ARTICLE
MAY 2021

Authors
Laurent Birade
Senior Director, Risk and Accounting Solutions

James Partridge
Director, Risk and Accounting Solutions

Anna Rapoport
Assistant Director, Risk and Finance Analytics

Chris Stanley
Senior Director, Risk and Accounting Solutions

Acknowledgements
The authors want to thank Phillip Lai, David Salz, Andrea Usain, Sohini Chowdhuri, and James Hurd for their contributions.

Contact Us

Americas
+1.212.553.1658
clientservices@moodys.com

Europe
+44.20.7772.5454
clientservices.emea@moodys.com

Asia (Excluding Japan)
+85 2 2916 1121
clientservices.asia@moodys.com

Japan
+81 3 5408 4100
clientservices.japan@moodys.com

Playing the Waiting Game with CECL Reserves and Loss Emergence

As the second year of the Current Expected Credit Loss (CECL) standard begins for over 200 US banks, what happens next is uncertain. Timely, forecast-driven reserve build at the onset of the global pandemic prepared issuers for an elevated level of losses that has yet to materialize. With an improving macroeconomic outlook and stable credit metrics, pressure to release reserves will increase—positioning loss emergence as a central question for 2021 earnings.

CECL challenged banks to repurpose macroeconomic and credit data to forecast a life-of-loan loss estimate. This significantly enhanced banks' analytical toolkit for managing credit risk during future downturns. However, no model is omnicompetent. Models are necessarily developed with historical data and interpret the world as it was—helpful for understanding complex relationships—but are insufficient on their own for describing the world as it will be, particularly when that world deviates substantially from history.

The COVID-19 pandemic continues to reveal the innumerable ways in which the world is difficult to predict. Banks have used CECL models and detailed portfolio reviews to establish reserves that appear reasonable, but the observed loss experience has not kept pace. Fiscal and monetary policy interventions to mitigate the economic impact of the pandemic have shaken the historical patterns that trained CECL models. To make sense of a complex and uncertain world, banks' reserve narratives must incorporate this new information.

Over the past few months, a team of researchers at Moody's Analytics tackled the mystery of loss timing during this atypical recession. Using the Global Financial Crisis as a guide, we used a variety of robust datasets to develop a framework for refining loss emergence estimates. This paper offers statistical analysis on loss emergence by asset category types and a detailed review of the consumer asset class. Whether you want to hold on to reserves in anticipation of losses or are looking to release reserves, we provide several benchmarks to help your analysis. We hope this framework will inform judgments about reserve levels at future reporting dates and enrich consideration of portfolio idiosyncrasies and CECL model results.

Our study began with analyzing the severity of stress and timing of peak stress during the 2007 recession for the current top 100 US banks. We considered five asset classes: Mortgage, Cards, Commercial & Industrial, Commercial Real Estate, and Commercial Real Estate – Construction, following the definitions in the FDIC Call Reports. We define the severity of stress as current quarterly charge-offs relative to average quarterly charge-offs for each bank, taken as a measure of through-the-cycle losses. Using this same definition of stress, peak stress is the maximum severity of stress in the three years following the start of the Global Financial Crisis (the fourth quarter of 2007) and time to peak is the number of quarters that elapsed before reaching this peak. The distribution of these results is summarized in Figures 1 and 2.

There are substantial differences in the severity of the loss experience of each asset class. Cards experienced the lowest peak stress considering both the mean and median, while CRE and CRE Construction, showed the highest. Perhaps surprisingly, Mortgage stress falls somewhere in the middle despite being the catalyst for the recession, as shown in Figure 1.

Figure 1 Summary Statistics for Peak Stress[1] During the 2007 Recession

	Mortgage	Cards	C&I	CRE	CRE Construction
Mean	10.9	4.7	6.7	16.9	17.3
Min	0.4	0.0	0.0	0.0	-61.7
1st Quartile	4.4	1.7	3.1	4.9	10.2
Median	6.9	2.3	5.1	9.7	14.5
3rd Quartile	12.1	3.4	8.3	16.5	22.3
Max	69.6	44.5	42.9	676.1	66.7

Figure 2 gives summary statistics for the time to peak. There is less variation in this measure, as peak stress occurs roughly two years after the start of the recession for each asset class. Peak stress in C&I occurs slightly earlier than other categories, as indicated by the lower mean and median. Note that this variable is bounded by zero and 12 by definition (that is, 12 quarters from the recession start was the limit in our search for each bank's peak net charge-off rate associated with the Global Financial Crisis).

