Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee   Period Ending December 31, 2020

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

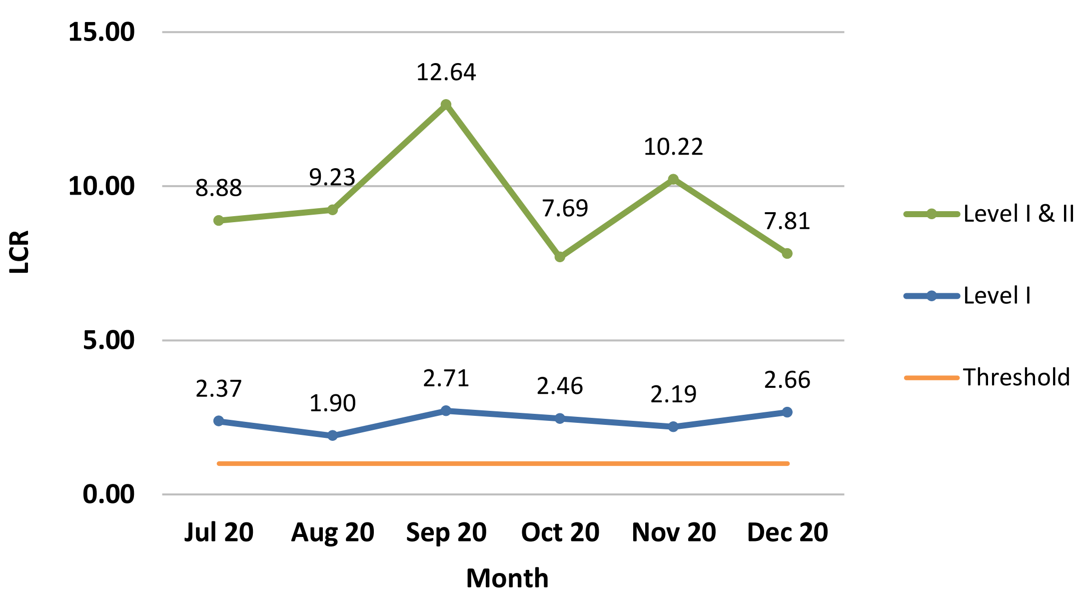
$$\text{Liquidity Coverage Ratios (LCR)} = \frac{\text{cash + assets convertible to cash + incoming cash sources}}{\text{outgoing cash uses + contingent cash uses}}$$

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.

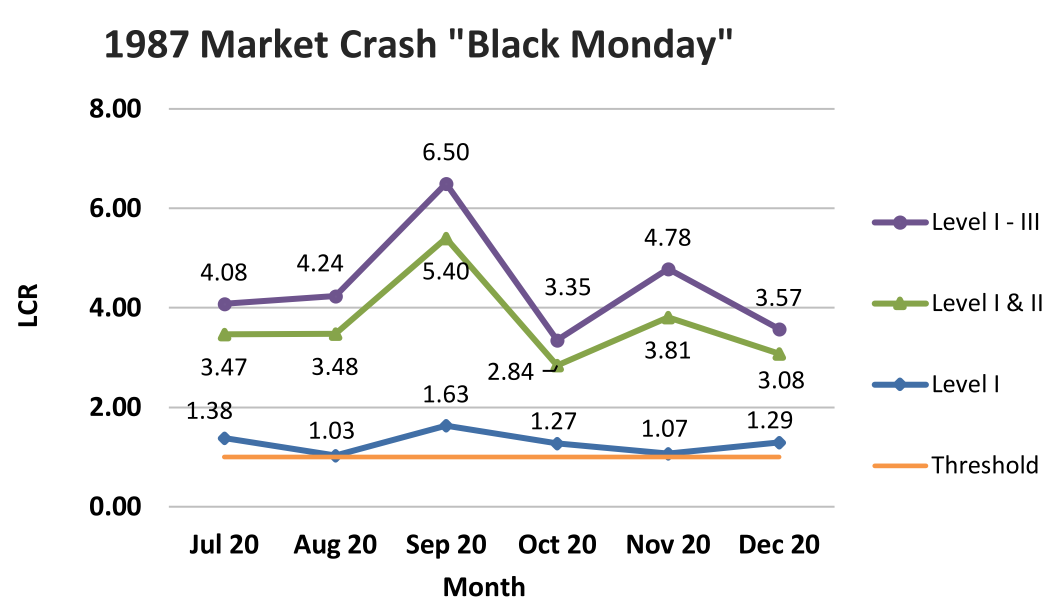


Level I: Level I LCRs remained above the threshold from July through December.

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

Stressed Environments - 30-Day Liquidity Coverage Ratios

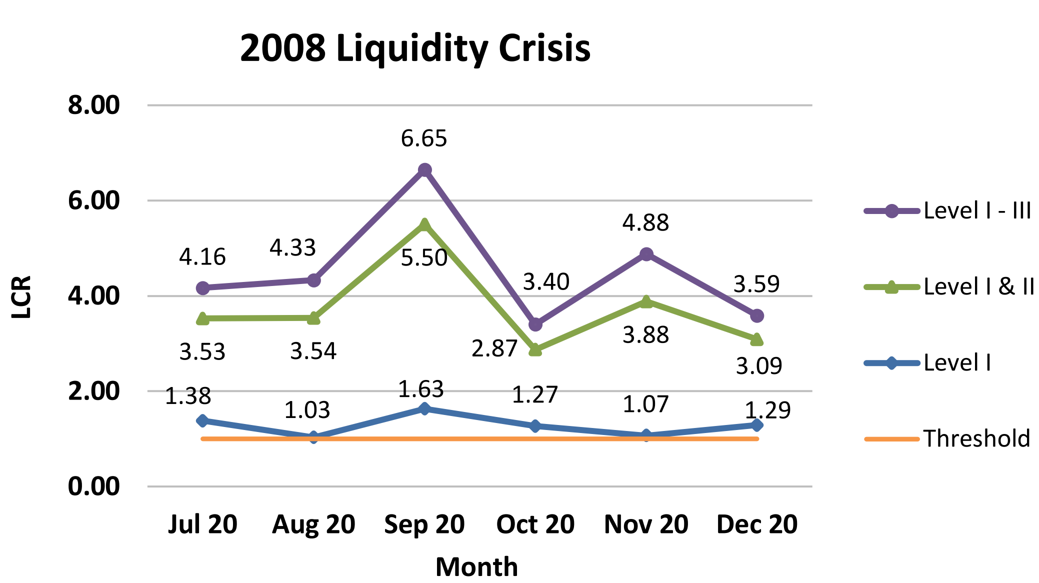
Stressed environment LCR scenarios were calculated assuming starting assets were stressed by the percentages actually experienced over 5 days in the 1987 market crash and 30 days during September 2008. Starting assets were further reduced by a transactional liquidity % equal to the estimated % of the 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.



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.



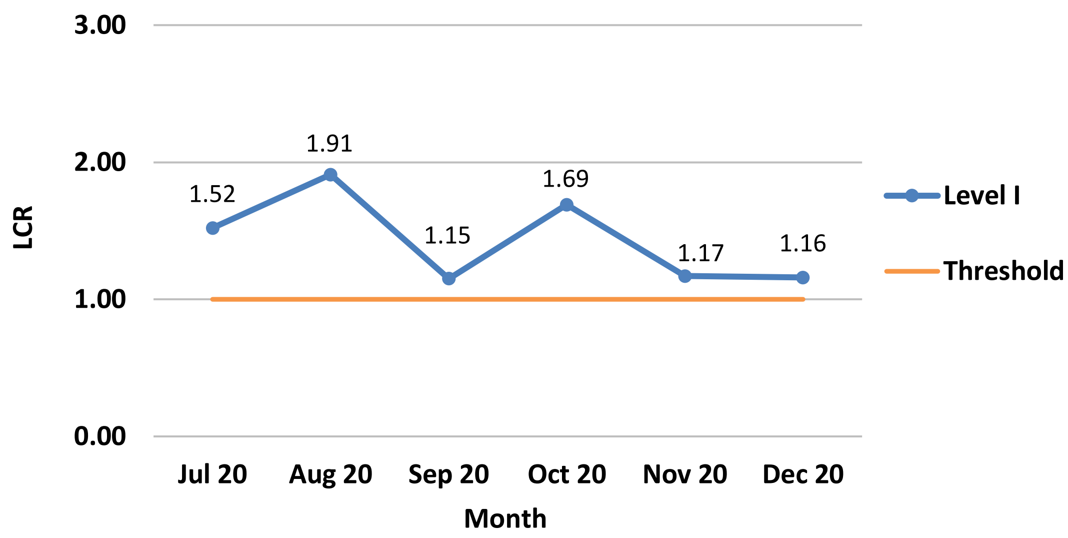
Level I: Level I assets would have been adequate had a stressed event similar to the 2008 Liquidity Crisis occurred.

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

Level I – III: CalPERS will 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.



