

## Measuring Household Distress and Potential Policy Impacts

Jeffrey Cohen, Professor of Finance and Real Estate, University of Connecticut, and  
Research Fellow, Institute for Economic Equity, St. Louis Fed  
[Cletus C. Coughlin](#), Emeritus  
[William R. Emmons](#), Economist and Assistant Vice President  
Jacob S. Haas, Research Assistant  
[Lowell R. Ricketts](#), Data Scientist

**A**ncedotal evidence suggests many households are struggling to meet their financial obligations (e.g., making loan payments). Yet housing markets and consumer spending have been strong, and [personal bankruptcies](#) and [mortgage foreclosures](#) are at multiyear lows.

Expansive government policies that include income support, extended unemployment insurance, low interest rates, and relief from default or foreclosure may help explain low levels of reported distress. However, a major concern is that current policy measures are simply postponing rather than eliminating the household distress.

To offer some insight, we created a national measure of household distress that allows comparisons over time and the ability to examine the importance of specific variables and policies.<sup>1</sup> Perhaps surprisingly, we find that the

current level of household distress is below average compared with the past 21 years, which includes the Great Recession and its protracted effects.

### Tracking Distress Across Business Cycles

To track household distress, we combine the 13 time series shown in the table into an index using principal component analysis (PCA). This set of variables is atheoretical in the sense that no particular model motivated their inclusion. Instead, to capture a broad measure of household well-being, we chose variables that provide information on households' employment, income, housing wealth, spending, and ability to make debt payments.

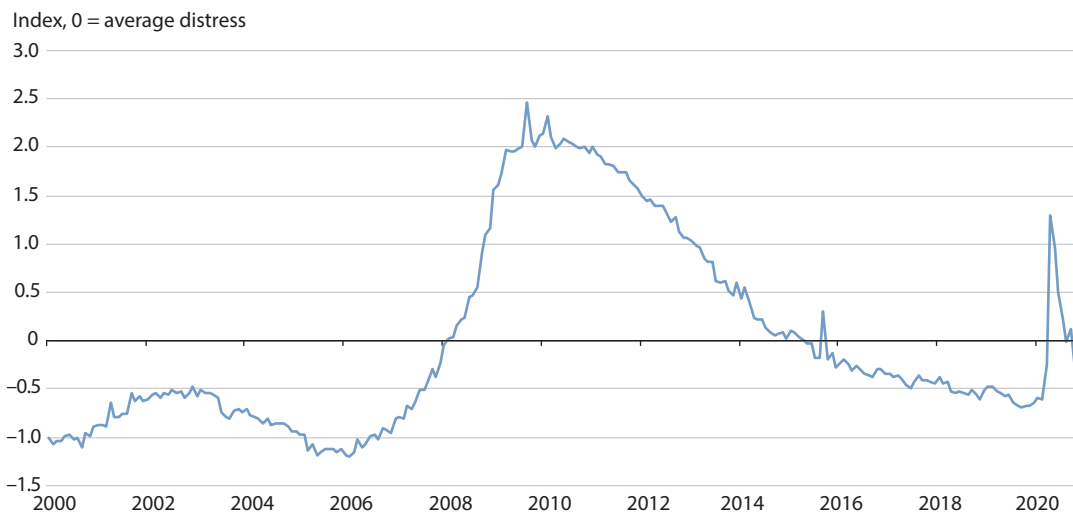
The index provides a parsimonious measure of household distress that both offers a current assessment and allows comparisons with other business cycles. We extract

### Variables in Index with First Principal Component Loadings

Measure	Source	Loading
Auto loan 90+ day delinquency rate	New York Fed/Equifax Consumer Credit Panel	0.11
Bankcard loan 90+ day delinquency rate	New York Fed/Equifax Consumer Credit Panel	0.12
Mortgage loan 90+ day delinquency rate	New York Fed/Equifax Consumer Credit Panel	0.14
U-6: Unemployed + marginally attached + part-time for economic reasons, rate (Age 16+, SA)	Bureau of Labor Statistics/Haver Analytics	0.13
Civilian labor force participation rate (Age 16+, SA)	Bureau of Labor Statistics/Haver Analytics	-0.04
Average hours at work (Age 16+, SA)	Bureau of Labor Statistics/Haver Analytics	-0.11
Real retail sales & food services per capita	Census Bureau/Haver Analytics	-0.09
Real disposable personal income per capita	Bureau of Economic Analysis/Haver Analytics, Census Bureau/Haver Analytics	0.02
Total existing home sales per capita (SAAR)	National Association of Realtors	-0.11
Median home sales price, SA, Adjusted for CPI	National Association of Realtors	-0.10
Percent of banks tightening standards on credit cards	Senior Loan Officer Survey (Federal Reserve)	0.01
Percent of mortgage loans past due (SA)	Mortgage Bankers Association	0.13
Share of mortgages in foreclosure	Mortgage Bankers Association	0.13

NOTE: CPI, consumer price index; SA, seasonally adjusted; SAAR, seasonally adjusted annual rate.