Figure 2 Summary Statistics for the Time to Peak During the 2007 Recession

	Mortgage	Cards	C&I	CRE	CRE Construction
Mean	7.4	7.5	6.8	8.1	7.7
Min	0.0	1.0	0.0	0.0	0.0
1st Quartile	6.0	6.0	4.0	6.0	6.0
Median	8.0	8.0	7.0	8.0	8.0
3rd Quartile	10.0	9.0	9.0	11.0	11.0
Max	12.0	12.0	12.0	12.0	12.0

Of course, the preceding metrics are only part of the story for loss emergence and provide a single point of view anchored in the most recent recession on record. This point of view should be supplemented by an analysis that highlights the differences between where we are today and where we were in the 2007-2010 period, by looking into nontraditional elements of the credit cycle. The first 12-15 months of the pandemic recession were different from past economic downturns. Understanding these differences and monitoring their prospective behavior relative to historical experience is critical for managing reserves as economic conditions and credit quality stabilize.

Consumer behavior

Consumer behavior is a key driver of the economy and was the focus of much of the fiscal response to the pandemic. Interpreting current conditions through a consumer lens applies to retail portfolios, but also provides insights for analysis of commercial portfolios. Reflecting well-established relationships[2] between macroeconomic variables and net charge-off experiences, many credit models (consumer and commercial) use unemployment levels as a benchmark for default expectations. For consumer portfolios, unemployment increases directly affect borrowers' ability to repay. For commercial portfolios, increases in unemployment coincide with declines in demand for the goods and services sold by businesses (indirectly affecting borrowers' ability to repay). For reasons we will explore further, predicting the severity and timing of peak credit losses from the pandemic requires nuance that is not obvious in commonly evaluated unemployment data. From this perspective, we consider loss emergence by evaluating the options available to borrowers who are unemployed but want to avoid default:

1. Seek alternative employment or other income

2. Curtail monthly expenses

---

[1] Peak stress is defined at the multiplier of the average through the cycle loss for an asset class; for example, the mean peak loss for Mortgage is 10.9 times the through-the-cycle average loss on mortgage portfolios for the top 100 banks.

[2] Unemployment increases during periods of economic decline and increases in unemployment are closely followed by increases in default.

3. Unlock equity, liquidate assets, or seek alternative financing

4. Reduce debt or defer payments

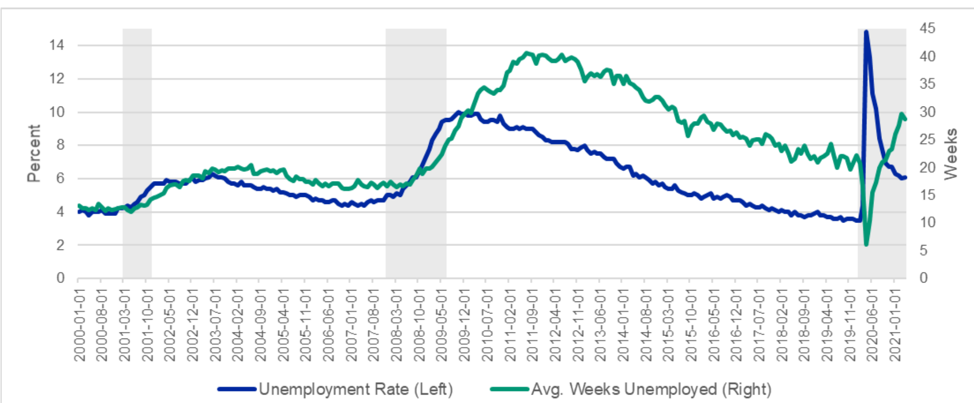
Differences between current conditions and the Global Financial Crisis affect the prioritization of these strategies (detailed in the following sections), and ultimately, the borrower's ability to avoid default. These measures help reserve judgments and help credit risk managers combine macroeconomic, monetary, and fiscal considerations into meaningful insights for their own portfolios. Historical data for the indicators included in our analysis are available from the Bureau of Labor Statistics, the Bureau of Economic Analysis, and the Board of Governors of the Federal Reserve System. Historical and forecast data at national, regional, and localized levels of aggregation for several of these indicators are available from the Moody's Analytics DataBuffet™ product. See Figure 12 for mnemonic citations. In all charts, US recessions are shaded.