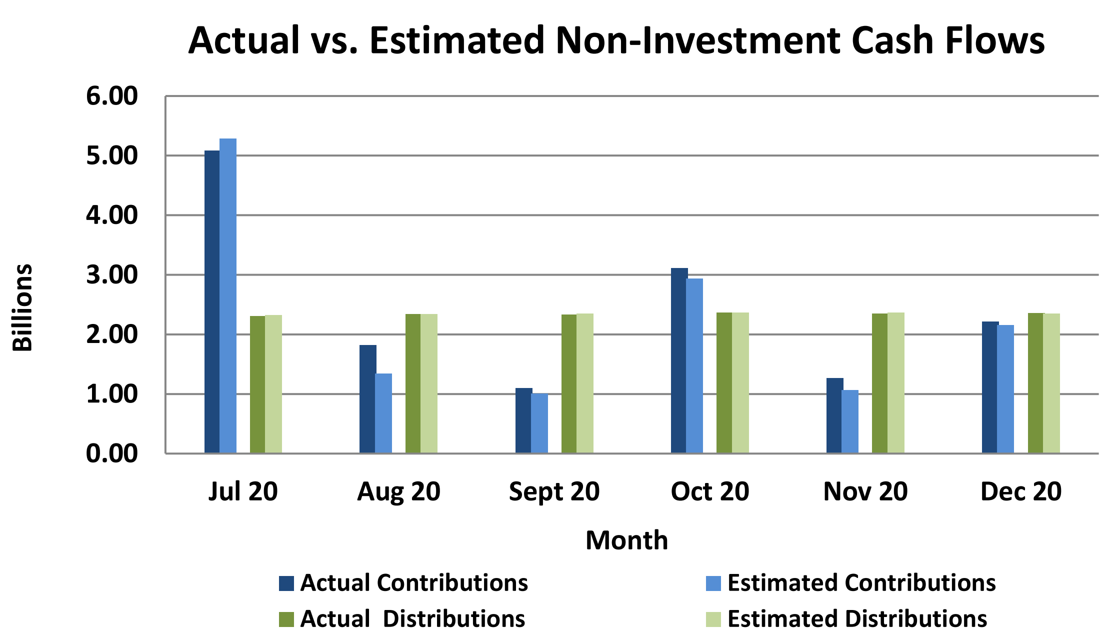
Level I: The PERF had sufficient cash to cover obligations ten days prior to the funding of member benefits from July through December. This indicated Level I was adequate had a crisis event occurred. In a crisis environment, CalPERS would not have access to Level II and Level III assets because it is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

Overall PERF Liquidity Health

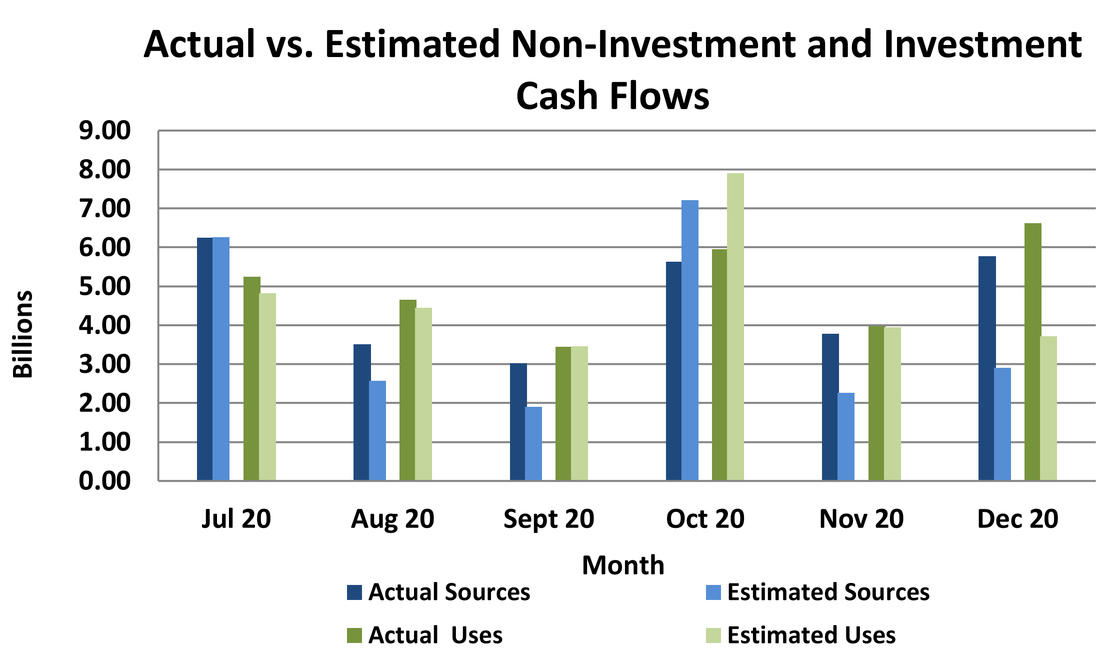
Coverage Ratio Analysis:

- ✓ 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 accuracy was in the 90th percentile. The increase in July's and October's contributions were due to quarterly State employer and Unfunded Accrued Liability contributions.



Cash flow forecasting for total fund cash activities (both non-investment and investment) can be volatile. Components that drove forecast volatility included, but were not limited to: private equity activity, real estate and investment expenses. The increase in July's and October's contributions were due to quarterly State employer and Unfunded Accrued Liability contributions.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee   Period Ending December 31, 2020

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

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

Funding Sources and Graph Details

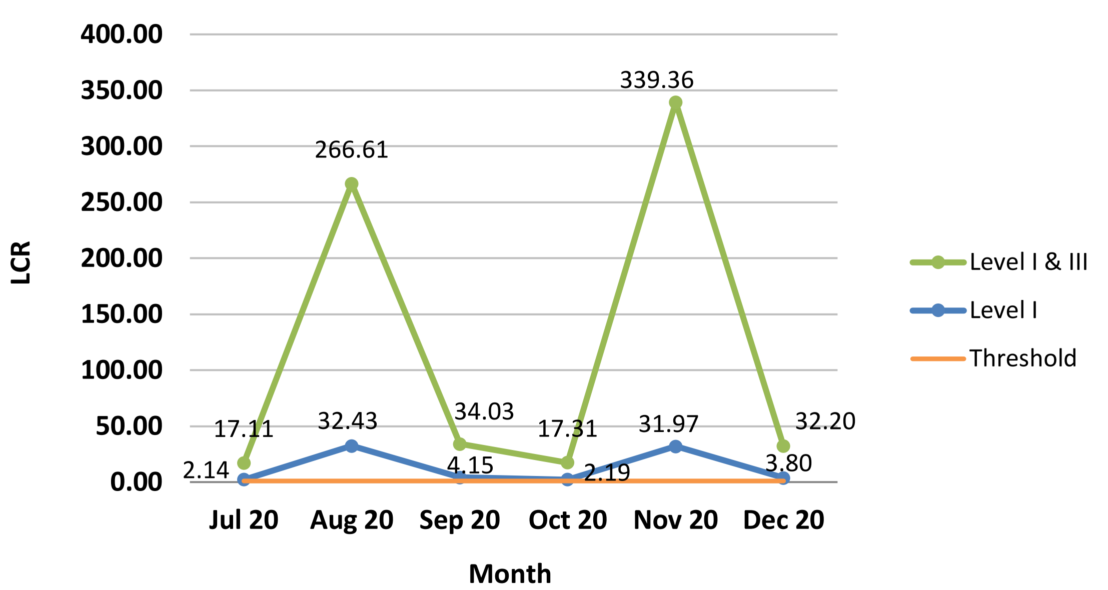
Level I: Cash and cash equivalents + Reserves

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.

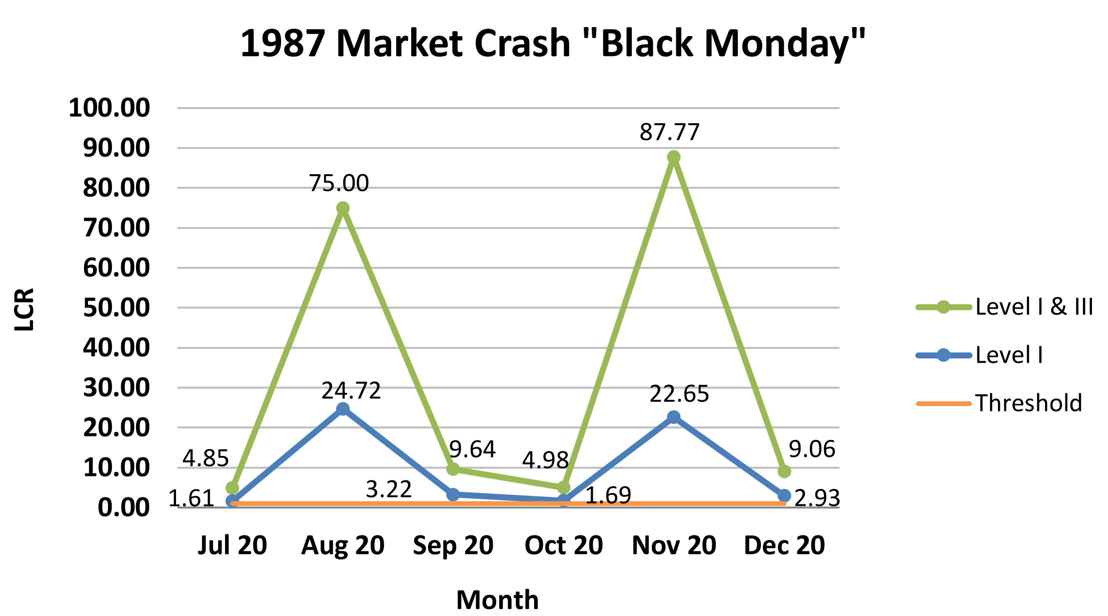


Level I: Level I LCRs remained above the threshold in July through December. August's and November's LCRs were higher due to the timing of benefit payments.

