Spending Behavior Change and Financial Distress During the Great Recession

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This study investigated whether spending habits before and during the Great Recession predicted financial distress. Financial distress was defined as failing to make mortgage and non-mortgage loan payments on time. Data from the 2007–2009 panel of the Survey of Consumer Finances revealed that one's prerecession spending habit did not seem to matter. Respondents who reported in the earlier wave that they spent more than income but had begun to spend less than income during the recession were twice as likely to become financially distressed. However, those who were spending more than their income during the recession were three times as likely to be financially distressed. Being in good health, having income certainty, and above average risk tolerance lowered the odds of financial distress.

Keywords: behavioral life cycle hypothesis, financial distress, prerecession spending habit, self-control

About 73% of American households reduced their spending as one of several coping strategies of the Great Recession (Baek & DeVaney, 2010; Hurd & Rohwedder, 2010; Zick, Mayer, & Kara, 2012). However, whether this coping strategy is simply a knee-jerk reaction to already dire financial circumstances or actually helps to prevent financial distress is not fully understood. Reducing consumption has long been a coping strategy in economic downturns. Spending under any circumstance is guided by the presence of willpower and self-control (Shefrin & Thaler, 1988). Caploviz (1981) identified lowering consumption as a coping strategy against recessions and inflation, where households cut back on food, clothing, and entertainment expenditures. Yeung and Hofferth (1998) also found that families whose income decreased or those who lost jobs cut back on food and other expenditures. Similarly, households lowered their consumption and increased their savings during the Great Recession (Mody, Ohnsorge, & Sandri, 2012).

Deaton (2012) observed that American households experienced sharp declines in their incomes and increased financial distress during the Great Recession. About 40% of households were affected by unemployment, negative home equity, mortgage payment delinquencies, or foreclosure, all of which will have lifetime impact on their financial security (Hurd & Rohwedder, 2010). In the presence of employment, income, and wealth shocks as well as other vulnerabilities such as poor health status, how did reduced spending affect loan payment delinquencies as an indicator of financial distress? In other words, were those who reduced spending able to avoid or reduce the likelihood of being financially distressed as indicated by payment arrears? Given the long-term effects of financial distress, it is important to determine as many personal attributes that can help to buffer shocks during periods of economic uncertainty.

The purpose of this study was to determine whether reduced spending actually helped families avoid financial distress during the Great Recession. We paid particular attention to the impact of shifting from a prerecession habit of spending more than income to spending less than income in 2008 at the height of the Great Recession. Specifically, we determined if this adjustment in spending influenced a reduced likelihood of being late on mortgage payments and payments on nonmortgage loans, a common measure of financial distress during this time (Hurd & Rohwedder, 2010). We tested this hypothesis while also accounting for spending habits before and during the Great Recession.

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The 2007–2009 panel data from the Federal Reserve Board's Survey of Consumer Finances (SCF) were used. The 2007 wave captured data on finances in 2006, whereas 2009 interviews focused on 2008 experiences. Observed willpower to spend less than income during the Great Recession was moderated by expectations of future income, financial risk tolerance, credit attitude, income uncertainty, health status, occupation changes including becoming unemployed, and industry changes. The usual demographic factors such as age, gender, education, race, and marital status, number of children, and income plus changes in marital status, the number of children, homeownership, income, income uncertainty, credit and risk attitudes, occupation, and industry of work were also included.

The contribution of this study will be knowing whether this adjustment behavior, which is typical of households during economic downturns, is enough to mitigate financial distress. Quantifying the impact of such coping strategies will provide evidence for financial educators and counselors who may want to use the information to educate their clients about good long-term financial management practices. Knowing the association between behavior changes under difficult circumstances and financial distress while accounting for factors such as industry of work, occupation, and health status can help educators and advisors work with consumers on how to avoid financial crises well in advance and during challenging periods. It will also help them identify the most vulnerable groups to target in their programs on surviving financial adversity to protect them from other consequences such as work absenteeism and health problems, which further exacerbate stressful financial circumstances (J. Kim & Garman, 2003; Scott, 2011).