Seek alternative employment or other income

Volatility of unemployment levels and availability of alternative sources of disposable income are vital distinctions between the Global Financial Crisis and the pandemic. CECL models reacted quickly to the unemployment spike that began in Q1 2020 and the sharp recovery in Q3 2020. Current fiscal and monetary responses were faster and larger than the Global Financial Crisis, but it remains unclear if these factors prevented or merely delayed loss emergence. Many businesses closed permanently, and structural transitions in several industries were accelerated. Prospective development of job markets and more targeted fiscal support may appear more like previous recessions, but there are several factors to watch to shape loss reserve strategy in the meantime.

Record levels of unemployment were reached in both the Global Financial Crisis and the pandemic, with peaks of 10.0% and 14.8% in October 2009 and April 2020, respectively. The unemployment rate was much more volatile during the pandemic than the Global Financial Crisis; this was an early defining feature of the current recession. Peak unemployment occurred nearly two years after the start of the 2009 recession and was slow to recover, not falling below 5% until January 2016—nearly nine years later. Peak unemployment was reached only two months into the current recession but decreased by 50% within 6 months and continues a gradual recovery. Unemployment remained at 6.1% in April 2021.

Figure 3 Unemployment Rate (%, SA) and Average Weeks Unemployed (SA)

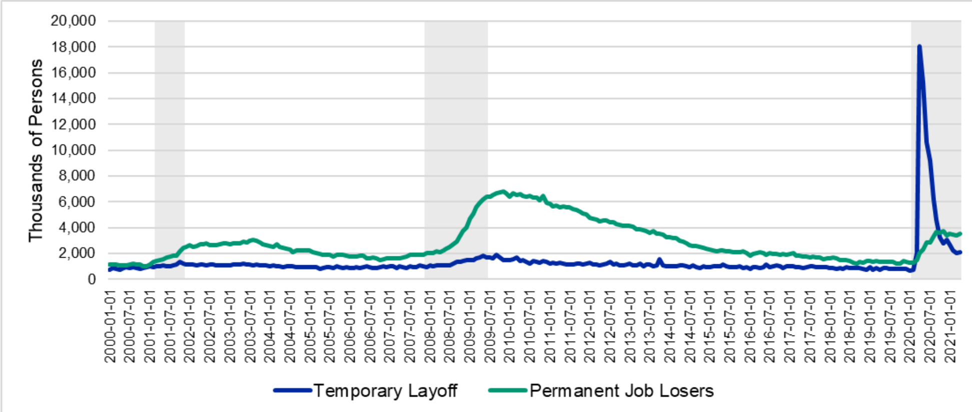


Source: US Bureau of Labor Statistics

The length of time workers remain unemployed is important for evaluating loss emergence as longer periods of unemployment are more likely to be permanent and unemployment benefits provide a finite safety net. The influx of pandemic-related claims is evident in the sharp decline of average weeks unemployed as well as direct measures of initial and continuing claims at the start of the recession. Through early 2021 these indicators have returned as signals for evaluating the unemployed population as headline unemployment and initial claims have normalized from their Q2 2020 peaks. Average weeks unemployed reached 29.7 weeks in March 2021, as shown in Figure 3. Of total unemployed, the percentage unemployed 27 weeks or more has steadily climbed throughout the current recession and is approaching peaks observed during the Global Financial Crisis. Peak charge-offs for commercial banks coincided with peaks in the percent of unemployed who were jobless 27 weeks and over following the Global Financial Crisis (that is, losses emerged as unemployed workers exhausted unemployment benefits).

As the average length of unemployment continues to expand, changes in benefit availability and the composition of the unemployed will be informative for reserve judgments. Temporary layoffs featured much more prominently in the pandemic than the last two recessions. These occurred as businesses shut down due to social distancing orders, with plans to rehire workers once restrictions were lifted. Temporary layoffs have declined as social distancing orders lift, but signs of recovery are elusive in the permanent job loser data depicted in Figure 4.