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

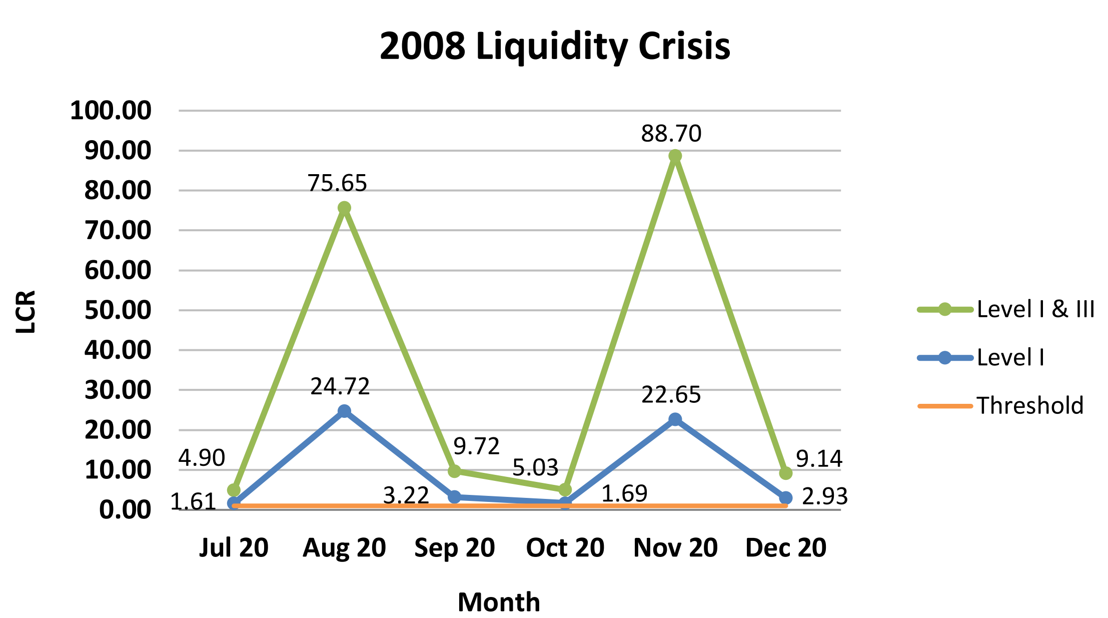
Stressed Environments - 30-Day Liquidity Coverage Ratios

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.



Level I: Level I assets would have been adequate had a stressed event similar to "Black Monday" occurred. August's and November's LCRs were higher due to the timing of benefit payments. This is a closed fund and relies on the planned sale of assets to pay member benefits.

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

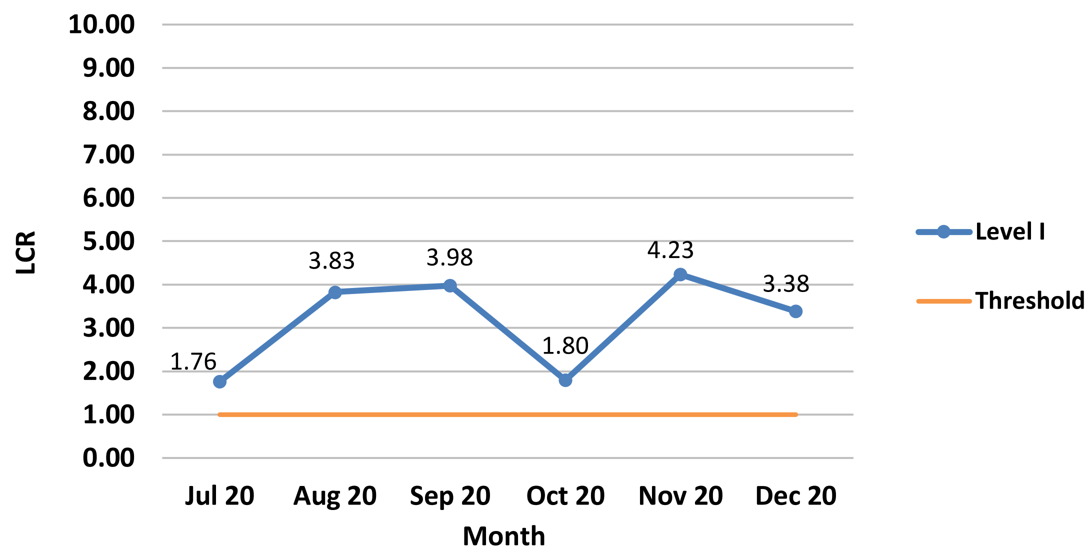


Level I: Level I assets would have been adequate had a stressed event similar to the 2008 Liquidity Crisis occurred. August's and November's LCRs were higher due to the timing of benefit payments. This is a closed fund and relies on the planned sale of assets to pay member benefits.

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

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.



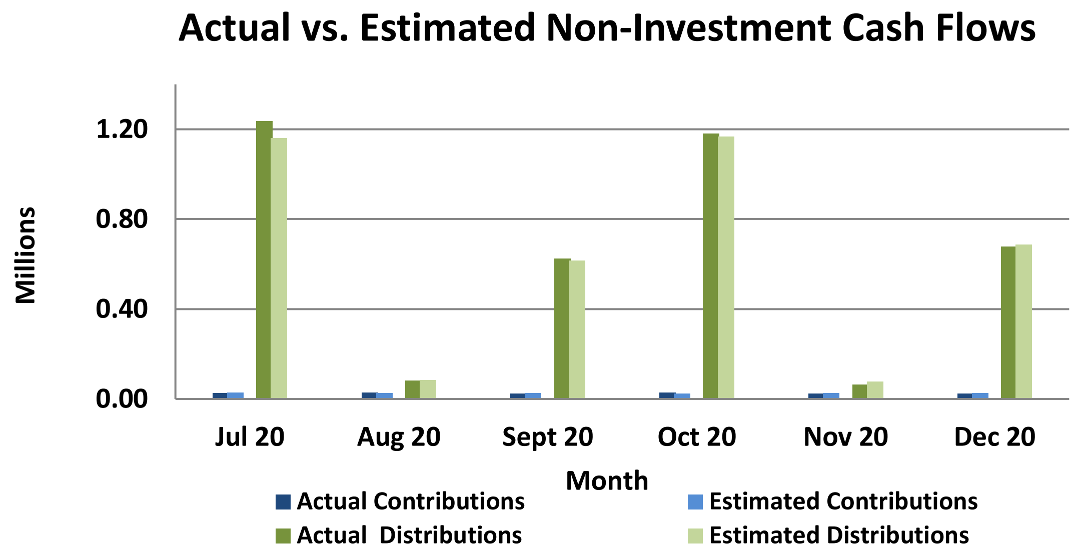
Level I: The LRF had sufficient cash to cover obligations ten days prior to the payment date. This indicated Level I would have been adequate had a crisis event occurred. In a crisis environment, CalPERS would not have access to Level III assets since it is assumed there was a five business day market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

Overall LRF Liquidity Health

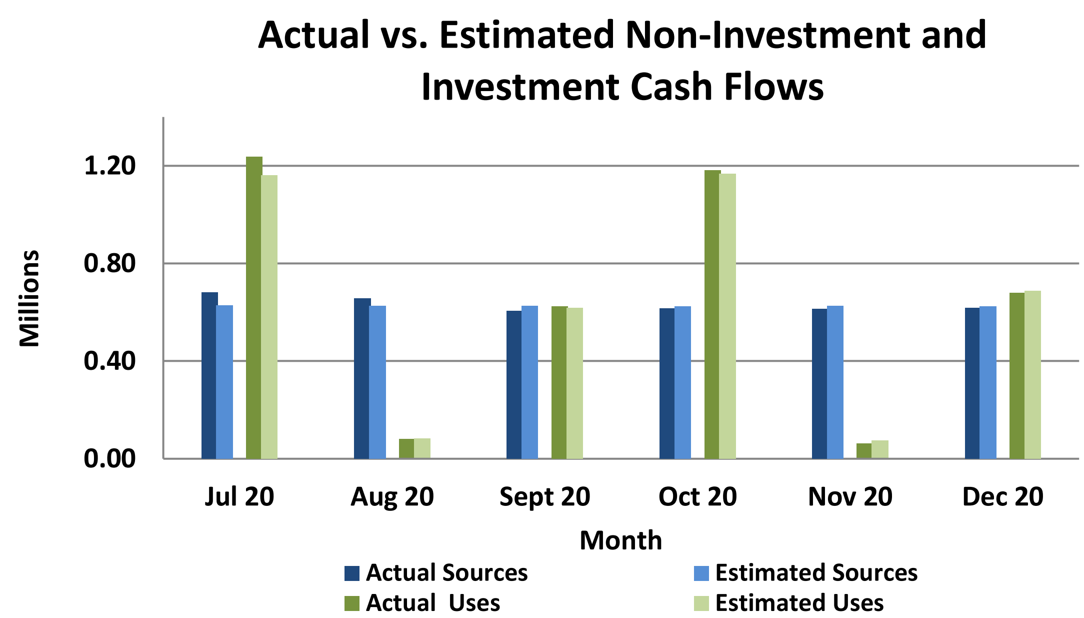
Coverage Ratio Analysis:

- ✓ 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. Fluctuations in distributions were due to the timing of benefit payments.