Conceptual Framework

Self-control is always a struggle between willpower and desire, where consumers make intertemporal tradeoffs in decision making. The behavioral life cycle hypothesis (BLCH) developed by Shefrin and Thaler (1988) is useful in exploring self-control under different conditions. The BLCH incorporates self-control, mental accounting, and framing in the life cycle hypothesis of saving (Modigliani & Brumberg, 1954). Normally, spending increases with age and income up to a certain point. Self-control has associated costs where individuals sacrifice present consumption for future consumption, thus smoothing consumption over time. Those who have higher levels of self-control save in the present and the future.

Even in the absence of credit rationing, consumers have three mental financial accounts: current income, current assets, and future income (Shefrin & Thaler, 1988). Those who spend more than their income may lack enough willpower to commit current income for future consumption and therefore not see the need to postpone consumption. Temptation and instant gratification depend on immediate consumption resources. A planner and a doer have different utilities whereby the latter is concerned with maximizing current consumption, whereas the former will exercise self-control and not give into temptation in the short run to maximize long-run utility.

We determine whether the BLCH planner–doer hypothesis holds under these conditions in terms of predicting a lower likelihood of financial distress after the onset of the recession. Planners are considered those who were spending less than their current income before the Great Recession. The question in this study is, were they less likely to be financially distressed because they always exercised willpower in spending anyway? On the contrary, were those who reduced their spending during the recession avoiding becoming financially distressed or already distressed?

Although the BLCH suggests willpower and temptation are internal personal traits, external factors such as the Great Recession can increase willpower even with certainty that current budget constraints would be less limited in the future. Shefrin and Thaler (1988) use the analogy of expecting an inheritance or winning a lottery in the future to proxy willpower in controlled spending of current income. This study builds short-term and long-run budget constraints by incorporating present consumption opportunities of current income as well as accounting for expected levels of future income relative to current income, which may affect one's willpower.

Our key variables to test these BLCH self-control constructs are spending habits before and during the Great Recession, that is, spending more than current income and increased self-control for some resulting in spending less than current income in 2008 (2009 SCF panel). We include expectations of future income as well as income uncertainty and attitude toward using credit as moderators of willpower in spending control. We are interested in how these proxies are associated with financial distress indicated by loan payment arrears during this period. We expect those with increased

self-control in their spending relative to income and those expecting the same or less income in the future to be less likely to have this type of financial distress in 2008 because they would be focused on paying their bills with current income to avoid arrears.

Previous Research

Hurd and Rohwedder (2010) considered those who were unemployed, 2 months or more behind on mortgage payments, or with negative home equity to be financially distressed. They found that 73% of households in the American Life Panel had reduced their spending since November 2008. Only 8% expected to increase their spending, whereas about 20% of the expected to decrease spending over the next 6 months, 21.6% in the February 2009 wave, and 15.8% in the July 2009 wave expected to do the same. This expected decrease continued in subsequent rounds of the panel, among 12.7% of households in October 2009, 12% in January 2010, and 12.2% in April 2010. The decrease that began in mid-2009 coincides with when the Great Recession technically ended. Prior spending habits or linkages between spending habits and spending responses were not examined.

Higher levels of self-control have been associated with better financial outcomes such as lower spending, lower debt, saving, and retirement planning (Bertaut, Haliassos, & Reiter, 2009; Laibson, Repetto, & Tobacman, 1998; O'Curry, 2003). Ariely and Wertenbroch (2002) found higher overall life outcomes in university students with higher levels of self-control. McCarthy (2011) found behavioral traits such as self-control, planning, and patience influenced difficulties in bill payments and credit commitments among respondents of the Survey of Financial Capability and Expenditure in the United Kingdom and Ireland.

Haws, Bearden, and Nenkov (2012) found that those who had lower consumer spending self-control were more likely to make impulsive purchases and pay more for the same product. Bankruptcy, using payday loans, overindebtedness, and low or no savings has been observed as consequences of low spending control in another study, and stress and mental health problems were additional consequences (Bearden & Haws, 2012).

O'Neill, Prawitz, Sorhaindo, Kim, and Garman (2006) found that those with better health were less likely to be financially distressed and those less financial distressed had improved health over time. Financial distress was measured by the InCharge Financial Distress/Financial Well-Being Scale with eight different items measuring difficulty in monthly bill payment, living expenses, and personal finances. Using three waves of the Hispanic Established Population for Epidemiological Studies of the Elderly, Angel, Frisco, Angel, and Chiriboga (2003) found that those who reported poorer health status were more likely to have difficulties in monthly bill payments, and to not have enough money to make ends meet.