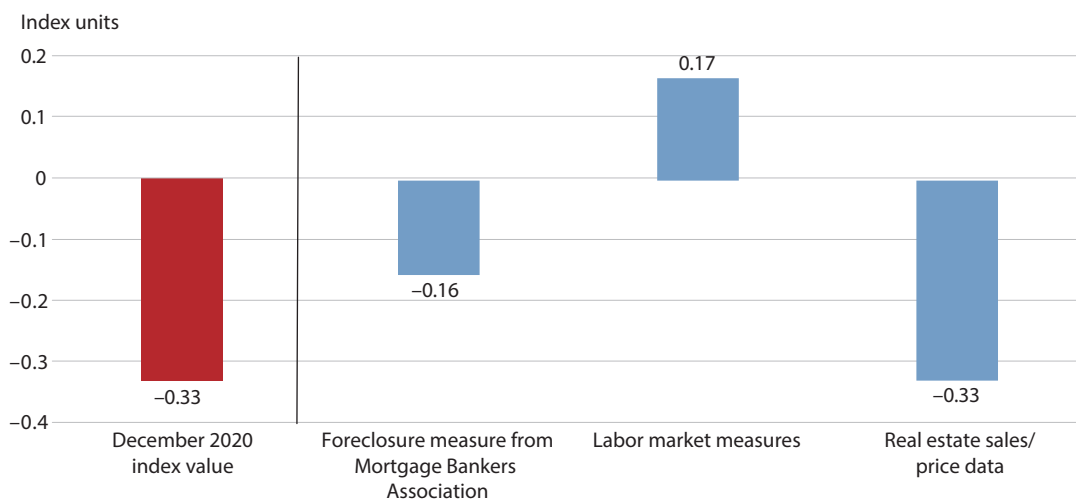
Figure 1  
**Household Distress Index**



NOTE: This figure displays the first principal component of the data series listed in the table. Data used span from October 1999 to December 2020. Data are monthly or, if quarterly, are imputed to represent each month within a given quarter. Data are standardized and have a mean of zero over the time span. The index is then standardized with a standard deviation of 1. Index values should be thought of as a relative measure, comparing household distress across time. In interpreting the index, values below zero represent below-average distress, while values above zero suggest above-average distress.

SOURCE: Authors' calculations and sources listed in the table.

Figure 2  
**Contribution of Select Variables to the Distress Index**



NOTE: "Labor Market Measures" includes the unemployment rate, average hours worked, and labor force participation rate.

SOURCE: Authors' calculations and sources listed in the table.

the first principal component, which accounts for roughly 54 percent of the variance within our sample, and interpret it as a measure of household distress.<sup>2</sup>

Government policies such as income support and debt relief may help explain low levels of household financial distress, but outcomes are uncertain once assistance ends.

As shown in Figure 1, this index rises in response to the three business cycle downturns within our 1999-2020 time frame. Household distress increased dramatically during the Great Recession and slowly receded over time from 2011 through early 2020. In the recent downturn, distress spiked during the early months of the pandemic but eased considerably over the latter half of 2020. The index value peaks at 2.46 in September 2009 and 1.29 in April 2020. The index value as of December 2020 was -0.33, close to pre-pandemic values.

### Factors Driving Distress

By leveraging the additive nature of PCA, we isolate the contribution of each variable to the overall index. Figure 2 shows that, unsurprisingly, elevated unemployment, reduced work hours, and lower labor force participation were collectively a leading driver of distress. Conversely, a relatively low foreclosure rate and strong real estate price appreciation and sales reduced the measure. Foreclosure rates could increase if federal and local moratoria expire, which would drive our measure higher.

Broad-based government support, through policies to support household incomes and the housing market, seems to be reducing distress levels. Note that certain factors are tracking distress experienced by some, but not necessarily all, households. Housing markets and consumer spending, for example, may be dominated by higher-income and less-stressed households.

### Conclusion

Our exploration of household financial distress combines several measures using PCA to create a monthly index. The index increased dramatically during the spring of 2020 but dropped sharply during the latter half of 2020.

Economic policies, including income support and a federal foreclosure moratorium, may have mitigated or eliminated measured distress; or these policies may have masked and postponed it. Future work will use disaggregated data to highlight differences across groups of households defined by demographic characteristics. ■

The authors thank [Juan Sánchez](#) and [Kevin Kliesen](#) for helpful comments.

### NOTES

<sup>1</sup> For a different approach to measuring distress, see [Sánchez et al. \(2020\)](#), who use (i) the 30+ day credit card delinquency rate and (ii) the share of households using more than 80 percent of their credit limits.

<sup>2</sup> Other economic indices are similarly created, such as the St. Louis Fed's [Financial Stress Index](#), the Chicago Fed's [National Activity Index](#), and the New York Fed's [Weekly Economic Index](#).