Treasury Analysis and Liquidity Status Report

CalPERS

Prepared for: Finance and Administration Committee - Period Ending December 31, 2021

Public Employees' Retirement Fund (PERF)

The PERF provides retirement benefits to the State of California, schools and other California public agency employees. The PERF benefits are funded by member contributions, employer contributions, and by investment earnings. Changes in investment asset allocation and investment strategies can significantly impact data reported from period to period.

Liquidity Coverage Ratio Analysis

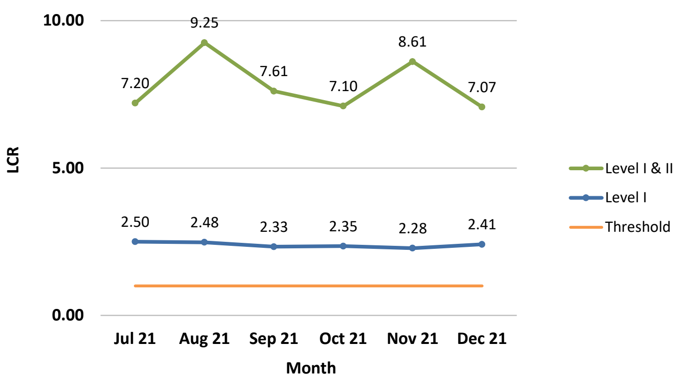
$$\text{Liquidity Coverage Ratios (LCR)} = \frac{\text{cash + assets convertible to cash + incoming cash sources}}{\text{outgoing cash uses + contingent cash uses}}$$

Funding Sources and Graph Details

Level I: Cash & cash equivalents (assets maturing less than 30-days)
Level II: Cash equivalents maturing greater than 30-days + borrowed liquidity held in cash
Level III: Sale of public assets
Threshold: Indicates the Fund's ability to cover 100% of monthly obligations.

Normal Environment - 30-Day Liquidity Coverage Ratios

The 30-day LCR included investment and non-investment available cash flows.



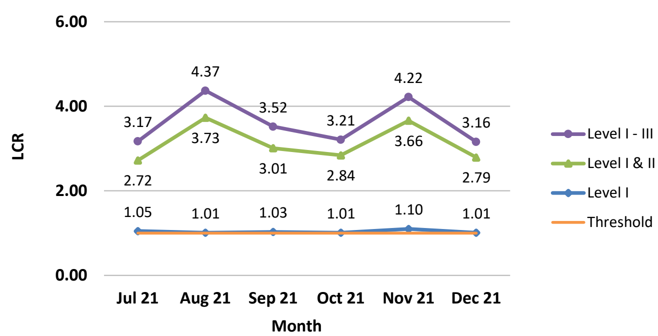
Level I: Level I LCRs remained above the threshold in July through December.

Level I & II: Since Level I LCRs remained above the threshold, it was not necessary to utilize Level II assets. Fluctuations in Level II assets are due to normal volatility of security lending balances.

Stressed Environments - 30-Day Liquidity Coverage Ratios

Stressed environment LCR scenarios were calculated assuming starting assets were stressed by the percentages actually experienced over 5 days in the 1987 market crash and 30 days during September 2008. Starting assets were further reduced by a transactional liquidity % equal to the estimated % of the assets that could have been liquidated during the 30-day period. Under the stressed scenarios, asset class sources were reduced to zero and uses were doubled.

1987 Market Crash "Black Monday"

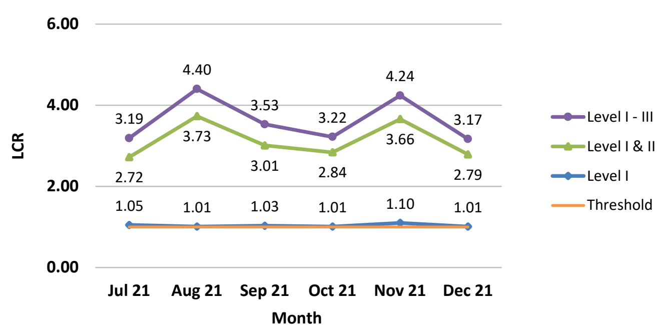


Level I: Level I assets would have been adequate had a stressed event similar to "Black Monday" occurred.

Level I & II: CalPERS would not have needed to use Level II assets.

Level I – III: CalPERS would not have needed to use Level III assets.

2008 Liquidity Crisis



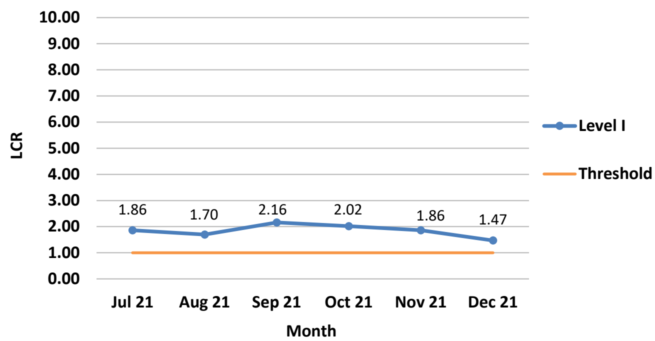
Level I: Level I assets are forecasted to be sufficient if a stressed event similar to the 2008 Liquidity Crisis were to occur.

Level I & II: CalPERS would not have needed to use Level II assets.

Level I – III: CalPERS would not have needed to use Level III assets.

Crisis Environment - 10-Day Liquidity Coverage Ratio

The 10-day LCR utilized only the available cash balance ten days prior to the payment date. The calculation assumed a five business day market lockdown as experienced on September 11th, 2001.