Chien and DeVaney (2001) and H. Kim and DeVaney (2001) examined the effects of credit attitude and socioeconomic factors on credit card and installment debt using the 1998 SCF. Both studies found that a more favorable general attitude toward credit was associated with higher outstanding debt. Thus, we accounted for credit attitude because our measure of financial distress was associated with loan repayments.

Hurd and Rohwedder (2010) found that more than 68% of households expected to reduce their spending because of expected reductions in future income. Whereas Hanna and Yuh (2013) found that lower-than-normal current income increased financial burdens for households in the 2010 SCF. Therefore, we account for future income as a moderator of willpower in spending control.

Hurd and Rohwedder (2010) also found that about 35% households expected to reduce their spending because of stock holding values. They found this response was because of increased pessimism about the economic outlook, which made them more financially conservative. We, therefore, accounted for this by including a measure of financial risk tolerance.

Occupation provides income and social status, which ultimately brings some level of financial security. For instance, using 1998, 2001, and 2004 waves of the SCF, DeVaney and Anong (2007) found that those in white collar occupations such as professional or managerial were twice as likely to be in upper income quintiles compared to those in blue collar occupations. In another study, respondents employed in financial, insurance, real estate, repair, and advertising industries were more likely to have adequate levels of subjective and comprehensive emergency saving funds

covering 3–6 months without income (Anong & DeVaney, 2010). Given this, it is important to also control the likely influence of one's occupation and industry as well as any changes that occurred during the Great Recession.

In addition, socioeconomic factors have been shown to predict financial distress. Younger households, Blacks, and those with lower income are more likely to be financially distressed (Hurd & Rohwedder, 2010; Lim, Heckman, Letkiewicz, & Montalto, 2014). Using the 1992–2010 waves of the SCF, Xiao and Yao (2014) found that younger households were more financially distressed. Gudmunson and Zuiker (2012) found that gender, race/ethnicity, family structure, parental economic status, and education predicted economic pressure. Hanna, Yuh, and Chatterjee (2012) found that homeownership, self-employment, being retired, and the number of children were positively associated with financial burden in the SCF. They used a ratio of total debt payments to after-tax income as a measure of financial burden. Hanna and Yuh (2013) found that the proportion of renter households with high financial obligation ratios increased from 2007 to 2010, but the proportion of homeowner households with high ratios decreased slightly due likely to shifts from ownership to renting during the period.

The literature that shows there are risk factors that predispose individuals and families to financial distress. However, there is clearly still a need to establish the extent to which adjustments to spending mitigates financial distress. To help address this gap, we tested the following hypotheses:

H1: Those spending more than income before the Great Recession were more likely to be financially distressed during the Great Recession compared to those who were in the habit of spending less than income while accounting for other known risk factors.

H2: Those who changed their spending habit to spending less than income during the Great Recession were less likely to be financially distressed during the Great Recession.

Method

Data and Sample

This study used the 2007–2009 panel data of the SCF sponsored by the Board of the Governors of the Federal Reserve System. The data include information on household balance sheets, pensions, household incomes, and certain demographic characteristics. During 2008 and 2009, a panel from the 2007 SCF was reinterviewed to capture the effects of the Great Recession (Bricker, Bucks, Kennickell, Mach, & Moore, 2012). Data from the 2007 wave included 2006 prerecession information, and the 2009 interviews collected 2008 data, which captured experiences at the height of the recession. Most of the 2009 interviews were completed between July and December of 2009. Taken together, the two waves of interviews provided a unique basis for measuring how families were affected. The panel contained 3,857 respondents who were all included in this study (Bricker et al., 2012).

The SCF uses multiple implications and creates five replicates to impute missing values. Repeated-imputation inferences (RII), a multiple imputation technique, is used to treat the imputation variability of missing data in the SCF. The RII averages out variability between five implicates and produces the best estimate for the missing values. Montalto and Sung (1996) provide a detailed procedural discussion and justification for using RII to address the presence of multiple implicates in the SCF. We used RII techniques to estimate scalar means for the continuous variables and also to estimate a binary logistic regression predicting our measure of financial distress.