Cash flow forecasting was in the 90th percentile. Fluctuations in distributions were due to the timing of benefit payments.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee Period Ending December 31, 2020

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

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

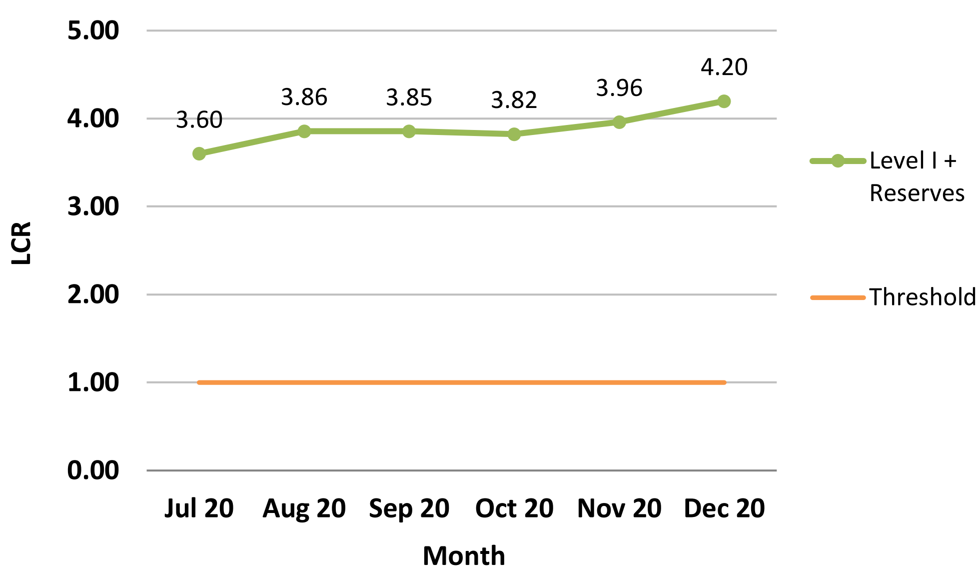
Funding Sources and Graph Details

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

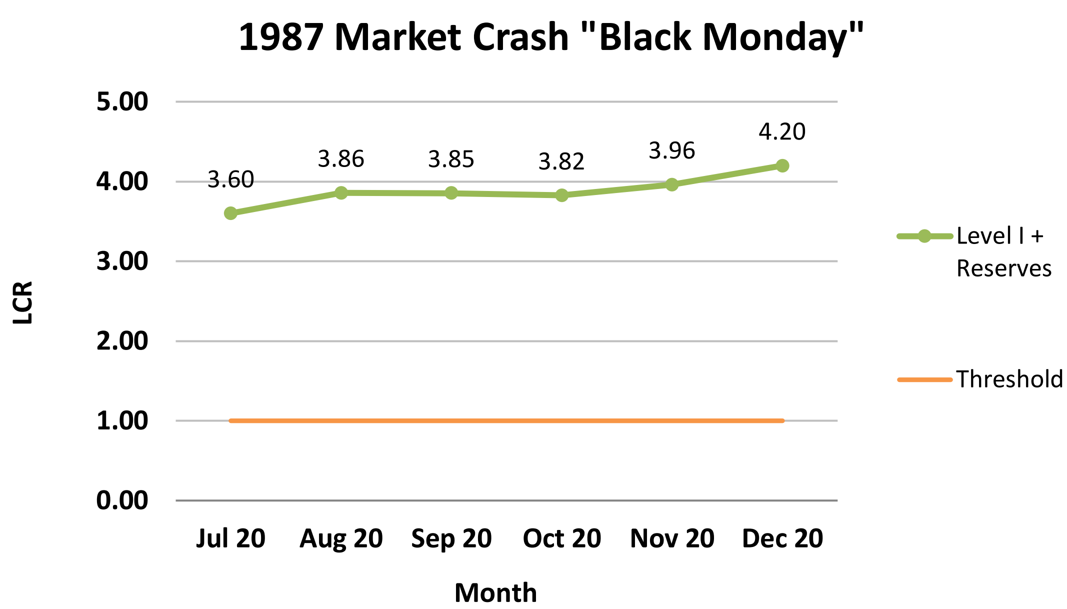
The 30-day LCR included investment and non-investment available cash flows.



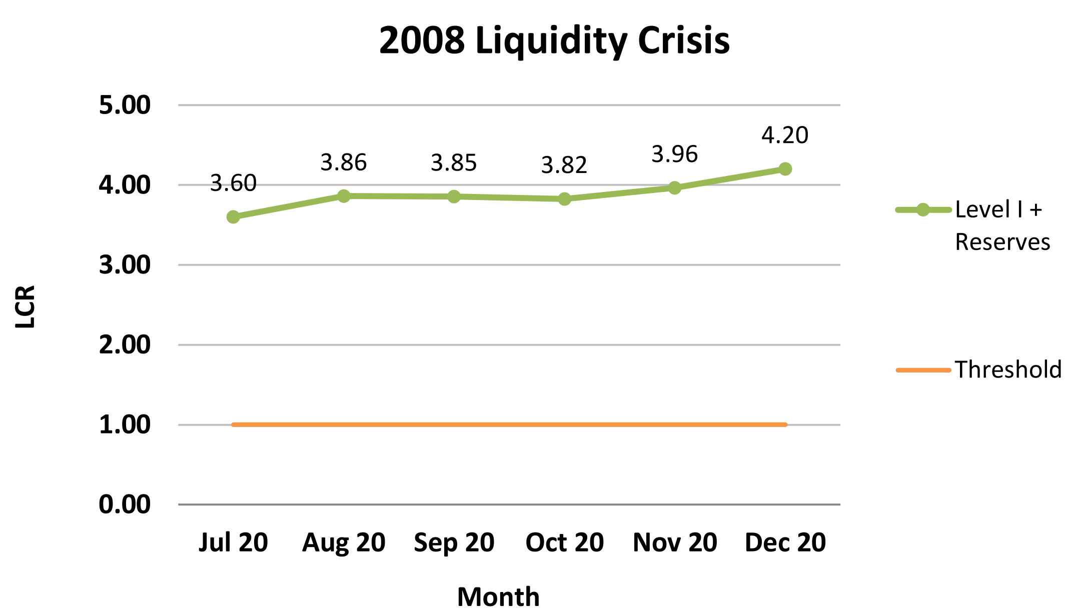
Level I & Reserves: Level I + Reserves LCRs remained above the threshold in July through December.

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 + Reserves would have been adequate had a stressed event similar to "Black Monday" occurred.



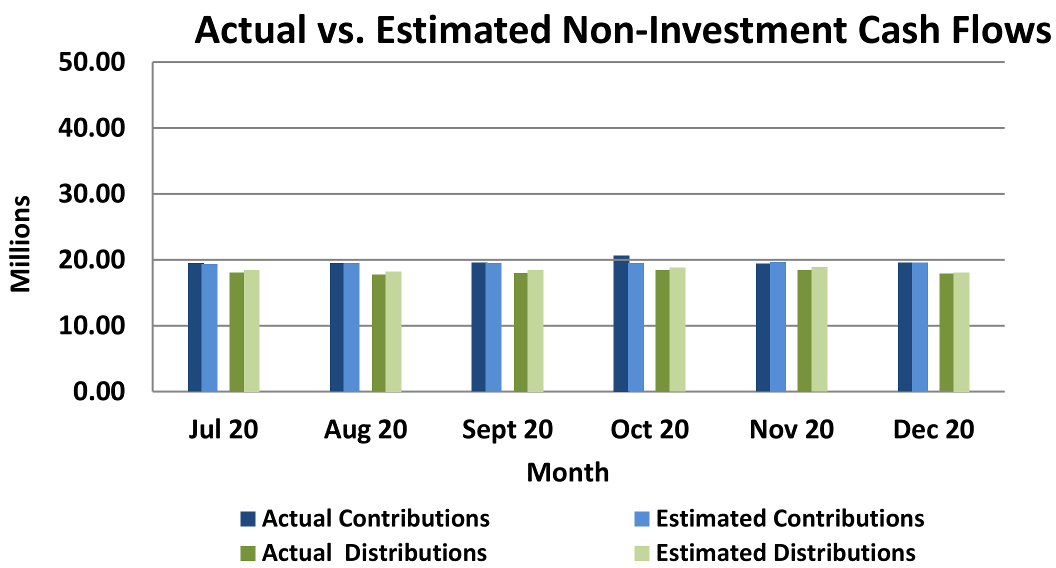
Level I & Reserves: Level I + Reserves would have been adequate had a stressed event similar to the 2008 Liquidity Crisis occurred.

