

## COVID-19 Job and Income Loss and Financial Distress: The Protective Role of Liquid Assets

Mathieu Despard, UNC-Greensboro<sup>1</sup>  
Stephen Roll, Washington University in St. Louis<sup>2</sup>

The COVID-19 pandemic introduced a public health and economic crisis unlike we have ever seen in the U.S. Stay at home, social distancing, and other public health measures to slow the spread of the coronavirus greatly disrupted daily routines, including work, educational, and economic activities. Almost a quarter of households experienced a job or income loss due to COVID-19, losses felt disproportionately among Hispanic, low-income, and young adults. Households with job and income losses due to COVID-19 were two to three times more likely to experience a range of material hardships, even after controlling for income and demographic characteristics (Despard et al., 2020a). The degree to which households can weather a major economic storm such as COVID-19 may depend on the liquid assets they had entering the crisis. Liquid assets predict subjective financial well-being (Sun et al., 2018) and have a buffering effect with respect to material hardship amidst financial shocks such as a job loss (Despard et al., 2018a; McKernan et al., 2009).

Using a nationally representative sample of 5,038 households who completed a survey between April 29 and May 20 concerning the economic impacts of COVID-19, we examined how liquid assets mitigate financial distress amidst job and income losses. Findings from our study can guide public policies to help financially gird households against major events like COVID-19 and ensure that economically vulnerable households do not face a disproportionate level of risk for material hardship.

A household's liquid assets – amounts held in checking and savings accounts, cash, and pre-paid debit cards – are resources to be drawn upon if and when income is insufficient to cover household expenses like rent, car payments, and food and to cover large and irregular expenses. Liquid assets can help households avoid financial distress, such as over-drafting bank accounts and falling behind on credit card payments. Having liquid assets lessens the risk for material hardship (Despard et al., 2018a; Gjertson, 2016; McKernan et al., 2009; Sabat & Gallagher, 2019), though this may be less so among Hispanic and Black compared to White households (Despard et al., 2018b).

Certain levels of liquid assets may affect financial distress. For example, Sabat and Gallagher (2019) found that liquid assets of \$2,467 with a 95% confidence interval of \$1,814 to \$3,011 predicted the steepest decline in the risk of experiencing a material hardship. Another sign of financial distress is when households turn to credit-based alternative financial services (CAFS) such as payday, auto title, and pawnshop loans and/or sell blood plasma. Use of CAFS may exacerbate financial distress. Payday loan interest rates exceed 300% (Bertrand & Morse, 2011; Consumer Financial Protection Bureau, 2013; Edmiston, 2011) and more than 80% of these loans are renewed within two weeks (Consumer Financial Protection Bureau, 2014). CAFS access (Chang, 2019) and use (Bartfeld & Collins, 2017) is associated with food insecurity while greater amounts of liquid assets are associated with lesser use of CAFS (Despard et al., 2017; Brobeck, 2008).

Liquid assets can help households avoid financial distress – difficulties meeting financial obligations and turning to high-cost credit in a cash crunch. However, the degree to which liquid assets help households cope with a job and/or income loss due to a major, unexpected, and global event like the COVID-19 pandemic is unknown. Accordingly, our research questions are:

*RQ1: Are COVID-19 related job and/or income losses associated with a greater likelihood of experiencing financial distress?*

*RQ2: Are higher levels of liquid assets associated with lesser likelihood of financial distress?*

*RQ3: Do liquid assets moderate the relationship between COVID-19 related job and/or income loss and financial distress?*

Data for this study come from the Socio-Economic Impacts of COVID-19 Survey, which was fielded from April 27, 2020, to May 12, 2020, and used quota sampling techniques to recruit a nationally

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<sup>1</sup> Mathieu Despard ([mdespard@uncg.edu](mailto:mdespard@uncg.edu)), Associate Professor, Department of Social Work