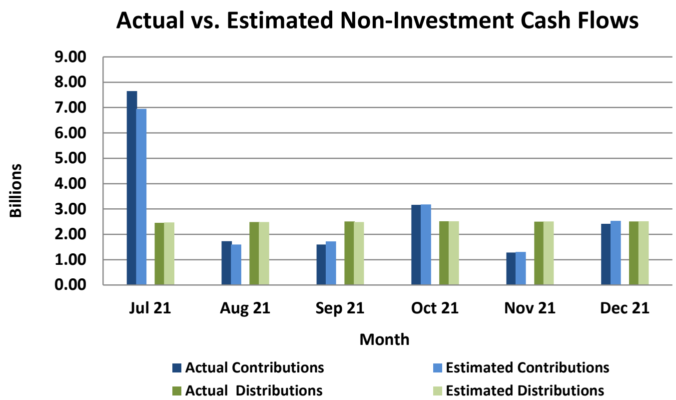
Level I: The PERF had sufficient cash to cover obligations ten days prior to the funding of member benefits from July to September. This indicated Level I was adequate had a crisis event occurred. In a crisis environment, CalPERS would not have access to Level II and Level III assets because it is assumed there was a five business day market lockdown similar to September 11th, 2001.

Overall PERF Liquidity Health

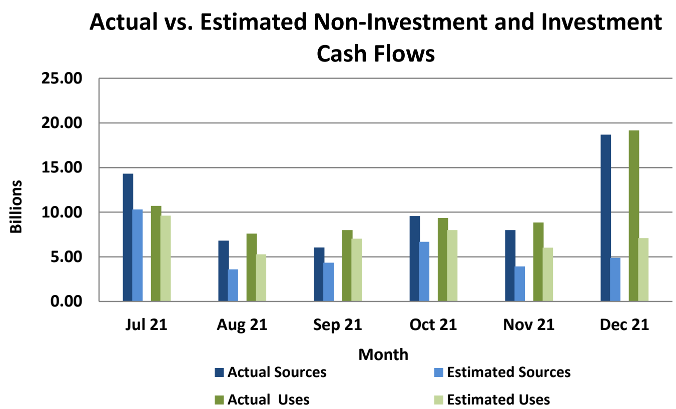
Coverage Ratio Analysis:

- ✓ CalPERS was able to make payments for benefits, operating expenses and projected investments regardless of market conditions.
- ✓ PERF's liquidity remained above the threshold in the normal environment and was adequate in stressed and crisis environments.

PERF Cash Flow Forecasting



Cash flow forecasting for July through December was in the 90th percentile. The increase in July's contributions was due to higher Unfunded Accrued Liability contributions.



Cash flow forecasting for total fund cash activities (both non-investment and investment) can be volatile. Actual cash flows will deviate from estimates due to trading, rebalancing, private asset contributions/distributions, and investment expenses.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee - Period Ending December 31, 2021

Legislators' Retirement Fund (LRF)

The LRF provides retirement benefits to California Legislators elected to office before November 7, 1990, and to constitutional, legislative, and statutory officers elected or appointed prior to January 1, 2013. The Fund is closed to new participants. The number of LRF members has been declining in the last decade as eligible incumbent Legislators leave office and are replaced by those ineligible to participate in the LRF. Actuarially determined contributions will continue to be made by the State of California to supplement the existing assets until all benefit obligations have been fulfilled. The Fund maintains a cash equivalent reserve equal to two months of member benefit payments and obligations.

Liquidity Coverage Ratio Analysis

$$\text{Liquidity Coverage Ratios (LCR)} = \frac{\text{cash + assets convertible to cash + incoming cash sources}}{\text{outgoing cash uses + contingent cash uses}}$$

Funding Sources and Graph Details

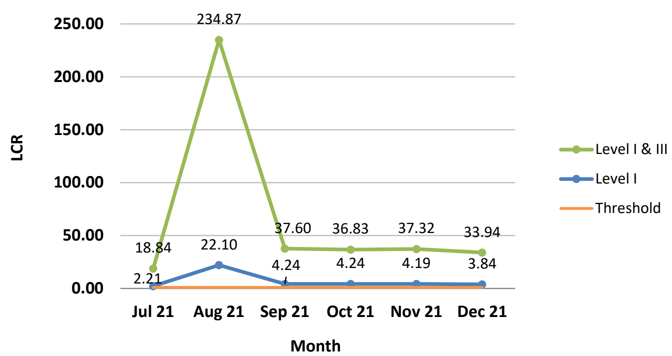
Level I: Cash and cash equivalents + Reserves

Level III: Sale of public assets

Threshold: Indicates the Fund's ability to cover 100% of monthly obligations

Normal Environment - 30-Day Liquidity Coverage Ratios

The 30-day LCR included investment and non-investment available cash flows.

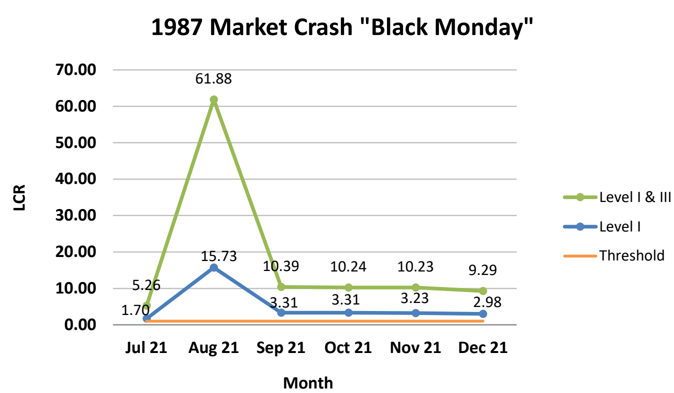


Level I: Level I LCRs remained above the threshold in July through December. The decrease in July's LCR and the subsequent increase in August's LCR was due to the timing of benefit payments.