Overall JRF I Liquidity Health

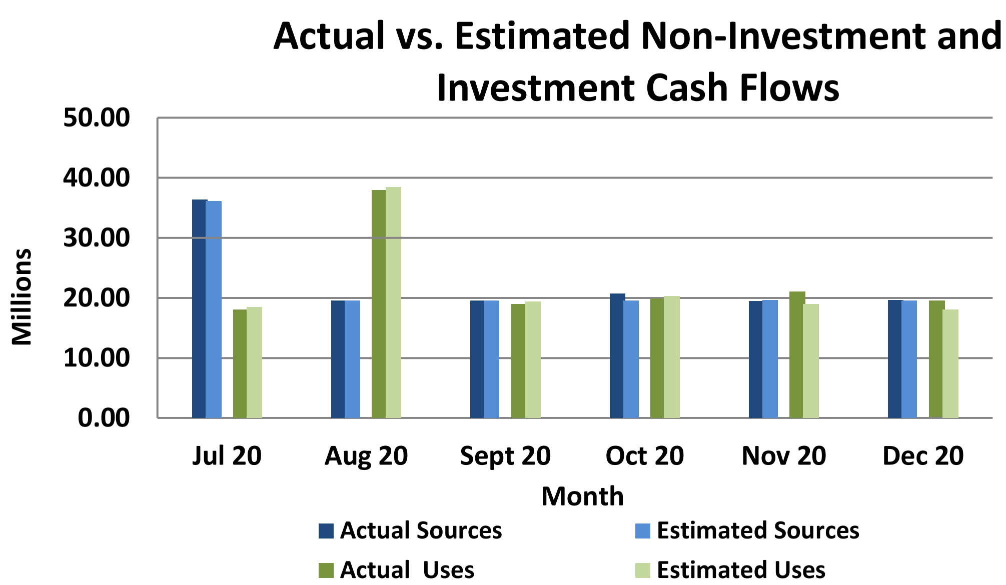
Based Coverage Ratio Analysis:

- ✓ 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. The increase in July's sources and the subsequent increase in August's uses is due to the timing of cash flows.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee   Period Ending December 31, 2020

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 are incentives for judges to stay in their current position and are lump-sum payments.

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

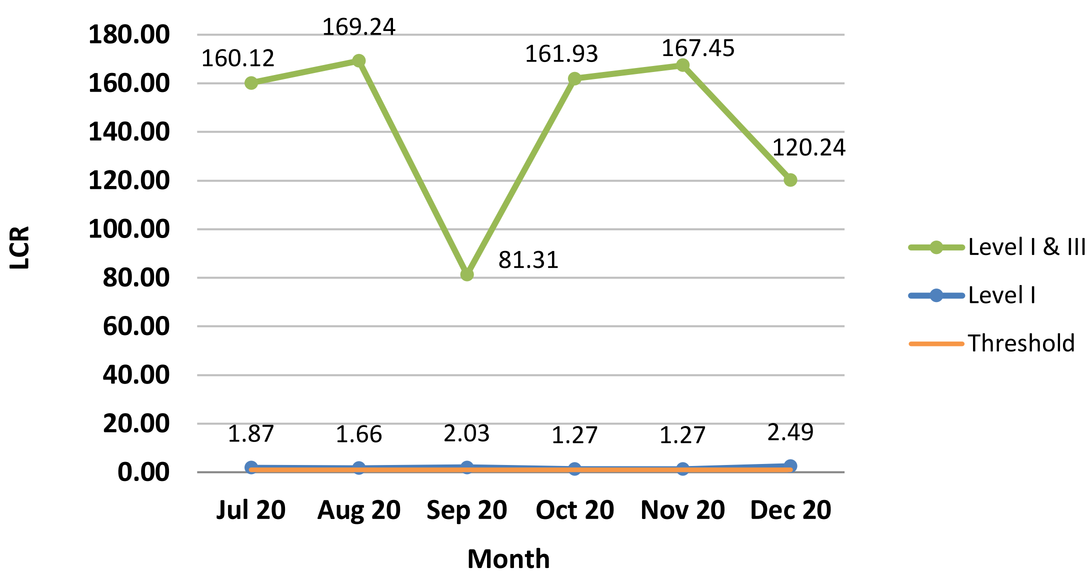
Level I: Cash and cash equivalents

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.



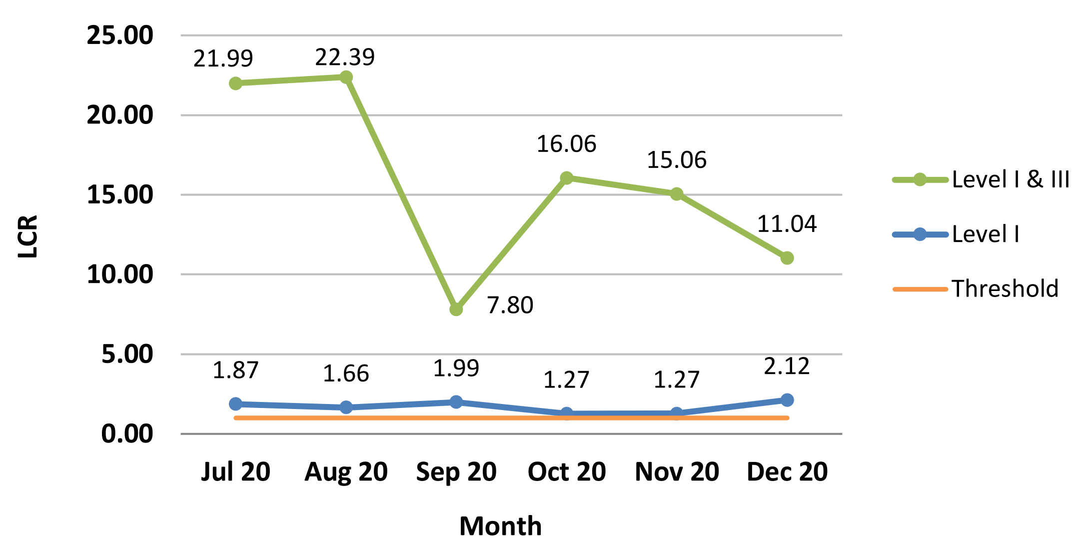
Level I: Level I LCRs remained above the threshold in July through December.

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.

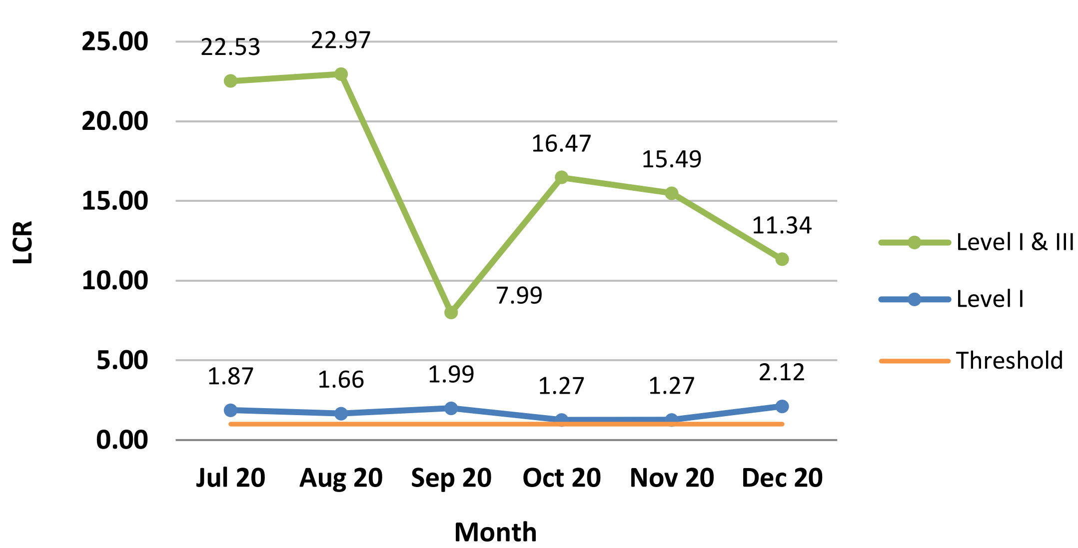
1987 Market Crash "Black Monday"



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

Level I & III: Level I and Level III assets would have been adequate had a stressed event similar to "Black Monday" occurred. Fluctuations in Level III assets were typically due to monetary credit payments which can double the outflows for the month.

2008 Liquidity Crisis

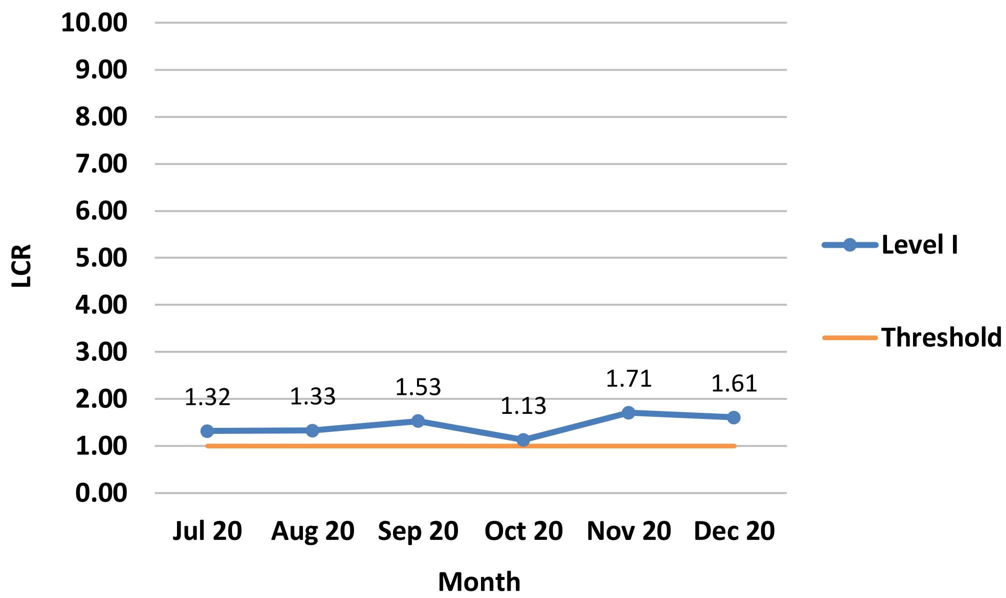


Level I: Level I assets would have been adequate had a stressed event similar to the 2008 Liquidity Crisis occurred.

