these sectors benefit from a flight to quality. In contrast, the hardest-hit sector is corporate bonds. The demand shock caused by the pandemic hurts top-line revenue for corporations, and causes all fundamental financial metrics to deteriorate. As a result, delinquencies and defaults are expected to increase, and these concerns are reflected in corporate bond prices. All told, the Aggregate bond index is up 1.75% year-to-date, despite a negative return this month, as shown in the following table.

Index Component	% of Index	MTD Return	YTD Return
Treasury	40.6%	0.8%	6.0%
Gov-Related	5.9%	-3.3%	0.3%
MBS	25.9%	-0.1%	1.6%
Other Securitized	2.6%	0.6%	1.3%
Inv. Grade Corporate	25.0	-7.9%	-4.4%
AGGREGATE INDEX	**100.0%**	**-1.9%**	**1.8%**

LACERA's portfolio has performed as expected in this volatile environment. Approximately 75% of LACERA's bond portfolio is Core bond strategies, 80% of which is invested in an index fund. The remaining 25% is in Core Plus strategies. The index fund has tracked the index closely, performing within a basis point of the index. The Core portfolio is up 1.5% for the year, underperforming the index by 0.3%. The Core Plus strategies have lagged the most, as they have a slightly higher risk profile. The Core Plus portfolios are down 2.2% for the year. Combined, the investment grade bond portfolio return is down 2.9% month-to-date and up 0.6% year-to-date.

<u>Hedge Funds</u>

The current hedge funds portfolio has a low degree of growth risk and market directionality by design. However, widespread market volatility can affect the hedge funds portfolio, especially in the short-term. The broad selling of risk assets that has occurred in early March has resulted in losses for the hedge funds portfolio.

After discussions with each direct manager in the portfolio, we estimate that the hedge funds portfolio has lost approximately 3-4% month-to-date. This estimate of LACERA's portfolio is modestly better than broad hedge fund indices. The relative outperformance is likely a result of the broad hedge fund indices having exposure to a higher degree of equity risk, which LACERA strives to substantially limit. LACERA's hedge funds portfolio intentionally includes relative value and arbitrage strategies that have outperformed broad hedge fund indices so far in March. Additionally, managers across the direct program were generally cautious going into this drawdown and are now investing available cash.

LACERA is currently under-allocated to hedge funds by approximately $1.5 billion (this incorporates the upcoming redemptions of the remaining $300 million across two hedge fund-of-funds). Given the current market conditions and under allocation of the portfolio, market conditions may enable LACERA to deploy additional capital to existing managers in a manner that is consistent with the current structure review. These managers have experience investing through volatile markets and multiple market cycles. Additional allocations to these existing managers would not substantially add directional growth or credit risk.

Staff has a manager recommendation scheduled for the next BOI meeting and is considering two additional manager recommendations for future months. As long-term investors, LACERA anticipates continuing to buildout the direct hedge funds portfolio.

Real Assets *(16.8% of the Total Fund as of February 29, 2020)*

LACERA's real assets investments are intended to provide income as well as hedge against inflation, while diversifying the Fund due to the low correlation of returns between these assets and other asset categories. Real assets include investments in real estate, natural resources, commodities, and TIPs.

Real Estate

Supply and demand fundamentals have been in a reasonable state of balance. The COVID-19 pandemic is negatively impacting demand for some property types, especially for the retail sector. However, some e-retailers, such as Amazon, are being positively impacted by the pandemic as more shoppers use online shopping. Amazon has announced plans to hire 100,000 additional workers in the United States to fuel e-commerce deliveries. Small businesses and restaurants are likely to be negatively impacted, potentially leading to rental delinquencies.

Even though prices have been high and yields low, capital markets demand for real estate has been strong. It will take some time to determine how the pandemic impacts transaction pace and valuations. However, conversations with active buyers and lenders suggest that buyers are nervous and pulling back. Similarly, lenders are repricing quotes or declining to quote on loan requests. Multifamily and industrial properties remain favorites for lenders.

Status of Investments

Real estate assets are marked to market on a quarterly basis by the external managers/general partners and annually by third-party appraisers. Therefore, there is not yet any valuation information that reflects the COVID-19 pandemic. It is likely that the market uncertainty may lead to an increase in capitalization rates, which would cause values to decline. Any increase in cap rates should be tempered by the decrease in government bond yields. The historical (20-year average) spread between cap rates and 10-year treasury yields have been about 250 basis points. Since the yield on 10-year Treasuries has fallen, this should help sustain pricing for real estate. Notably, the REIT sector is down 28.9% quarter-to-date, as of March 17, 2020. The REIT sector is sometimes a leading indicator of pricing for private real estate.

A particularly vulnerable segment of the portfolio may be the student housing properties. LACERA owns six such assets valued at approximately $325 million. Occupancy for these student housing assets has dropped below 50% as schools shut down early and students return home. A key factor will be how the virus impacts leasing for the next school year.