Level I & III: Since Level I LCRs remained above the threshold, it was not necessary to utilize Level III assets.

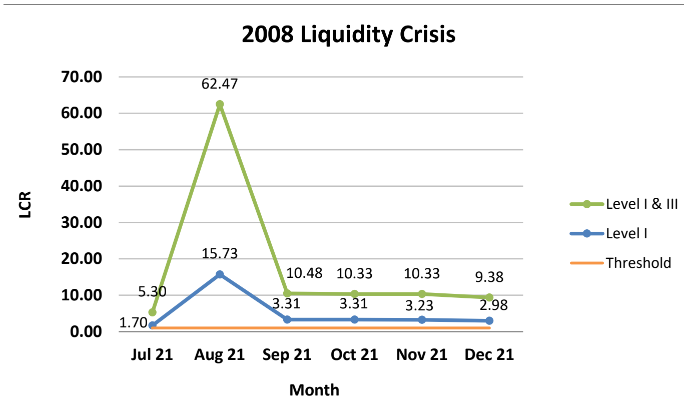
Stressed Environments - 30-Day Liquidity Coverage Ratios

Stressed environment LCR scenarios were calculated assuming starting assets were stressed by the percentages actually experienced over 5 days in the 1987 market crash and 30 days during September 2008. Starting assets were further reduced by a transactional liquidity % equal to the estimated % of the assets that could have been liquidated during the 30-day period. Under the stressed scenarios, asset class sources were reduced to zero.



Level I: Level I assets would have been adequate had a stressed event similar to "Black Monday" occurred. The decrease in July's LCR and the subsequent increase in August's LCR was due to the timing of benefit payments.

Level I & III: Since Level I LCRs remained above the threshold, it was not necessary to utilize Level III assets.

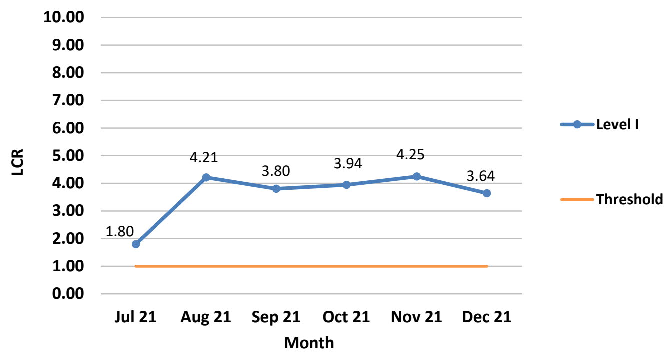


Level I: Level I assets would have been adequate had a stressed event similar to the 2008 Liquidity Crisis occurred. The decrease in July's LCR and the subsequent increase in August's LCR was due to the timing of benefit payments.

Level I & III: CalPERS would not have needed to use Level III assets.

Crisis Environment - 10-Day Liquidity Coverage Ratios

The 10-day LCRs utilized only the available cash balance ten days prior to the payment date. The calculation assumed a five business day market lockdown as experienced on September 11th, 2001.



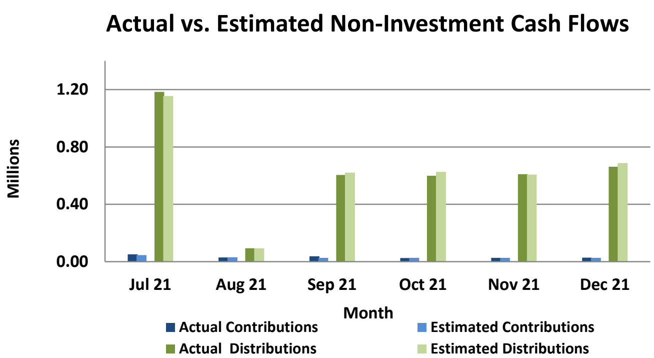
Level I: The LRF had sufficient cash to cover obligations ten days prior to the payment date. This indicated Level I would have been adequate had a crisis event occurred. In a crisis environment, CalPERS would not have access to Level III assets since it is assumed there was a five business day market lockdown similar to September 11th, 2001.

Overall LRF Liquidity Health

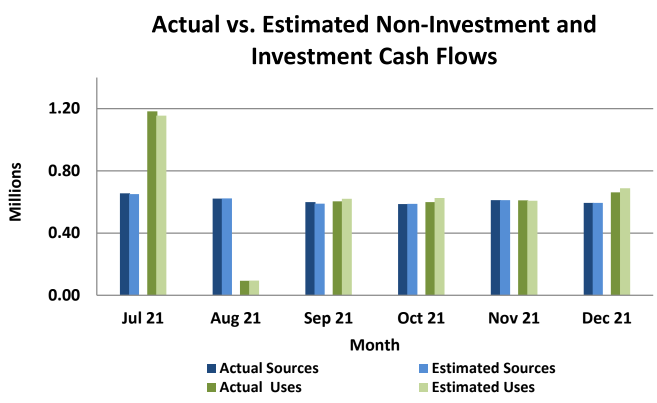
Coverage Ratio Analysis:

- ✓ LRF was able to make payments for benefits and operating expenses regardless of market conditions.
- ✓ LRF's liquidity remained above the threshold regardless of market conditions.

LRF Cash Flow Forecasting



Cash flow forecasting was in the 90th percentile. July's increase and August's subsequent decrease in distributions was due to timing of benefit payments.



Total cash flow forecasting was in the 90th percentile. July's increase and August's subsequent decrease in distributions was due to timing of benefit payments.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee - Period Ending December 31, 2021

CalPERS

Judges' Retirement Fund I (JRF I)

The JRF I provides retirement benefits to California Supreme and Appellate Court Justices and Superior Court Judges appointed or elected before November 9, 1994. The State of California does not pre-fund the benefits for this fund. The benefits are funded on a pay-as-you-go basis. The Fund maintains a reserve equal to two months of member benefit payments and obligations.