<sup>2</sup> Stephen Roll ([sroll@wustl.edu](mailto:sroll@wustl.edu)), Research Assistant Professor, Social Policy Institute

representative sample of 4,383 respondents. remained in the sample. The dependent variable in our study was financial distress during the COVID-19 pandemic. We used multiple measures of distress in two categories: 1) falling behind on financial obligations and expenses: skipping essential bills, carrying credit card debt from month-to-month, falling behind on credit card payments, and overdrafting from a bank account; and 2) use of high-cost financial resources: auto title loans, payday loans, pawn shop loans, and selling blood plasma. The predictor variables of interest were whether a household lost a job or lost income as a result of COVID-19 and the amount of liquid assets held by a household immediately prior to the pandemic. Control variables included age, gender, race/ethnicity, marital status, number of children in the household, health insurance status, current school enrollment, educational attainment, housing status, access to a vehicle, credit card ownership, self-reported physical health, employment status prior to the pandemic, household income in 2019, and bank account ownership.

To correct for potential endogeneity regarding COVID-19-related job/income loss based on observed covariates, we used generalized boosted regression modeling (GBM), a nonparametric approach that uses automated modeling algorithms and machine learning techniques to identify the propensity score weights that minimize the overall mean effect size differences between a large array of covariates (McCaffrey et al., 2004). We re-estimated a selection model over 10,000 iterations (or “trees”) to find optimal propensity score weights. Propensity score-weighted linear probability models were used to estimate the marginal effects of COVID-19-related job/income loss and liquid assets on multiple indicators of financial distress, taking the general form:

$$y_i = \beta_0 + \beta_1 COVID\_Shock_i + \beta_2 Liq\_Quartile_i + \delta_i \pi + \varepsilon_i \quad (1)$$

The second set of models estimates the degree to which liquid assets can moderate the impact of COVID-19-related job/income loss, as follows:

$$y_i = \beta_0 + \beta_1 COVID\_Shock_i + \beta_2 Liq\_Quartile_i + \beta_3 (COVID\_Shock_i * Liq\_Quartile_i) + \delta_i \pi + \varepsilon_i \quad (2)$$

The sample well approximated the U.S. population in terms of gender, income, race/ethnicity, and age, though educational attainment was higher as 57% had at least a bachelor's degree. Prior to the pandemic, two-thirds of respondents reported being employed either full-time or part-time. The mean amount of liquid assets held by the sample was around \$27,000 while the median was only \$5,500, indicating that this variable is very right skewed. Older households, non-students, childless households, and households where the respondent or their spouse/partner was retired or unable to work due to a disability were less likely to report a COVID-19-related job or income loss. By contrast, full-time students or households where the respondent or their spouse or partner were self-employed or employed part-time were more likely to report a job or income loss. The application of propensity score weights was highly effective at balancing the two groups on observable characteristics as the largest standardized difference was -0.1.

COVID-19-related job and income losses were significantly associated with higher probabilities of all eight measures of financial distress. For example, 18% and 12% of those with job/income loss skipped essential bills and fell behind on credit card payments compared to 8% and 6% of those without job/income loss ( $p < .001$ ), respectively. Similarly, 8% and 11% of those with job/income loss sold blood plasma and used a pawn shop loan compared to 4% and 5% of those without job/income loss, ( $p < .001$ ), respectively.

Tables 1 and 2 display marginal effects from propensity score-weighted linear probability models of COVID-19 job/income loss and liquid assets on trouble meeting financial obligations and use of high-cost financial resources, respectively. Each measured outcome has two sets of model estimates – one that estimates the effects of COVID-19 job/income loss and liquid assets on each outcome independently (Equation 1) and one that estimates the moderation effect of liquid assets (Equation 2).

As reflected in Table 1, we find that higher levels of liquid assets are associated with significant and substantial reductions in the probability of trouble meeting financial obligations. Relative to being in the bottom quartile of liquid assets (\$0 to \$2,000), respondents in higher liquid asset quartiles tend to report experiencing these outcomes at lower rates. Those in the third (\$8,250 to \$28,600) and fourth (\$28,601 and above) quartiles tend to experience better outcomes than those in the second (\$2,001 to \$8,249). For example, those in the second quartile of liquid assets had a probability of bank account overdraft that was five percentage points lower compared to those in the first quartile ( $p < .001$ ). We also

observe that, in many cases, liquid assets moderate the relationship between COVID-19-related job and income loss and modeled outcomes. For example, households in the third quartile of liquid assets with a COVID-19-related job/income loss were 13 percentage points less likely to report skipping essential bills than households in the bottom liquid asset quartile who experienced a job/income loss ( $p < .001$ ).