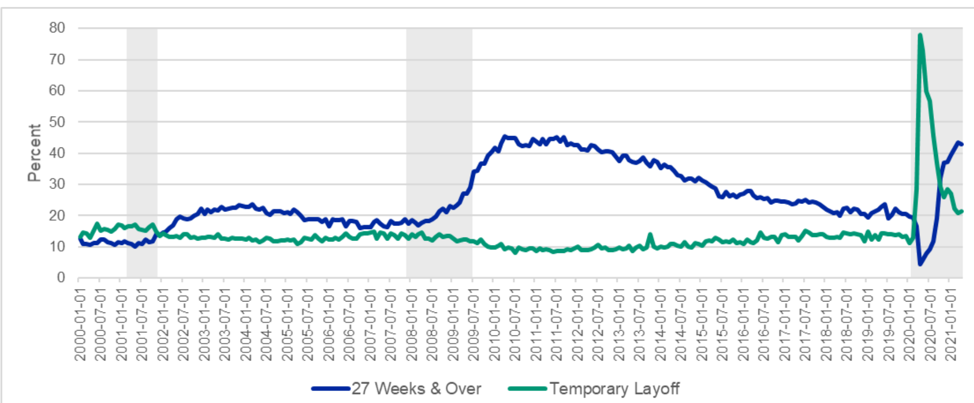
Figure 4 Unemployment Level – Job Losers on Temporary Layoff (SA) and Permanent Job Losers (SA)



Source: US Bureau of Labor Statistics

Unemployment benefit extensions and enhancements provided by the CARES Act and successive legislation factor in the muted impact of extended unemployment on credit experience, but resurgent job markets are also expected as vaccine rollout continues and possibly reverses unemployment duration trends. Through the end of April, 44.4% or 147.5 million Americans had received at least one dose, and 31.8% or 105.5 million Americans were fully vaccinated according to CDC data.[3] Vaccine eligibility was expanded to include all US adults effective April 19, 2021, with many states opening eligibility ahead of this deadline.

Figure 5 Percent of Total Unemployed Jobless 27 Weeks or More (%, SA) and Percent of Total Unemployed on Temporary Layoff (%, SA)



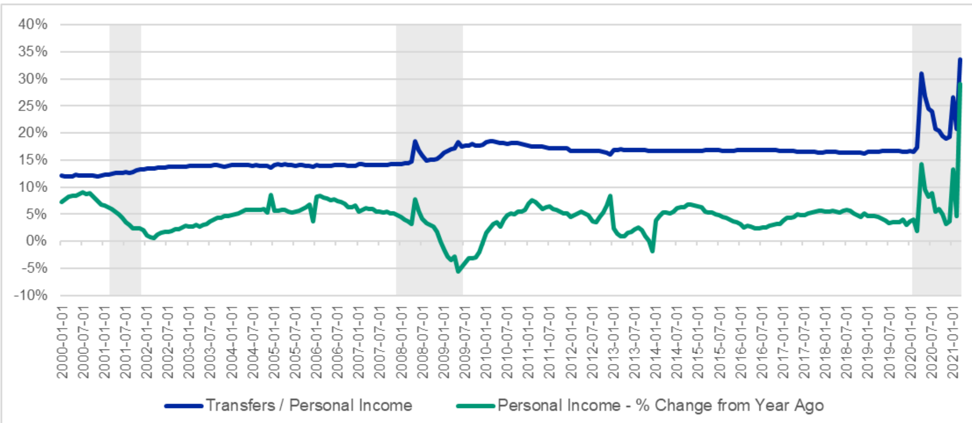
Source: US Bureau of Labor Statistics

Workers are typically eligible for up to 26 weeks of benefits from most state-funded unemployment compensation programs (driving the Bureau of Labor Statistics' measurement of workers unemployed 27 weeks or more). Under the CARES Act, all states provided 13 additional weeks of federally funded Pandemic Emergency Unemployment Compensation (PEUC) benefits, followed by additional weeks of federally funded benefits in states with high unemployment (up to 20 weeks depending on state laws). Expanded benefits included an additional $600 per week through July 2020. Also, under the CARES Act, some people who exhausted these benefits and many who lost their jobs but were not normally eligible (for example, self-employed and gig workers) qualified for Pandemic Unemployment Assistance (PUA). Successive legislation in December 2020 and March 2021 extended unemployment benefits (including assistance for self-employed or gig workers) with a $300 weekly supplement through September 6, 2021. As the social distancing restrictions that drove increases in temporary layoffs are lifted, there is some question whether the enhanced unemployment benefits (or other pandemic-related factors such as difficulty finding childcare, health concerns, and so on) will make workers reluctant to return to their jobs. Figure 5 provides two key benchmarks for monitoring this behavior. Reserve managers' judgments about loss emergence should carefully consider the September expiration of pandemic unemployment benefits (or an extension if Congress passes additional legislation) and monitor the scale of extended unemployment and permanent job losses that exist within their portfolio footprint.