Measures

Our binary financial distress indicator is derived from the question, "Now thinking of all the various loan or mortgage payments you made during the last year, were all the payments made the way they were scheduled, or were payments on any of the loans sometimes made later or missed?" Respondents who reported paying on time in 2007 but later reported in 2009 that they did not make payments on time in the previous year were coded "1" for becoming financially distressed during the Great Recession. This measure is consistent with Hurd and Rohwedder (2010) who considered a household financially distressed if they were behind on their mortgage payments for 2 months or more.

Self-control in 2007 and in 2009 was measured by two spending indicators derived from the question, "Over the past year, would you say that your (family's) spending exceeded your (family's) income, that it was about the same as your income, or that you spent less than your income?

(Spending should not include any investments you have made). If debts are being repaid on net, treat this as spending less than income". For each indicator, "1" denoted spending more than income and "0" spending either the same or less than income. A self-control adjustment dummy variable was created to depict a shift from being a spender in 2007 to becoming a saver in 2009 where spending was less than income.

The measurement and coding of all variables used in this study are shown in Table 1. Dummy variables for time-variant variables were also created. Occupation change captured shifts between the two periods from working in white collar positions to blue collar positions or to losing employment. For instance, a household head could have shifted occupation status from being in a managerial/professional position in 2007 to a technical/sales/services position, or other position (including production/craft/repair workers, operators, laborers, farmers, foresters, fishers), or, even more extreme, to not working in 2009. Original data codes were "1" for *managerial*, "2" for *technical*, "3" for *other*, and "4" for *not working*. If the 2009 occupation coding number was greater than the 2007 occupation code, occupation change was coded "1." These shifts were viewed as detrimental and expected to be positively associated with financial distress. Industry change only captured shifts from one industry to another with no assumption of detrimental change between industries.

Empirical Analysis

A binomial logistic regression predicting financial distress was estimated.

$$\text{Log}\left\{\frac{P(t)}{1-P(t)}\right\} = \alpha_i + \beta_i X_i + \varepsilon$$

where $P(t)$ is the probability α, is the constant or intercept of the model, and β_i are the coefficients for X_i, the explanatory variables (Allison, 1995). Two models were estimated. We only included spending habit prior to the Great Recession in the first model. In the second model, we adjusted for spending habit during the Great Recession and for the shift to spending less than income.

Several time-variant changes such as homeownership status change (3.91%) and health status change (less than 1%) had too few observations in the sample for meaningful analysis. In such instances, only the effect of the observed variable reported in 2009 was estimated. We tested for correlation and multicollinearity and found it not to be an issue. The variance inflation factors (VIF) were less than 3.0, and significant correlation coefficients were all less than .16.

Results

Summary Statistics

The weighted summary statistics presented in Table 2 show that 10.79% of our sample were, by our measure, financially distressed. Almost 20% of the respondents were spending more than income (spender) in 2007, and this slightly decreased to 18.43% in 2009. Spenders in 2007 who then reported spending less than their income in 2009 were 12.35% of the full sample.

Among respondents who are financially distressed, more than 22% reported spending more than their income in 2007 and 37% in 2009, a 15% increment. Only about 11% among those financially distressed switched from spending more than their income in 2007 to spending less than their income in 2009. Thirty percent reported having poor to fair health in 2009. More than half (51%) had no idea of their income in the following year, and about 20% were expecting higher income, whereas more than 45% were expecting the same income, and 35% were expecting less income in the next year. More than half (54%) of financially distressed respondents were not willing to take any financial risk, whereas about 12% were willing to take high financial risk for high returns. About 25% of respondents had a lower risk tolerance in 2009 than in 2007. About 21.5% of respondents who were financially distressed changed their occupation in a direction that was viewed as detrimental to financial security (DeVaney & Anong, 2007). In addition, 26% of respondents who are financially distressed changed their industry of employment between 2007 and 2009. Non-Whites, those who became single, those with additional children, renters in 2009, and those with reduced income were more represented among respondents who are financially distressed.