From Table 2, we see that higher amounts of liquid assets are correlated with lower rates of using high-cost financial resources. Compared to households with liquid assets in the first quartile, households in the upper 75<sup>th</sup> percentile of liquid assets are significantly less likely to use all four types of high-cost financial resources. For example, those in the second quartile of liquid assets had a probability of using auto title ( $p < .01$ ) and payday ( $p < .001$ ) loans that was four percentage points lower than those in the first quartile of liquid assets. However, liquid assets only moderate the impact of COVID-19-related job/income loss for certain high-cost resources - selling blood plasma and pawning items.

The COVID-19 pandemic has wreaked economic havoc for many U.S. households. We find increased financial distress among those with COVID-19-related job and income losses and that liquid assets are associated with lower probabilities of all eight types of distress. We also find that liquid assets mitigate most forms of distress among those with job and income losses. Though prior research has demonstrated the value of liquid assets in helping households avoid financial distress, our research shows that these protective effects translate to the specific context of the economic turmoil resulting from the COVID-19 pandemic. This distinction is not trivial. Research on the protective effects of liquid assets generally occurs in the context of relatively normal or stable economic conditions. It was unlikely that households experiencing job and income losses had the option of seeking out additional work to make ends meet, meaning their pre-pandemic liquid asset buffer may have taken on particular importance during the pandemic.

Much of the current policy discussions surrounding preparation for future pandemics concern ensuring that our public health, governmental, and economic institutions are better equipped respond to a future crisis. Our research indicates the need to also shore up the emergency savings and liquidity options of U.S. households. Policy goals concerning financial inclusion should better emphasize access to and use of savings accounts (e.g., the Consumer Financial Protection Bureau's "Start Small, Save Up" initiative) as nearly a quarter of U.S. households lack savings accounts (Federal Deposit Insurance Corporation, 2018). Many banks fail to offer affordable products and are unlikely to do so without regulatory changes. Private sector innovation can play a role. Financial technology platforms like Chime offer affordable accounts, while platforms like SaverLife and Onward encourage and facilitate saving for emergencies.

Employers can also play an important role by offering employees the ability to split their direct deposits into dedicated emergency savings funds. Still, expanding savings account access is necessary but insufficient in helping households, especially low-income households that struggle to meet essential expenses let alone save. These households need savings incentives and policy supports in the form of a higher minimum wage and universal basic income, which can help households meet immediate consumption needs and build liquid assets to be more financially resilient. Absent these large-scale policy reforms, policymakers could help expand existing economic supports to help households build savings such as encouraging and offering financial incentives for saving tax refunds (Despard et al., 2020b; Roll et al., 2019, 2020) through the Refund to Rainy Day Act and similar policy proposals. These efforts can also help increase the population's resiliency to future pandemics. Following stay-at-home orders, social distancing, and minimizing the risk of exposure and transmission of a virus require individuals to be able to afford to stay home. Increasing households' liquid assets is a direct way to accomplish this objective while helping households avoid financial distress during a pandemic.

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Table 1. The Impact of COVID-19-Related Job/Income Loss and Liquid Assets on Hardship and Debt Outcomes, Linear Probability Model