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

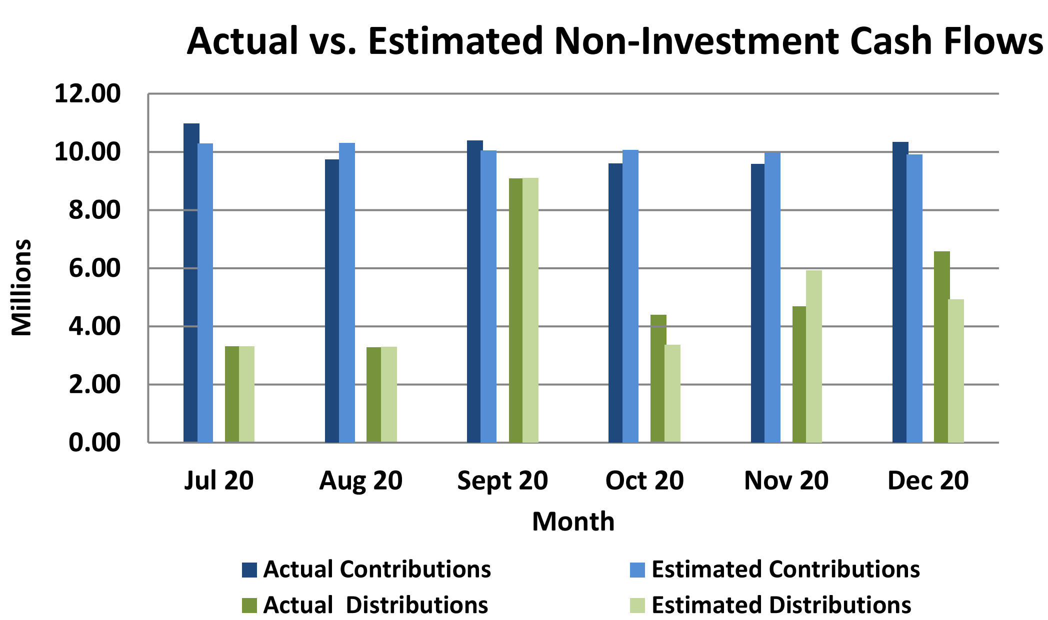
Overall JRF II Liquidity Health

Coverage Ratio Analysis:

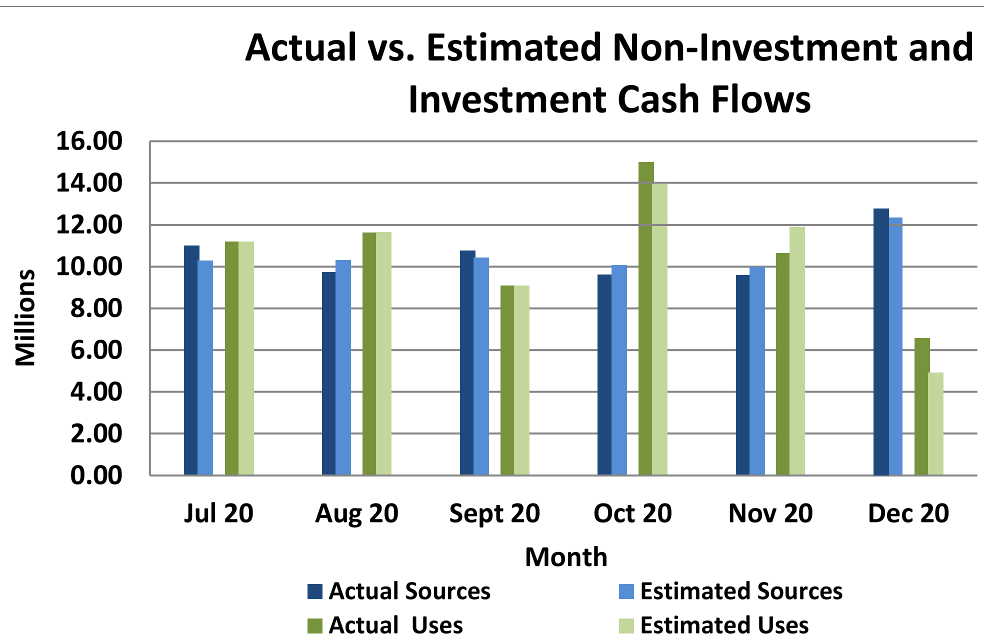
✓ JRF II was able to make payments for benefits and operating expenses regardless of market conditions.

✓ 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



Cash flow forecasting accuracy for contributions was in the 90th percentile. Cash flow forecasting accuracy for distributions was in the 80th percentile due to the timing of monetary credit payments.



Cash flow forecasting accuracy for contributions was in the 90th percentile. Cash flow forecasting accuracy for distributions was in the 80th percentile due to the timing of monetary credit payments.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee Period Ending December 31, 2020

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.

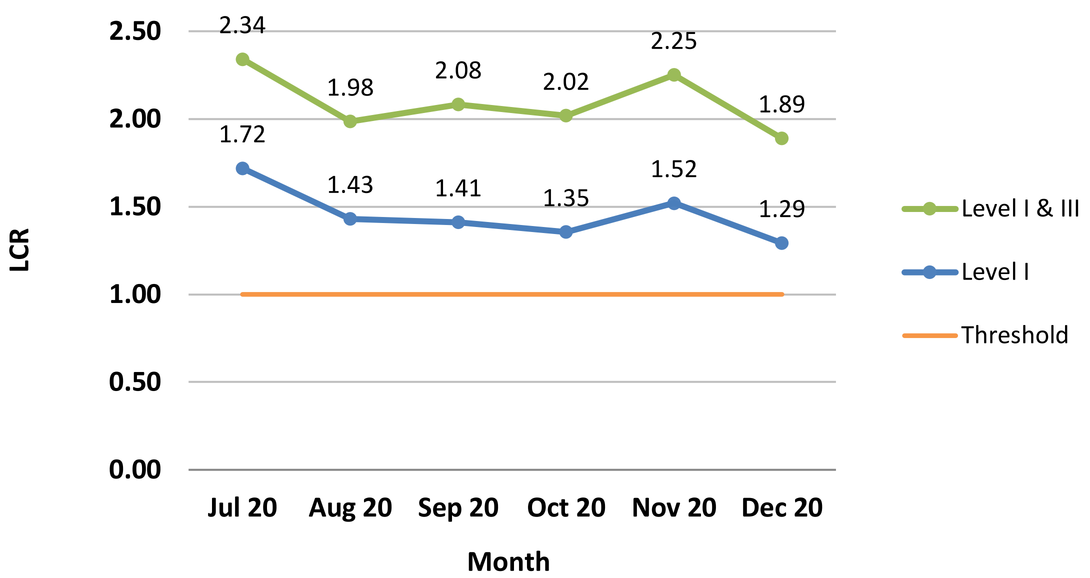
Liquidity Coverage Ratio Analysis

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

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.



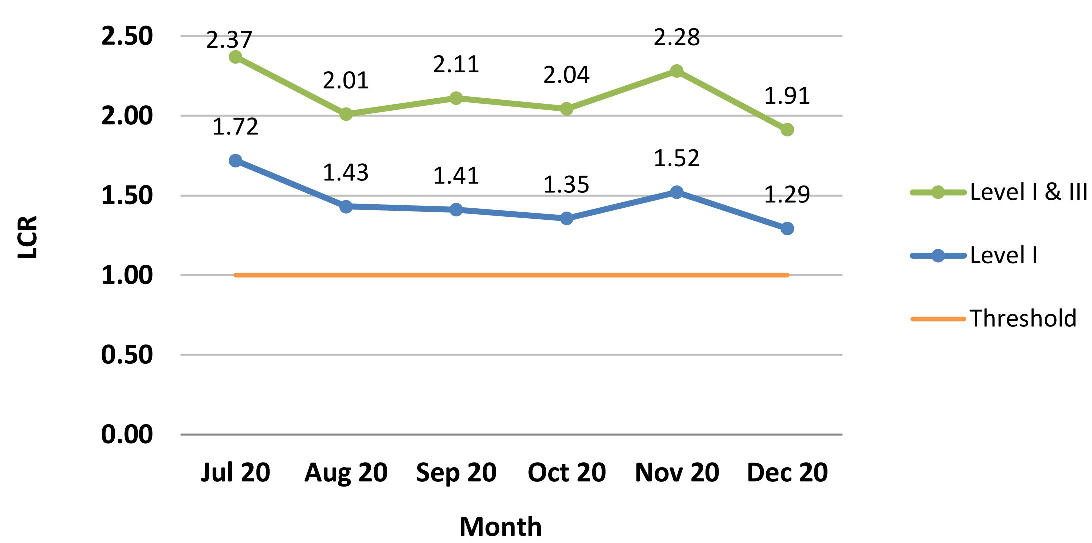
Level I: Level I LCRs remained above the threshold in July through December.