Liquidity Coverage Ratio Analysis

$$\text{Liquidity Coverage Ratios (LCR)} = \frac{\text{cash + assets convertible to cash + incoming cash sources}}{\text{outgoing cash uses + contingent cash uses}}$$

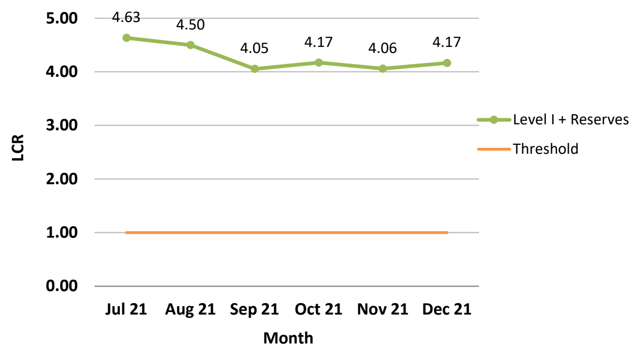
Funding Sources and Graph Details

Level I: Cash and cash equivalents + Reserves

Threshold: Indicates the Fund's ability to cover 100% of monthly obligations

Normal Environment - 30-Day Liquidity Coverage Ratios

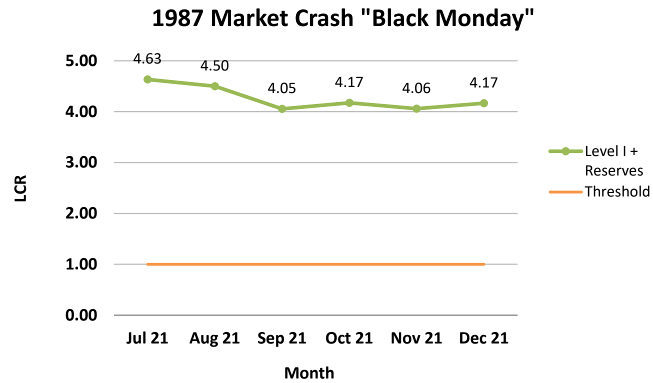
The 30-day LCR included investment and non-investment available cash flows.



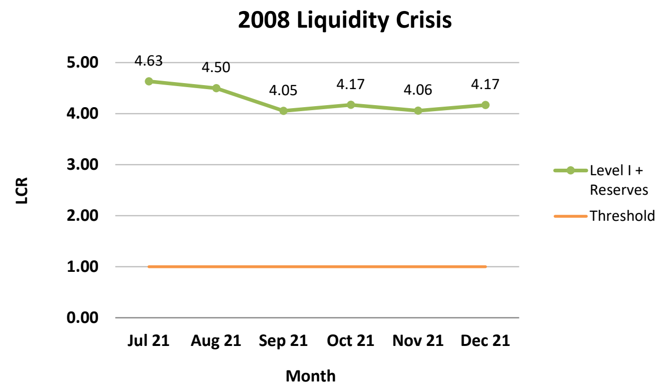
Level I & Reserves: Level I + Reserves LCRs remained above the threshold in July through December. Fluctuations in assets were typically due to Extended Service Incentive Program payments.

Stressed Environments - 30-Day Liquidity Coverage Ratios

Stressed environment LCR scenarios were calculated assuming starting assets were stressed by the percentages actually experienced over 5 days in the 1987 market crash and 30 days during September 2008. Starting assets were further reduced by a transactional liquidity % equal to the estimated % of the assets that could have been liquidated during the 30-day period. Since 100% of Reserves for JRS I were held in cash and cash equivalents, stress factors did not apply and the LCRs remained the same as the normal environment.



Level I & Reserves: Level I & Reserve assets would have been adequate had a stressed event similar to "Black Monday" occurred.



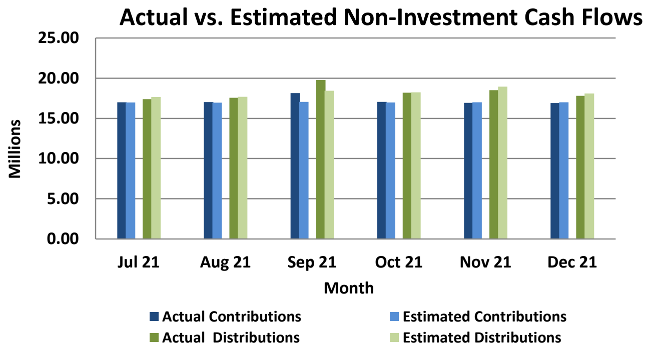
Level I & Reserves: Level I & Reserve asset would have been adequate had a stressed event similar to the 2008 Liquidity Crisis occurred.

Overall JRF I Liquidity Health

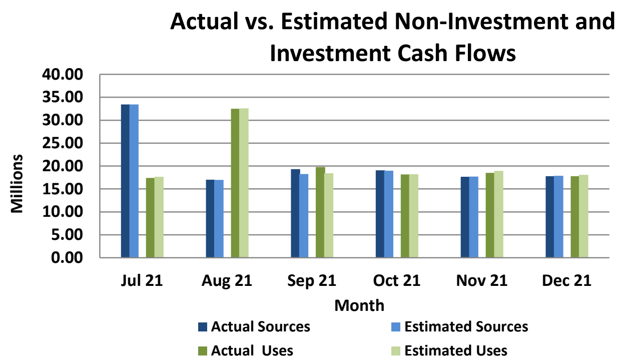
Based Coverage Ratio Analysis:

- ✓ JRF I was able to make payments for benefits and operating expenses regardless of market conditions.
- ✓ JRF I's liquidity remained above the threshold in the normal environment and was adequate in both stressed environments.