Portfolio Positioning

With a high concentration of stabilized assets, low leverage, and deliberate property type under/over-weights, LACERA's real estate portfolio is relatively well-positioned for a potential economic downturn. Close to 80% of the real estate portfolio is in Real Assets and Inflation Hedges, comprised of 74.1% Core stabilized properties and 5.6% Value-Add assets. Real estate portfolio leverage is approximately 31.1%, comprised of mainly fixed interest rate debt. Core levered assets in the separate account portfolio have an average debt service coverage ratio of 2.7x. Compared to the ODCE benchmark, LACERA is underweight office by 11.4% and overweight apartments by 6.8%.

Opportunities

Lower pricing may occur in real estate. However, LACERA's asset allocation may limit the Total Fund's ability to purchase at lower prices due to the existing over-allocation to real estate. To the extent that real estate valuations decline, LACERA's entry price in open-end commingled funds will be lower. LACERA is also under-allocated to "growth" opportunities in real estate. Current market volatility may present attractive entry pricing for the Total Fund.

TIPS

The prices for Treasury Inflation Protected Securities ("TIPS") have come down this month despite their safe haven status as government-backed treasury bonds. This has been due to a rapid drop in inflation expectations to below 1%. LACERA's TIPS portfolio is down about 4% month-to-date and flat year-to-date. LACERA is somewhat underweight TIPS, with a current allocation of 2% and a policy allocation of 3%. TIPS are intended to provide a hedge against increasing inflation expectations. Current market conditions seem unlikely to result in inflation, although certain developments—such as fiscal stimulus—may induce some inflationary pressure.

Commodities

Commodities have suffered losses this year as global growth expectations have evaporated, beginning with China. China accounts for a large share of global commodity market demand and the rapid slowdown there moved markets lower starting in January. Further spreading of demand weakness to the rest of the world led commodities markets lower through the remainder of the quarter to date. LACERA's commodities portfolio is down about 12% month-to-date and 23% year-to-date.

In addition to the demand dynamics negatively affecting nearly all commodities, oil has faced an additional price pressure from the response of two of the world's largest global suppliers—Saudi Arabia and Russia—to maintain or increase production despite weaker demand. Saudi Arabia started a price war by ramping up production from 9 MB/D (million barrels per day) to 12 MB/D, causing crude oil prices to decline 30% in one day to below $30/barrel for U.S. traded oil futures and have reached as low as $20/barrel, as of March 18, 2020. Saudi Arabia and Russia's objective is to drive out U.S. shale production, which has grown sharply in recent years, by maintaining an oil price below the lowest cost of new U.S. production. It is estimated that the lowest cost shale oil development is around $40/barrel and the variable cost of already-developed shale production is between $20 to $25/barrel. Prices are likely to stay in a range between $20 to $40/barrel for the near future. The pressure to eventually increase prices may be led by the effect of low prices on Russia's and Saudi Arabia's own domestic economies or by a measurable decline in U.S. shale production shut in by lower prices.

The only exception among market dynamics in commodities is gold, which has generally been stable and has served as a relative safe haven. Gold has remained attractive within the Fund's commodities allocation despite reduced inflation expectations.

Real Assets Completion Portfolio

LACERA's Real Asset completion porfolio of equities (e.g., infrastructure and natural resources) has dropped 19% month-to-date and 27% year-to-date. LACERA's portfolio takes modest tilts between infrastructure and natural resources and was positioned more defensively by overweighting infrastructure and underweighting energy leading into the market weakness which led to modest gains over the benchmark of 2-3%. Going forward, the positioning continues to be somewhat defensive given the lingering uncertainty around the impact of COVID-19 and the ongoing supply and demand dynamics depressing crude oil prices.

LACERA is considering its first private investment in infrastructure and expects to bring forth a recommendation in the coming months. Valuation of infrastructure assets will have to be underwritten to understand the impacts of changes in discount rates. Lower discount rates lead to higher valuations. It is still uncertain if lower discount rates being led by lower interest rates, will be offset by higher equity risk premiums resulting from more market uncertainty. Additionally, demand or revenue forecasts for infrastructure assets may need to be updated as the result of market shifts or idiosyncratic effects.

We continue to review the landscape for private natural resources. Given the decline in oil prices, the timing to build a portfolio in energy investments is less susceptible to downside risk going forward. LACERA is looking at the opportunity set of private investment in the space and expects that there may be motivated sellers in the private secondary markets of energy funds or in the private market for currently-producing oil and gas assets. LACERA's liquidity may enable us to make private investments in this environment, replacing capital already invested in public market assets as described in the recently approved structure review.