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

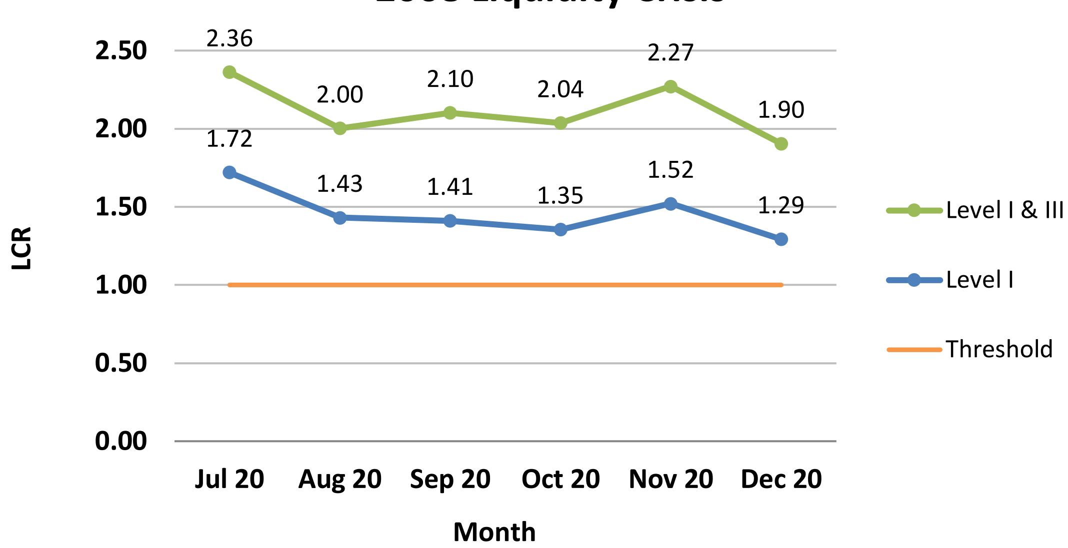
1987 Market Crash "Black Monday"



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

Level I & III: Level I and Level III assets would have been adequate had a stressed event similar to "Black Monday" occurred. Since 100% of Level III assets for HCF are held in cash, cash equivalents, and fixed income, stress factors will have 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.

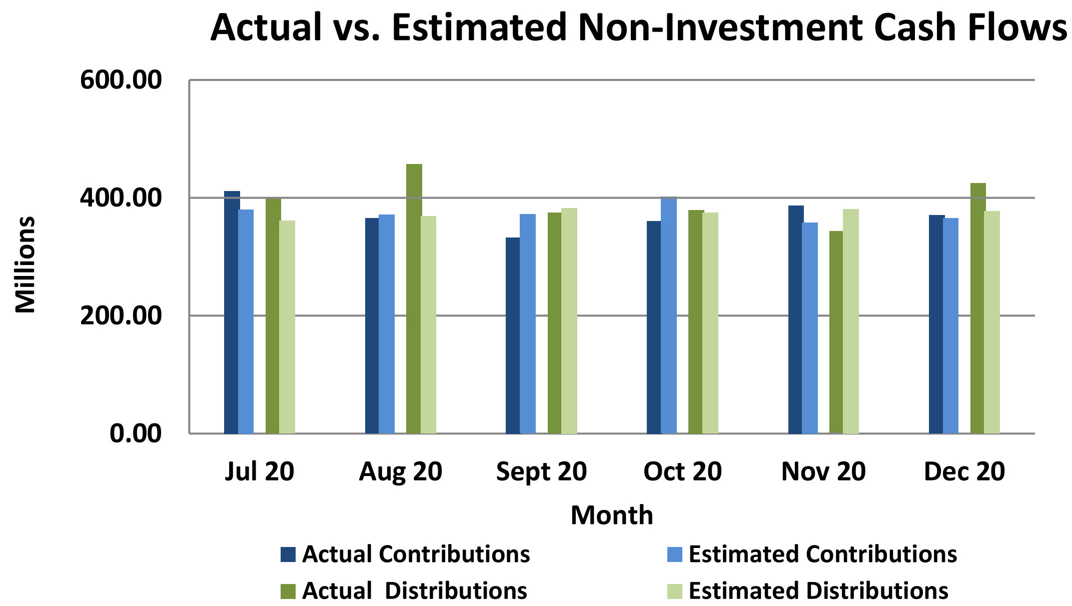
Level I & III: Level I and III assets were adequate had a stressed event similar to the 2008 Liquidity Crisis occurred. Since 100% of Level III assets for HCF are held in cash, cash equivalents, and fixed income, stress factors will have a minimal impact to the LCRs.

Overall HCF Liquidity Health

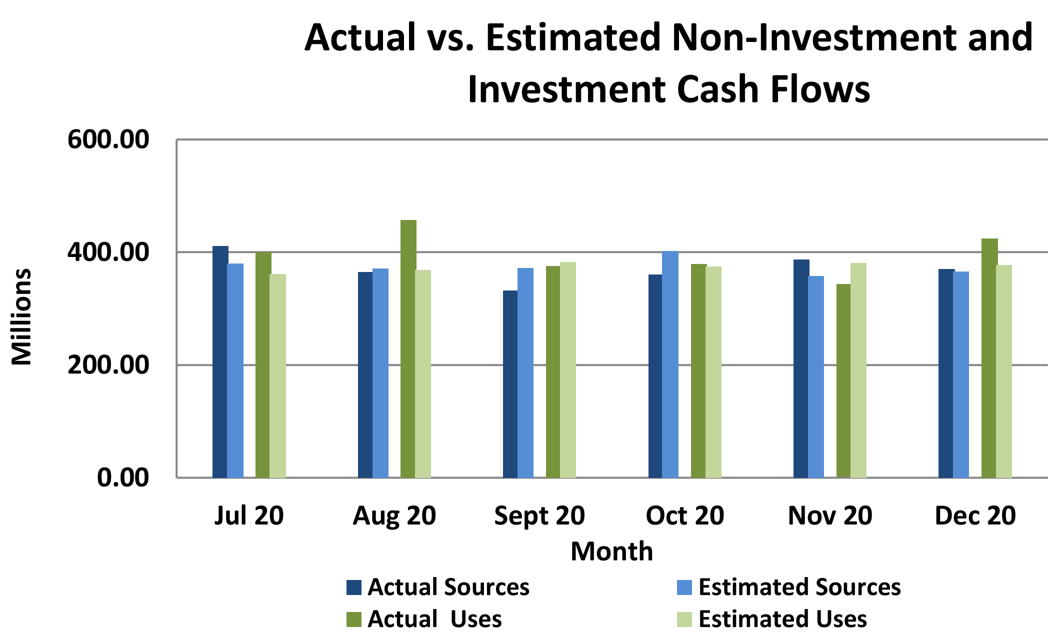
Coverage Ratio Analysis:

- ✓ 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



July's through December's cash flow forecasting accuracy was in the 90th percentile for contributions. Forecasting accuracy for distributions was in the 90th percentile except for August and December, which was in the 80th percentile. This was due to higher medical pharmacy claims and administrative fees.



July's through December's cash flow forecasting accuracy was in the 90th percentile for contributions. Forecasting accuracy for distributions was in the 90th percentile except for August and December, which was in the 80th percentile. This was due to higher medical pharmacy claims and administrative fees.

Treasury Analysis and Liquidity Status Report

Prepared for: Finance and Administration Committee Period Ending December 31, 2020

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

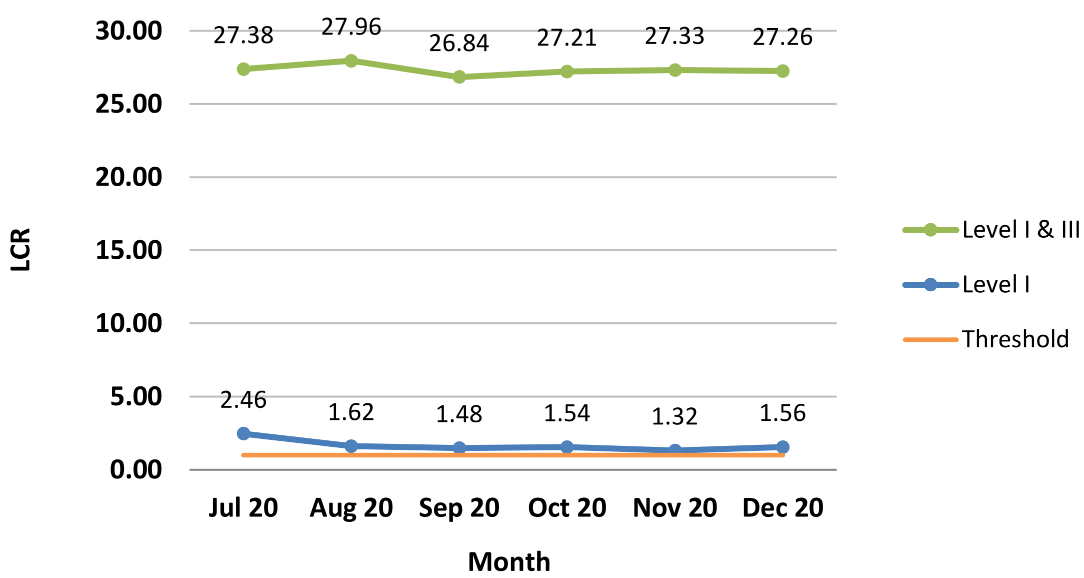
Level I: Cash and cash equivalents

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.