JRF I Cash Flow Forecasting



Cash flow forecasting accuracy was in the 90th percentile.



Cash flow forecasting accuracy was in the 90th percentile. July's increase in sources and August's subsequent increase in uses was due to timing of the investment transfer.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee - Period Ending December 31, 2021

Judges' Retirement Fund II (JRF II)

The JRF II provides retirement benefits to California Supreme and Appellate Court Justices and Superior Court Judges first appointed or elected on or after November 9, 1994. This system provides a unique combination of two basic types of retirement benefits: a defined benefit plan and a monetary credit plan. The benefit payment is comprised of member contributions and a portion of employer contributions, plus interest. Monetary Credits provide a lump sum payment to those Judges who leave the bench before reaching eligibility for the defined benefit plan.

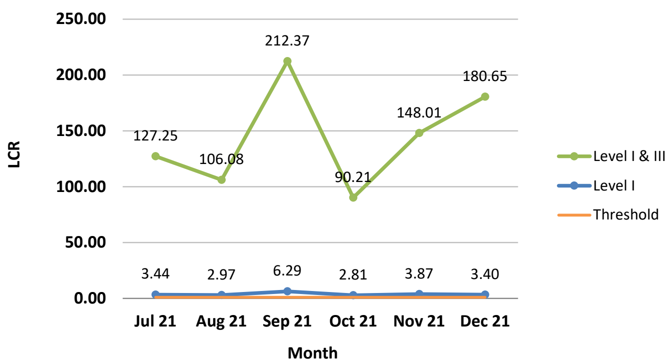
Liquidity Coverage Ratio Analysis

$$\text{Liquidity Coverage Ratios (LCR)} = \frac{\text{cash + assets convertible to cash + incoming cash sources}}{\text{outgoing cash uses + contingent cash uses}}$$

Funding Sources
Level I: Cash and cash equivalents
Level III: Sale of public assets
Threshold: Indicates the Fund's ability to cover 100% of monthly obligations

Normal Environment - 30-Day Liquidity Coverage Ratios

The 30-day LCR included investment and non-investment available cash flows.



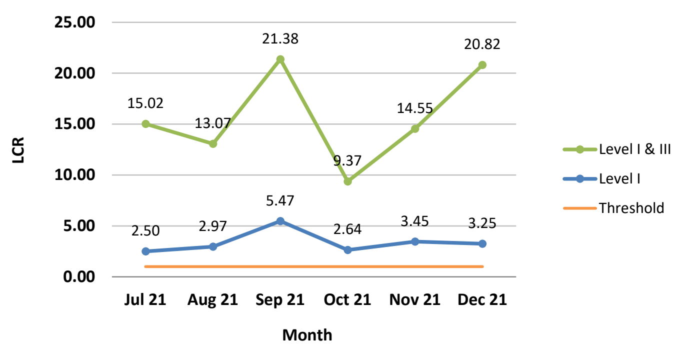
Level I: Level I LCRs remained above the threshold in July through December. Fluctuations in Level I assets were typically due to monetary credit payments.

Level I & III: Since Level I LCRs remained above the threshold, it was not necessary to use Level III assets. Fluctuations in Level III assets were typically due to monetary credit payments which can double the outflows for the month.

Stressed Environments - 30-Day Liquidity Coverage Ratios

Stressed environment LCR scenarios were calculated assuming starting assets were stressed by the percentages actually experienced over 5 days in the 1987 market crash and 30 days during September 2008. Starting assets were further reduced by a transactional liquidity % equal to the estimated % of the assets that could have been liquidated during the 30-day period. Under the stressed scenarios, asset class sources were reduced to zero.

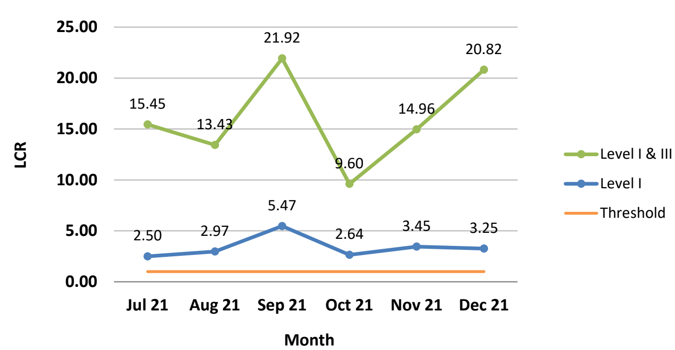
1987 Market Crash "Black Monday"



Level I: Level I assets would have been adequate had a stressed event similar to "Black Monday" occurred. Fluctuations in Level I assets were typically due to monetary credit payments.

Level I & III: CalPERS would not have needed to use Level III assets. Fluctuations in Level III assets were typically due to monetary credit payments which can double the outflows for the month.

2008 Liquidity Crisis

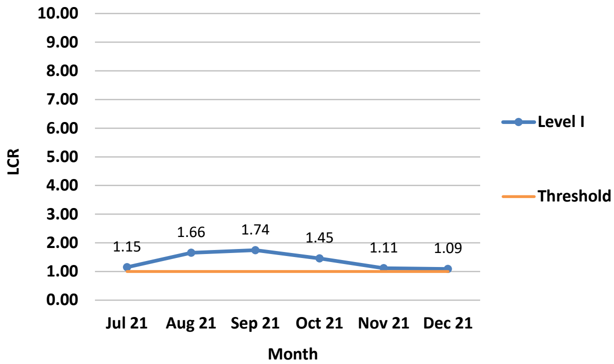


Level I: Level I assets would have been adequate had a stressed event similar to the 2008 Liquidity Crisis occurred.   Fluctuations in Level I assets were typically due to monetary credit payments.