Credit *(8.6% of the Total Fund as of February 29, 2020)*

The credit portfolio's objective is to produce income and generate moderate long-term returns while incurring moderate levels of risk. This asset category consists of four segments: high yield, bank loans, emerging market debt, and illiquid credit. These segments have a moderate level of correlation to equity markets; as a result, they have generated negative returns for the month and year. However, the decline in prices means that the yield in these markets is now significantly higher than LACERA's actuarial target return.

Below-Investment-Grade Credit (High Yield Bonds / Bank Loans / Emerging Market Debt)

Liquidity has been a challenge across the high yield bond, bank loan, and emerging market debt markets. Little trading has occurred in these markets in light of the increased volatility in equity and Treasury securities. Price discovery for these assets has been challenged and bid/ask spreads (the difference between quoted buy/sell prices for a security) have widened significantly.

As the coronavirus outbreak continues, business disruption is expected to negatively impact corporate revenue, net income, and corporate financial ratios. At the industry level, the largest sell-offs occurred in the debt of commodity-related (energy), transportation (airlines), and leisure (cruise lines, hotels, entertainment) companies. This risk-off phenomenon is rippling to other industries as the reality of significant disruptions in day-to-day business operations globally leaves very few companies unscathed. Consequently, loan default rates are expected to increase. This is reflected in the yields and yield spreads of high yield bond and bank loan indices. Yield spreads refer to the difference in the yield between a non-Treasury bond and a Treasury bond and are indicative of the amount of excess return an investor requires to take additional credit risk (in this case high yield and bank loan credit risk).

	12/31/2019		**3/17/2020**	
	Yield to Maturity	Yield Spread	Yield to Maturity	Yield Spread
High Yield Credit	6.0%	3.4%	9.4%	8.5%
Bank Loans	6.1%	4.6%	9.7%	9.0%

As shown in the table above, the average yield of the high yield index increased from just under 6% at the start of the year, to over 9% as of March 17th. As a result, the high yield index total return for the month-to-date is down 11.5%, and the year-to-date return is down 12.7%. As these returns indicate, most of the damage has occurred in March. Bank loan yield spreads have also increased, albeit at a lesser rate, reflecting their higher position in the capital structure and the fact that loans are secured by collateral. The bank loan index return is down 10.5% month-to-date and down 11.2% year-to-date. Consequently, the primary market for bonds and loans has essentially shut down, with few issuers coming to market in this volatile environment.

Emerging Market Debt has also declined in price, in light of the important role of commodities to many emerging market economies and heightened geopolitical concerns. Dollar-denominated bonds, issued by both sovereigns and corporations are down about 12% for the year, while bonds denominated in local currencies are down approximately 6% for the year.
LACERA's portfolio of high yield bonds, loans, and emerging market debt, has performed slightly better than the indices, with returns of -9.6% month-to-date and -10.3% year-to-date.

Illiquidity and fear in the credit markets have historically created opportunity for long-term investors. Given the current environment, maintaining the course charted during the credit structure review is prudent. The higher yield in below-investment-grade credit means that yields are at attractive levels. Staff will look to opportunistically add to high yield bonds, loans, and emerging market debt, consistent with the approved allocation ranges.

Illiquid Credit

In drawdowns that include a widespread decrease in investor risk appetite (such as in early March), illiquid credit portfolios can decline as much or more than public credit/equity markets. Given the nature of this drawdown and the existing portfolio, we expect the illiquid credit portfolio is down 7-10% month-to-date. The lagged valuation and reporting conventions in this asset category make estimating performance challenging.

LACERA’s current illiquid credit portfolio includes $866 million of legacy positions from multiple asset categories (as of February month-end). The portfolio has breadth across corporate credit, consumer credit and asset-backed credit including real estate debt. Favorably, there is not a focus on either energy-related credits or distressed/lower quality investments, as these investments have underperformed in the current drawdown.

LACERA is under allocated to illiquid credit by approximately $1 billion. Looking forward and given the current dislocation, there is an opportunity to build-out the portfolio in the near future at pricing that is more attractive today compared to recent periods. There is currently $530 million of “dry powder” in the form of undrawn capital commitments to existing illiquid credit managers. Most notably, $425 million is available for a recently approved manager to invest in the coming weeks and months as opportunities arise across illiquid credit markets. We are conducting late-stage due diligence on at least two additional illiquid credit managers that would complement the existing portfolio and be well-positioned to source opportunities in the current drawdown. These two potential managers could fill some of the underweight to illiquid credit.

As a reminder, illiquid credit is a part of the portfolio where we seek to profit from idiosyncratic yields generated by assets, companies, and securities that are not widely available to the public markets. Accordingly, this asset category is less liquid and we should adopt a long-term investor’s mindset to this part of the portfolio. Illiquid credit is not a primary source of liquidity for the Total Fund. Should the stressed market environment continue over a longer time period and pending further diligence, we would consider a modest overweight allocation to illiquid credit.