[3] COVID-19 Vaccinations in the United States. Retrieved from CDC, https://covid.cdc.gov/covid-data-tracker/#vaccinations, May 4, 2021.

Separate from enhanced unemployment benefits, other transfer payments affected the personal income of large segments of the population (both employed and unemployed) and enhanced the contrast between the pandemic and previous recessions. In March 2020, the CARES Act provided $300 billion in one-time cash payments to individuals (with most single adults receiving $1,200 and $500 per dependent child). The scale and timing of these initial payments are the first obvious differences between the pandemic and the Global Financial Crisis income data. Additional one-time $600 cash payments to individuals were issued in December 2020, followed by $1,400 checks issued in March 2021. The long-term trend of personal income and personal current transfer receipts (which include stimulus and unemployment payments) both exhibit the effect of the fiscal response to the COVID-19 pandemic as shown in Figure 6. Transfer receipts' impact to income—that is, total income exceeded pre-pandemic trends, despite high levels of unemployment—is meaningful for prospective reserve judgments. Future decreases in transfer payments or reversion of income to the longer-term trend could both signal increased risk for borrower default.

Figure 6 Personal Income and Personal Current Transfer Receipts (SAAR)

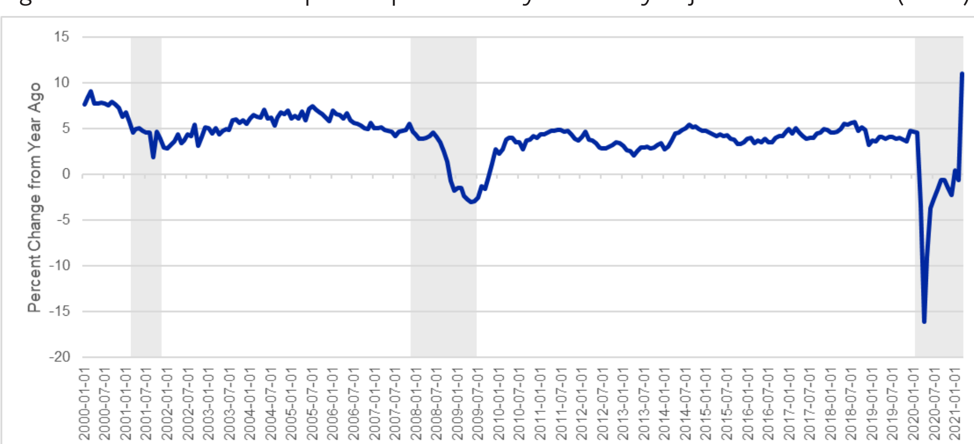


Source: US Bureau of Economic Analysis

Curtail monthly expenses

Personal consumption expenditures (PCEs) are the primary measure of consumer spending for goods and services. Social distancing orders, which both closed or reduced business operations and required consumers to shelter in place, had a material impact on PCE at the beginning of the pandemic. With businesses closed and consumers staying home to avoid infection, the opportunity to spend was limited. There was a strong shift to e-commerce, which peaked at 16.2% of total retail sales in Q2 2020 and remains above pre-recession levels. Notably, the spending curtailment occurred at the same time as increases in disposable income noted previously. Pent-up demand may offset this savings as restrictions are lifted, but in currently observable data, consumers continued meaningful restraint into early 2021 as shown in Figure 7. Through March 2021, stimulus money, vaccinations, and business reopenings supported a recovery in consumer spending. The timing, magnitude, and volatility of change relative to the start of the recession are substantially different in the pandemic than were observed during the Global Financial Crisis. Reserve decisions should carefully evaluate the path of future consumption for indications that consumers remain stressed—with social distancing orders lifted, household expense management could behave more consistently with past recessions.