Level I & III: CalPERS would not have needed to use Level III assets. Fluctuations in Level III assets were typically due to monetary credit payments which can double the outflows for the month.

Crisis Environment - 10-Day Liquidity Coverage Ratios

The 10-day LCR utilized only the cash balance ten days prior to the payment date. The calculation assumed a five business day market lockdown as experienced on September 11th, 2001.



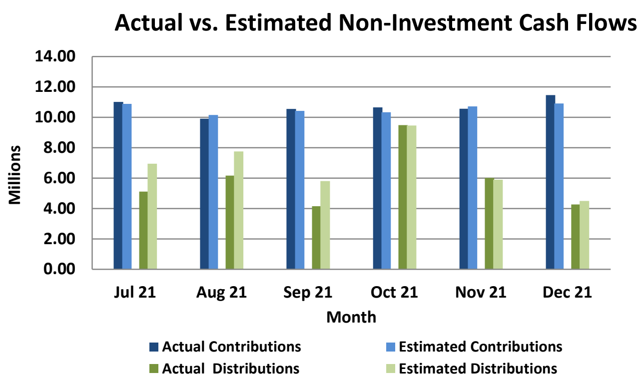
Level I: JRF II had sufficient cash to cover obligations ten days prior to the payment date. This indicated Level 1 was adequate had a crisis even occurred. In a crisis environment, CalPERS would not have access to Level III assets since it is assumed there was a five business day market lockdown similar to September 11th 2001.

Overall JRF II Liquidity Health

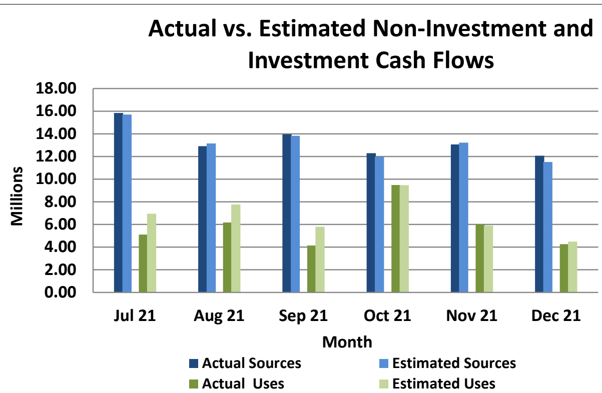
Coverage Ratio Analysis:

- ✓ JRF II was able to make payments for benefits and operating expenses regardless of market conditions.
- ✓ JRF II's liquidity remained above the threshold in the normal environment and was adequate in both stressed and crisis environments.

JRF II Cash Flow Forecasting



July through December's contributions accuracy was in the 90th percentile. JRF II's distribution accuracy was in the 70th percentile due to the timing of Monetary Credit Payments. Monetary Credit Payment discrepancies can occur when the actual retirement date differs from the initial planned retirement date. Monetary Credits provide a lump sum payment to those Judges who leave the bench before reaching eligibility for the defined benefit plan.



July through December's contributions accuracy was in the 90th percentile. JRF II's distribution accuracy was in the 70th percentile due to the timing of Monetary Credit Payments. Monetary Credit Payment discrepancies can occur when the actual retirement date differs from the initial planned retirement date. Monetary Credits provide a lump sum payment to those Judges who leave the bench before reaching eligibility for the defined benefit plan.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee - Period Ending December 31, 2021

CalPERS

Health Care Fund (HCF)

The HCF accounts for the activities of the CalPERS self-insured health care programs. Health premiums are collected from employers and members and used to directly pay for medical services and pharmaceutical usage.

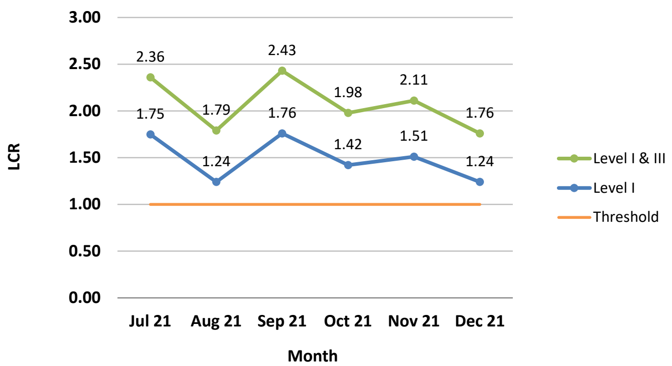
Liquidity Coverage Ratio Analysis

$$\text{Liquidity Coverage Ratios (LCR)} = \frac{\text{cash + assets convertible to cash + incoming cash sources}}{\text{outgoing cash uses + contingent cash uses}}$$

Funding Sources and Graph Details
Level I: Cash and cash equivalents
Level III: Sale of public assets
Threshold: Indicates the Fund's ability to cover 100% of monthly obligations

Normal Environment - 30-Day Liquidity Coverage Ratios

The 30-day LCR included investment and non-investment available cash flows.



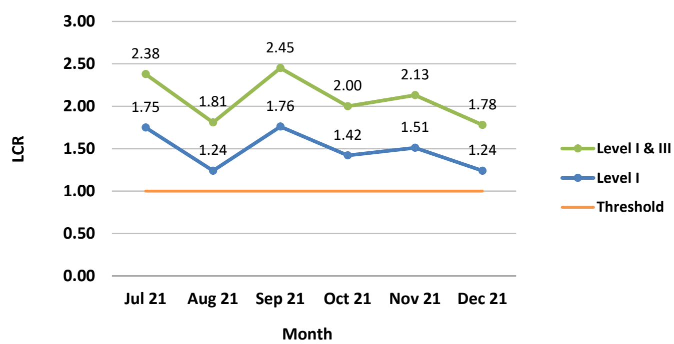
Level I: Level I LCRs remained above the threshold in July through December.