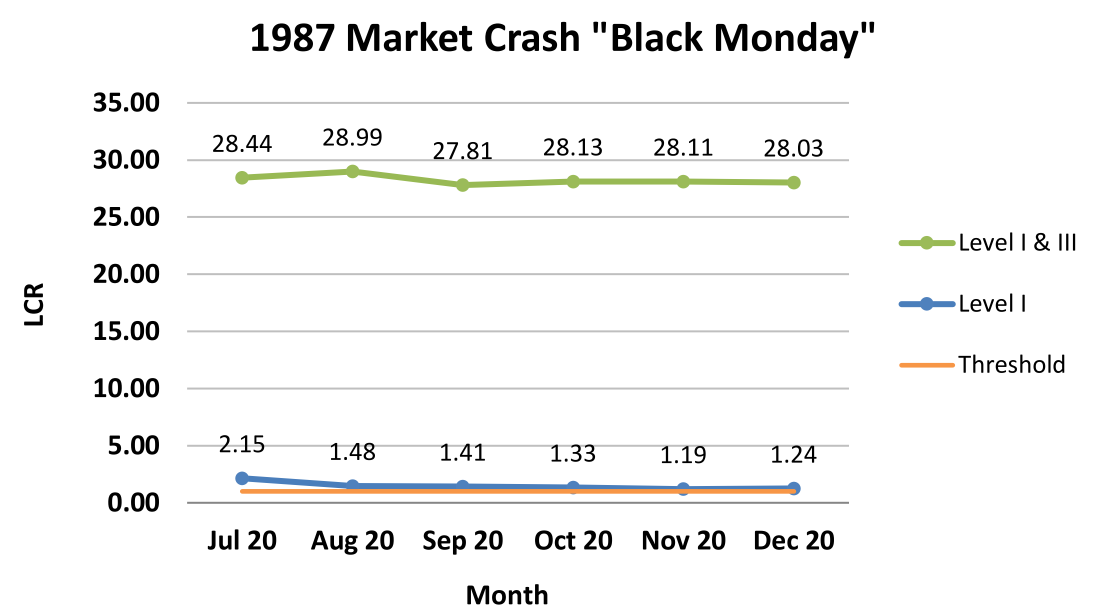


Level I: Level I LCRs remained above the threshold in July through December.

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

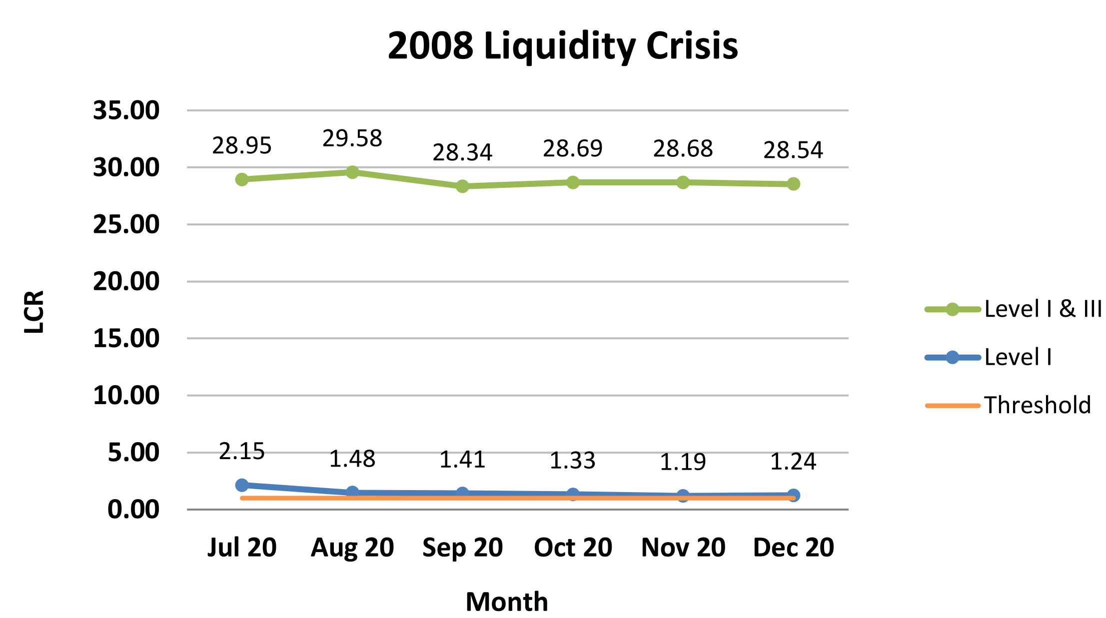
Stressed Environments - 30-Day Liquidity Coverage Ratios

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.



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

Level I & III: Level I and Level III assets were adequate had a stressed event similar to "Black Monday" occurred.



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

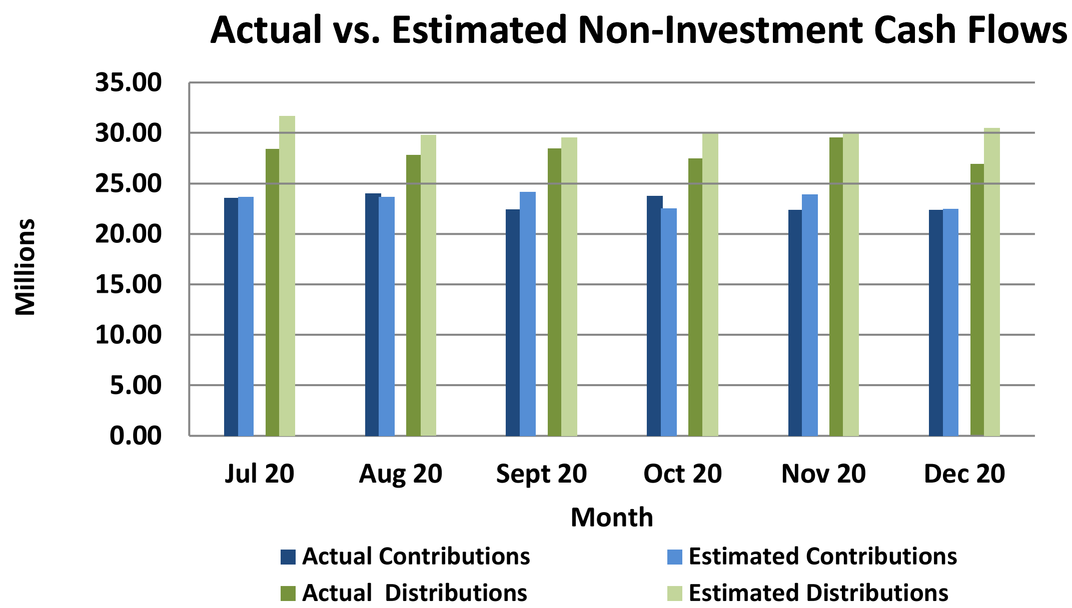
Level I & III: Level I and Level III assets were adequate had a stressed event similar to the 2008 Liquidity Crisis occurred.

Overall LTCF Liquidity Health

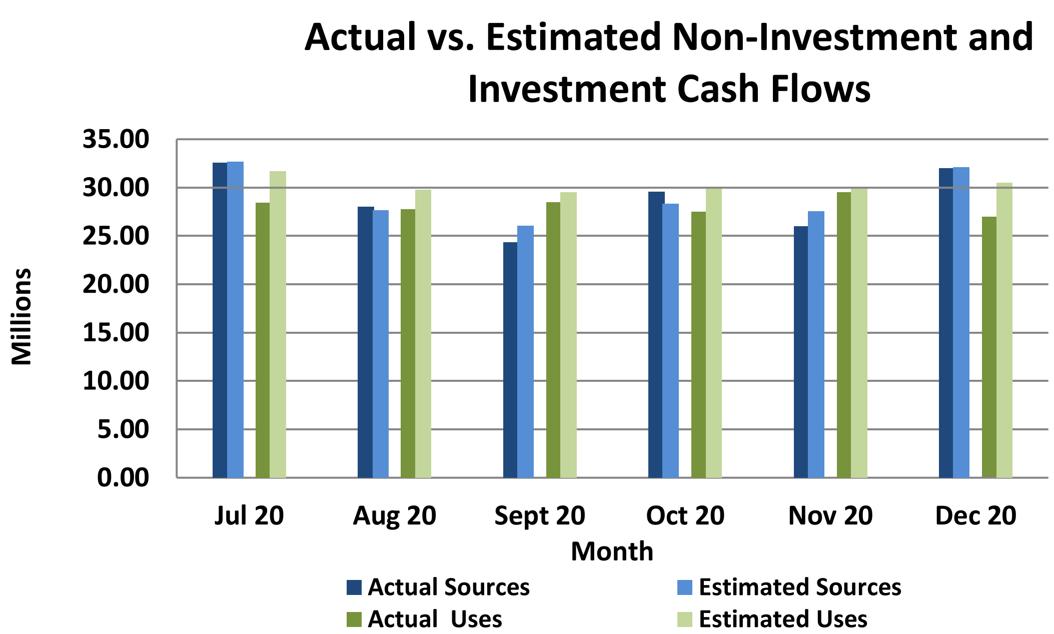
Based Coverage Ratio Analysis:

- ✓ 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.



Cash flow forecasting accuracy was in the 90th percentile.