Figure 7 Personal Consumption Expenditures by Seasonally Adjusted Annual Rate (SAAR)



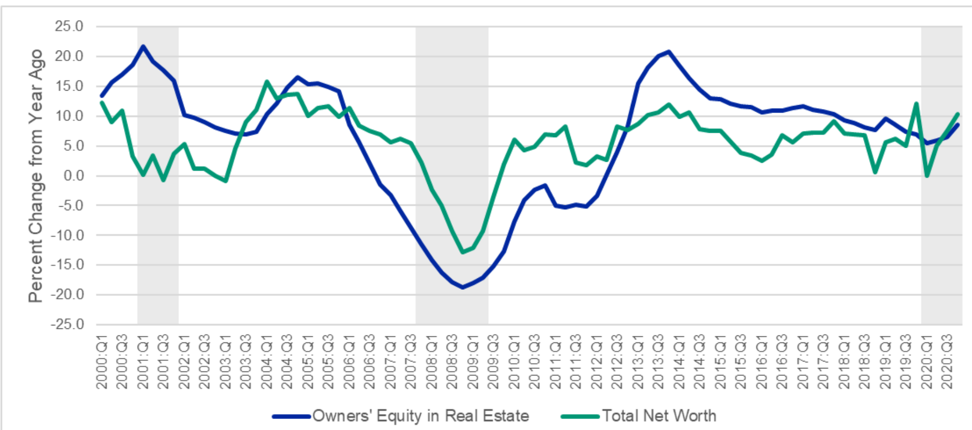
Source: US Bureau of Economic Analysis

Eviction moratoriums at the state and local level were enacted at the start of the pandemic. A national moratorium was enacted by executive order in September 2020 and extended through June 2021 by the Centers for Disease Control and Prevention (CDC). The CDC moratorium was legally challenged and thrown out by a US District Court judge in May 2021, upending a relief measure that has protected millions of tenants but created hardships for landlords. The Justice Department appealed and may seek an emergency stay of the ruling. These developments should be considered carefully as part of credit loss expectations. The moratoriums removed the burden of rent from many households since the start of the pandemic, but also enabled many renters to incur multiple months of unpaid rent. The ruling could make it easier for landlords to evict these tenants or embolden more state and local court systems to stop enforcing the moratoriums. These actions could prompt borrowers to prioritize bringing rent current over payment of other debts. The US Census Bureau Pulse Survey in April 2021 suggested one in seven renters are behind on their payments—roughly three times the typical rate. Congress appropriated $25 billion in rent assistance as part of the December COVID-19 aid package, but distribution has so far been stalled by efforts to implement distributions at the state level and prevent fraud.

Unlock equity, liquidate assets, or seek alternative financing

In contrast to the last two recessions, households confronted the current recession with the support of appreciating values across multiple asset classes and wider credit availability. Unlike the Global Financial Crisis where many borrowers found themselves underwater in one or more mortgages, home price appreciation continued throughout the current recession as shown in Figure 8. To date, this has significantly limited the strategic default that characterized consumer behavior during the Global Financial Crisis and preserved home equity access at historically low rates (that is, HELOCs and cash-out financing).

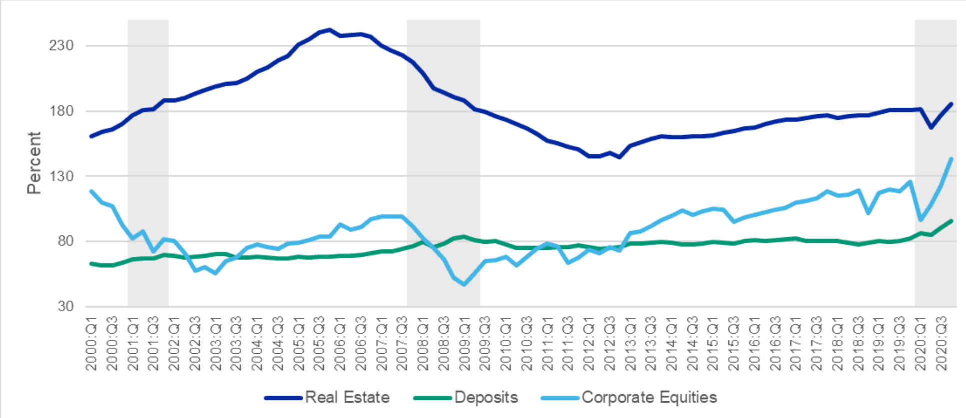
Figure 8 Households: Total Net Worth and Owners' Equity in Real Estate (Level, NSA)



Source: Board of Governors of the Federal Reserve System

Following market turmoil in early March 2020, the Federal Reserve took a range of actions (for example, funding facilities, lowering benchmark rates, and so on) to support the flow of credit to households and businesses. These actions, combined with fiscal stimulus payments, led to significant growth in new mortgage originations, mortgage refinancing, and retail trading volume (preventing the sustained market selloff observed throughout prior recessions) shown in Figure 9. Additionally, the CARES Act granted greater access to retirement account savings with provisions that waived penalties for early distributions from retirement accounts, increased the maximum loan from 401(k) accounts to 100% of vested assets, and allowed a 1-year delay in repayments of outstanding retirement plans.