Level I & III: Since Level I LCRs remained above the threshold, it was not necessary to utilize Level III assets.

Stressed Environments - 30-Day Liquidity Coverage Ratios

Stressed environment LCR scenarios were calculated assuming starting assets were stressed by the percentages actually experienced over 5 days in the 1987 market crash and 30 days during September 2008. Starting assets were further reduced by a transactional liquidity % equal to the estimated % of the assets that could have been liquidated during the 30-day period. Under the stressed scenarios, asset class sources were reduced to zero.

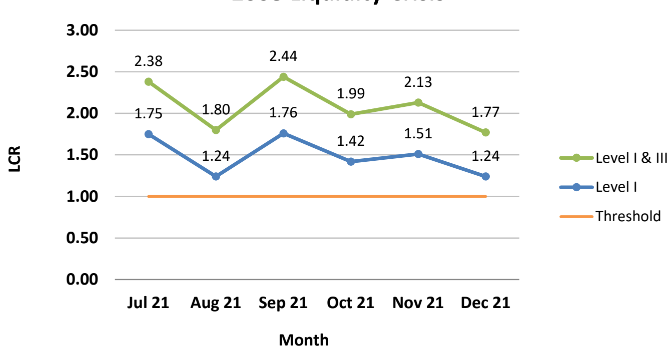
1987 Market Crash "Black Monday"



Level I: Level I assets would have been adequate had a stressed event similar to "Black Monday" occurred.

Level I & III: CalPERS would not have needed to use Level III assets. Since 100% of Level III assets for HCF were held in cash, cash equivalents, and fixed income, stress factors had a minimal impact to LCRs.

2008 Liquidity Crisis



Level I: Level I assets would have been adequate had a stressed event similar to the 2008 Liquidity Crisis occurred.

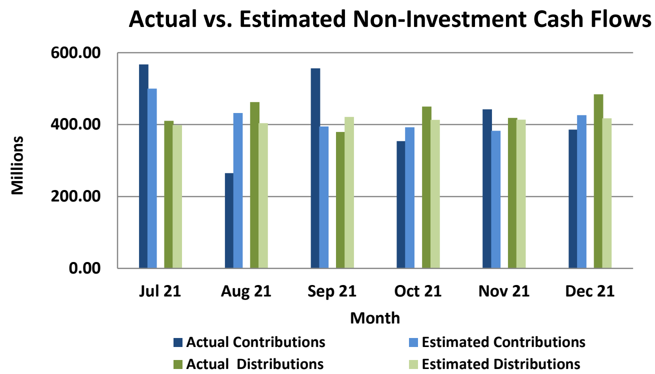
Level I & III: CalPERS would not have needed to use Level III assets. Since 100% of Level III assets for HCF were held in cash, cash equivalents, and fixed income, stress factors had minimal impact to the LCRs.

Overall HCF Liquidity Health

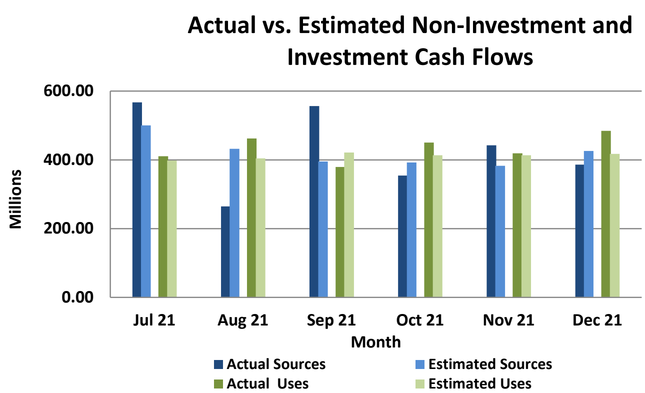
Coverage Ratio Analysis:

- ✓ HCF was able to make payments for health premiums, medical claims and operating expenses regardless of market conditions.
- ✓ HCF's liquidity remained above the threshold in the normal environment and were adequate in stressed environments.

HCF Cash Flow Forecasting



Contribution accuracy was in the 70th percentile in July through September and was in the 90th percentile in October through December. July through September's variance was due to the timing of the CRF transfer. With the exception of August and December, distribution accuracy was in the 90th percentile. We received higher than expected Medical Pharmacy claims in August and December.



Contribution accuracy was in the 70th percentile in July through September and was in the 90th percentile in October through December. July through September's variance was due to the timing of the CRF transfer. With the exception of August and December, distribution accuracy was in the 90th percentile. We received higher than expected Medical Pharmacy claims in August and December.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee - Period Ending December 31, 2021

CalPERS

Long Term Care Fund (LTCF)

The LTCF provides financial protection to active participants from the high cost of covered services caused by chronic illness, injury or old age. Long-Term Care products reimburse the cost for covered personal care (activities of daily living) services. LTCF participation is voluntary and benefits are funded by member premiums and the LTCF investment income. The Fund maintains a reserve to mitigate potential funding risk during a stressed environment. Please note there is a one-month delay in reporting for the LTCF.