Outcome	Skipped Essential Bills	Skipped Essential Bills	Carried CC Debt	Carried CC Debt	Behind on CC Debt	Behind on CC Debt	Account Overdrafts	Account Overdrafts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
COVID-19 Job/Income Loss	0.092*** (0.011)	0.144*** (0.024)	0.040*** (0.010)	0.051* (0.021)	0.063*** (0.016)	0.088** (0.030)	0.058*** (0.009)	0.095*** (0.023)
Liquid Assets, 2nd Quartile	-0.042* (0.018)	-0.050** (0.015)	-0.056*** (0.015)	-0.065*** (0.015)	-0.034 (0.024)	-0.043 (0.025)	-0.053*** (0.015)	-0.044** (0.014)
Liquid Assets, 3rd Quartile	-0.123*** (0.014)	-0.062*** (0.014)	-0.099*** (0.014)	-0.086*** (0.015)	-0.208*** (0.022)	-0.195*** (0.023)	-0.111*** (0.012)	-0.073*** (0.013)
Liquid Assets, 4th Quartile	-0.100*** (0.015)	-0.044** (0.014)	-0.102*** (0.014)	-0.083*** (0.015)	-0.305*** (0.022)	-0.263*** (0.022)	-0.088*** (0.013)	-0.062*** (0.014)
COVID-19 Job/Income Loss*2nd Q LA		0.013 (0.036)		0.019 (0.030)		0.017 (0.049)		-0.020 (0.031)
COVID-19 Job/Income Loss*3rd Q LA		-0.130*** (0.028)		-0.027 (0.026)		-0.027 (0.043)		-0.081** (0.025)
COVID-19 Job/Income Loss*4th Q LA		-0.121*** (0.027)		-0.041 (0.025)		-0.092* (0.039)		-0.057* (0.026)
Constant	0.602*** (0.102)	0.576*** (0.101)	0.596*** (0.087)	0.590*** (0.087)	0.512*** (0.123)	0.496*** (0.125)	0.577*** (0.097)	0.555*** (0.097)
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Financial Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Propensity Score Weighting	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,757	4,757	4,757	4,757	4,276	4,276	4,276	4,276
R-squared	0.180	0.189	0.152	0.153	0.218	0.220	0.175	0.178

Table 2. The Impact of COVID-19-Related Job/Income Loss and Liquid Assets on Alternative Financial Service Usage, Linear Probability Model

Outcome	Auto Title Loan (1)	Auto Title Loan (2)	Payday Loan (3)	Payday Loan (4)	Sold Blood Plasma (5)	Sold Blood Plasma (6)	Pawn Shop (7)	Pawn Shop (8)
COVID-19 Job/Income Loss	0.017 (0.009)	0.005 (0.016)	0.024** (0.008)	0.029 (0.017)	0.035*** (0.008)	0.067*** (0.016)	0.053*** (0.009)	0.077*** (0.019)
Liquid Assets, 2nd Quartile	-0.035** (0.013)	-0.043** (0.014)	-0.042*** (0.013)	-0.048*** (0.012)	-0.036** (0.013)	-0.026* (0.011)	-0.046** (0.014)	-0.045*** (0.012)
Liquid Assets, 3rd Quartile	-0.063*** (0.013)	-0.065*** (0.014)	-0.069*** (0.011)	-0.057*** (0.012)	-0.055*** (0.011)	-0.030** (0.011)	-0.082*** (0.011)	-0.049*** (0.012)
Liquid Assets, 4th Quartile	-0.062*** (0.014)	-0.078*** (0.014)	-0.063*** (0.013)	-0.058*** (0.013)	-0.056*** (0.012)	-0.025* (0.012)	-0.063*** (0.013)	-0.044*** (0.013)
COVID-19 Job/Income Loss*2nd Q LA		0.017 (0.026)		0.011 (0.025)		-0.023 (0.025)		-0.002 (0.028)
COVID-19 Job/Income Loss*3rd Q LA		0.005 (0.023)		-0.025 (0.022)		-0.054** (0.020)		-0.069** (0.022)
COVID-19 Job/Income Loss*4th Q LA		0.035 (0.024)		-0.011 (0.021)		-0.068*** (0.020)		-0.041 (0.024)
Constant	0.649*** (0.076)	0.657*** (0.076)	0.620*** (0.076)	0.618*** (0.076)	0.511*** (0.081)	0.495*** (0.080)	0.613*** (0.094)	0.602*** (0.093)
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Financial Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Propensity Score Weighting	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,757	4,757	4,757	4,757	4,757	4,757	4,757	4,757
R-squared	0.158	0.158	0.176	0.177	0.166	0.169	0.189	0.192