Figure 9 Households: Assets as a Share of Disposable Personal Income (SAAR)



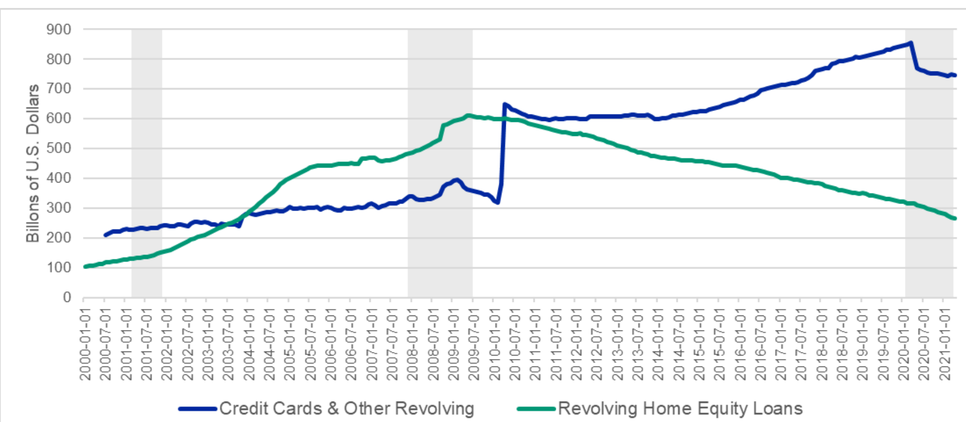
Source: Board of Governors of the Federal Reserve System

Reserve judgments should monitor regional differences in housing prices that may have idiosyncratic effects on a given portfolio not captured in national data. When a household's largest asset keeps appreciating (along with their brokerage and retirement accounts), they retain the flexibility to support debt service. Credit risk managers should carefully monitor the effects these factors have on borrower behavior, and carefully consider how nuanced credit models' evaluation of these factors relates to the regional exposure of their portfolios.

Reduce debt or defer payments

Before the Global Financial Crisis, there was never a year-over-year decline in revolving credit balances as shown in Figure 10. Balances have dropped a second time during the pandemic, but for very different reasons. Global Financial Crisis declines reflected significant default closely related to stress in the mortgage market due to declining home prices. To date, charge-off rates on cards and other revolving credit remain historically low. Credit card balances were $105 billion lower in March 2021 than they were a year earlier—the largest yearly decline observed in available data. Revolving home equity lines continued a downward trend that has been ongoing since the close of the Global Financial Crisis.

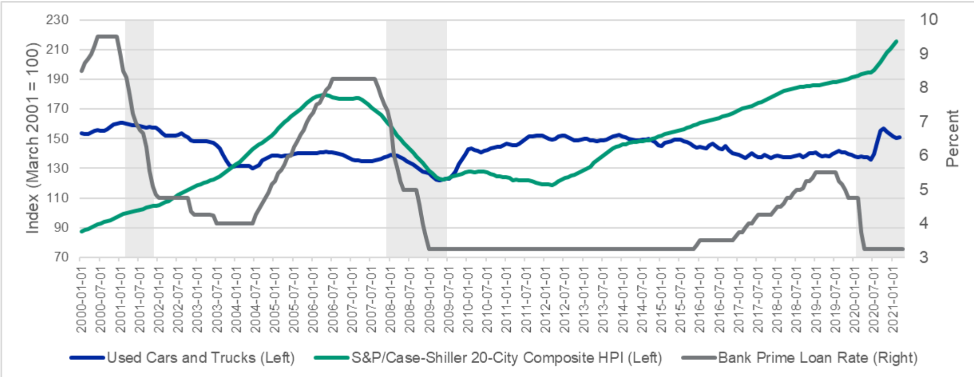
Figure 10 Consumer Credit Card and Revolving Home Equity Loans Held by US Commercial Banks



Source: Board of Governors of the Federal Reserve System

Balance declines highlight two present factors that were absent in the Global Financial Crisis: federal support of households through direct financial transfers and forbearance of mortgage and student loan payments, and limits on consumption opportunities due to state and local social distancing orders. Households have deployed the resulting liquidity for debt reduction and realize some of the highest levels of personal savings in decades.