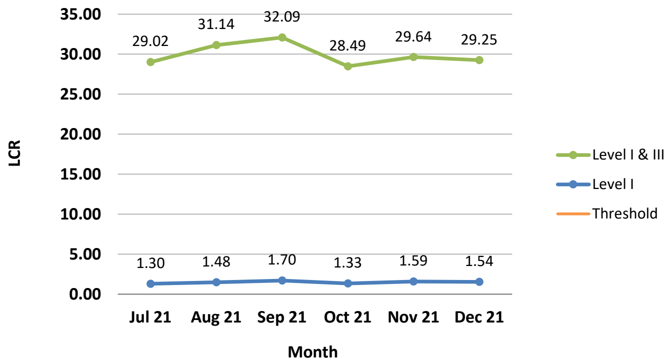
Liquidity Coverage Ratio Analysis

$$\text{Liquidity Coverage Ratios (LCR)} = \frac{\text{cash + assets convertible to cash + incoming cash sources}}{\text{outgoing cash uses + contingent cash uses}}$$

Funding Sources and Graph Details
Level I: Cash and cash equivalents
Level III: Sale of public assets
Threshold: Indicates the Fund's ability to cover 100% of monthly obligations

Normal Environment - 30-Day Liquidity Coverage Ratios

The 30-day LCR included investment and non-investment available cash flows.



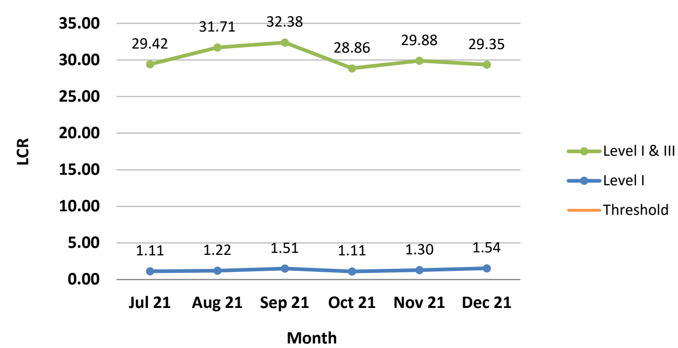
Level I: Level I LCRs remained above the threshold in July through December.

Level I & III: Since Level I LCRs remained above the threshold, it was not necessary to use Level III assets.

Stressed Environments - 30-Day Liquidity Coverage Ratios

Stressed environment LCR scenarios were calculated assuming starting assets were stressed by the percentages actually experienced over 5 days in the 1987 market crash and 30 days during September 2008. Starting assets were further reduced by a transactional liquidity % equal to the estimated % of the assets that could have been liquidated during the 30-day period. Under the stressed scenarios, asset class sources were reduced to zero.

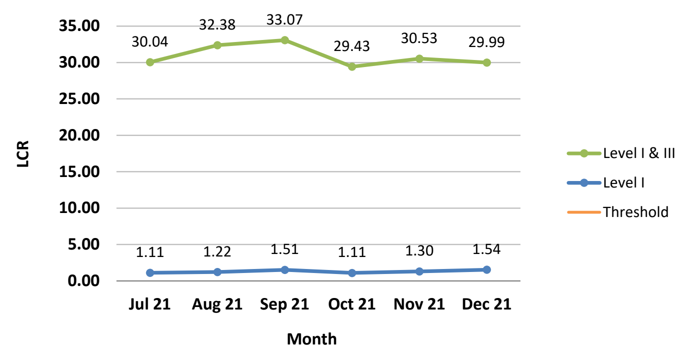
1987 Market Crash "Black Monday"



Level I: Level I assets would have been adequate had a stressed event similar to "Black Monday" occurred.

Level I & III: CalPERS would not have needed to use Level III assets.

2008 Liquidity Crisis



Level I: Level I assets are forecasted to be sufficient if a stressed event similar to the 2008 Liquidity Crisis were to occur.

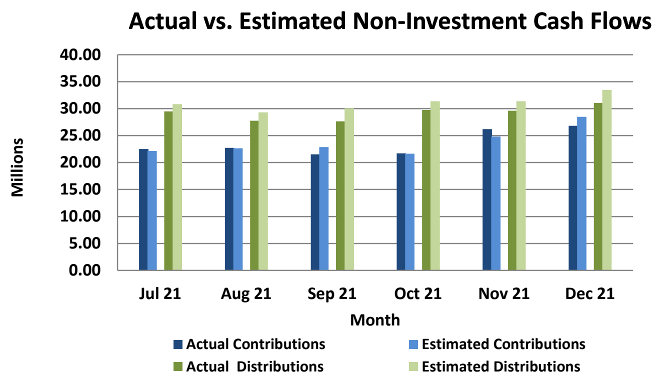
Level I & III: CalPERS would not have needed to use Level III assets.

Overall LTCF Liquidity Health

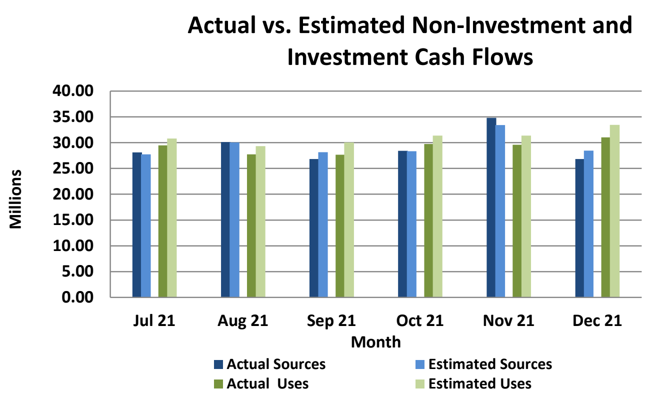
Based Coverage Ratio Analysis:

- ✓ LTCF was able to make payments for benefits and operating expenses regardless of market conditions.
- ✓ LTCF's liquidity remained above the threshold in the normal environment.

LTCF Cash Flow Forecasting



Cash flow forecasting accuracy was in the 90th percentile. November's and December's increase in contributions was due to a rate increase in premiums.



Cash flow forecasting accuracy was in the 90th percentile. November's and December's increase in contributions was due to a rate increase in premiums. December's increase in distributions was due to an increase in claims.