Figure 11 Consumer Price Index: Used Cars and Trucks, S&P/Case-Shiller Home Price Index, Bank Prime Rate



Sources: US Bureau of Labor Statistics, Board of Governors of the Federal Reserve System, S&P Dow Jones Indices LLC

The CARES Act established forbearance for federally insured mortgages and federal student loans. Financial regulatory agencies used existing authorities to encourage loan forbearance and other relief for consumers. Banks' strategies for deferrals vary across portfolios, and in composition (for example, principal and interest, principal only, number of payments deferred, number of deferrals issued to a single borrower, and so on). Deferred balances outstanding on bank balance sheets have declined significantly since the start of the pandemic. As these measures will soon expire, bankers must think carefully about the residual risk in their portfolios. Collateral values remain strong and credit is priced affordably (see auto and home prices and the prime rate in Figure 11), so outcomes depend on the borrower's available cash flow to support debt service.

Conclusion

Much of the pandemic's stress was temporary and combined with government support at levels very different from the Global Financial Crisis. It is likely these conditions blocked some of the losses that would have otherwise been incurred, but residual repricing of credit may still remain in the system given the extent of economic damage and structural changes in demand caused by the pandemic. After many of these interventions (foreclosure/eviction moratoriums, enhanced unemployment benefits, and so on) expire in Q2 2021 and Q3 2021, borrower behavior may change again, potentially renewing the value of Global Financial Crisis benchmarks for current reserve judgments. In any case, continuing to monitor the options available to borrowers who are unemployed but want to avoid default is crucial for managing reserves and prospective judgments about loss emergence.

Visit our CECL experts page to reach out to one of our authors for more information on this topic or to request regular updates from our research team.

Figure 12 Macroeconomic Variable Mnemonic Citations

Default Avoidance Strategy	Macroeconomic Benchmarks	US Government Data (Historical)	DataBuffet™ (Historical and Forecast)	April Forecast Trend
Seek Alternative Employment/Other Income	Unemployment Rate	Bureau of Labor Statistics	FLBR	Declining
	Average Weeks Unemployed		N/A	
	Job Losers on Temporary Layoff		N/A	
	Permanent Job Losses		N/A	
	Percent of Unemployed on Temporary Layoff		N/A	
	Percent of Unemployed Jobless 27 Weeks or More		FLBUK15GQ	Decreasing
	Personal Income	Bureau of Economic Analysis	FYPQ	Increasing
	Personal Current Transfer Receipts		FYPTQ	Increasing
Curtail Monthly Expenses	Personal Consumption Expenditures (PCE)	Bureau of Economic Analysis	C / FC	Increasing
Unlock Equity/Seek Alternative Financing	Consumer Loans: Credit Cards and Other Revolving Plans, All Commercial Banks	Board of Governors of the Federal Reserve System	FCCREVQ	Increasing
	Consumer Loans: Other Consumer Loans: Automobile Loans, All Commercial Banks		FBBABLLCCBQ	Increasing
	Real Estate Loans: Residential Real Estate Loans: Revolving Home Equity		FBBABLLR1HCBQ	Increasing
	Real Estate Loans: Residential Real Estate Loans, All Commercial Banks		FBBABLLR1CBQ	Increasing
	Real Estate as a Share of Disposable Personal Income		FYPDPI$Q + FZFL155035015Q	Increasing
	Deposits as a Share of Disposable Personal Income		FYPDPI$Q + FNWFA$	Increasing
	Corporate Equities as a Share of Disposable Personal Income		FYPDPI$Q + FZFL153064105 Q	Increasing
	Household Total Net Worth		FZFLHHNWQ	Increasing
	Owners' Equity in Real Estate		FNWRE	Increasing
Reduce/Consolidate Debt or Defer Payments	Consumer Price Index: Used Cars & Trucks	US Bureau of Labor Statistics	FCPIUETA02	Stable
	S&P/Case-Shiller 20-City Composite Home Price Index	S&P Dow Jones Indices LLC	FHCLHP1TI20Q	Increasing
	Bank Prime Loan Rate	Board of Governors of the Federal Reserve System	FRPRIME	Stable