Among those who were not financially distressed, more than 19% were spending more than their income in 2007, which decreased to about 16% in 2009. Also, a higher proportion, 12.52%, of those who were not financially distressed had changed their spending habit from spending more than income in 2007 to spending less than income in 2009. Only

TABLE 1. Coding of Variables

Variables	Coding
Dependent variable	
Financial distress	1 if payments on loans, mortgages, were always on time before the Great Recession but behind during, 0 otherwise
Independent variables	
Spender in 2007	1 if spend more than income in 2007 wave, 0 otherwise
Spender in 2009	1 if spend more than income in 2009 wave, 0 otherwise
Change to saver in 2009	1 if spend more than income in 2007 and spend less than income in 2009, 0 otherwise
Controls	
Age of household head	Continuous in years
Sex of household head	1 if male, 0 otherwise
Years of education	Continuous in years
Race/ethnicity of household head	1 if non-White or Hispanic, 0 White
Marital status of household head	1 if neither married nor living with partner, 0 otherwise
Change to single in 2009	1 if became unmarried/without a partner in 2009, 0 otherwise
Number of children in 2009	Continuous variable
More children in 2009	1 if more kids in 2009, 0 otherwise
Renter in 2009	1 if does not own ranch/farm/mobile house/house/condo, 0 otherwise
Changed to renter in 2009	1 if changed to renter from 2007 to 2009, 0 otherwise
Income (in thousands)	Continuous variable
Income reduced in 2009.	1 if decrease in income, 0 otherwise
Health status	1 if excellent/good health, 0 fair/poor health
Income certainty	1 if good idea of next year income, 0 otherwise
Changed to income uncertainty	1 if changed to no idea of next year income, 0 otherwise
Attitude of credit use	
Positive	1 if buying things using credit is a good idea, 0 otherwise
Depends	1 if buying things using credit is sometimes good idea and sometimes not, 0 otherwise
Negative	1 if buying things using credit is a bad idea, 0 otherwise
Changed to less favorable attitude of credit use in 2009	1 if changed from favorable attitude to not favorable toward credit, 0 otherwise
Future income expectation	
Income goes up.	1 if expect higher income in the next year, 0 otherwise
Income goes down.	1 if expect lower income in the next year, 0 otherwise
Income remains the same.	1 if expect the same income in the next year, 0 otherwise
Willingness to take risk	
Substantial/high	1 if willing to take substantial/high risk, 0 otherwise
Above average	1 if willing to take above average risk, 0 otherwise
No risk-taking	1 if not willing to take any risk, 0 otherwise
Decreased risk-taking	1 if decreased risk taking in 2009, 0 otherwise

(Continued)

TABLE 1. Coding of Variables *(Continued)*

Variables	Coding
Occupation of household head	
Managerial	1 if in managerial/professional, 0 otherwise
Technical	1 if in technical/sales/services, 0 otherwise
Other	1 if in other (production-related), 0 otherwise
Not working	1 if not working, 0 otherwise
Detrimental shift in occupation	1 if change in occupation from managerial/profession to technical, sales, services or others, or to not working, 0 otherwise
Industry of household head	
Mining, construction related	1 if work in mining, construction, and manufacturing, 0 otherwise
Transportation, communications	1 if work in transportation, communications, utilities and sanitary services, wholesale trade, finance, insurance, and real state, 0 otherwise.
Agriculture, retail services	1 if work in agriculture, retail trade, services, and public administration, 0 otherwise
Change in industry	1 if industry of employment changed between 2007 and 2009, 0 otherwise

about 16% were expecting higher income, whereas 44% were expecting the same income in the next year. They were also generally much healthier than those who were financially distressed.

About 11% of those who were not financially distressed were willing to take high financial risk, whereas about 45% of such households were not willing to take any financial risk. Between the two surveys, about 25% had decreased their risk tolerance in 2009. Only 15.12% of those not financially distressed shifted from white collar to blue collar occupations or became unemployed. This was compared to 21.5% among the financially distressed. Those whose industry of employment changed were also less among those not financially distressed.

Spending Behavior Change and Financial Distress During the Great Recession

The results of the two logit models are presented in Table 3. In first examining Model 1, prerecession spending habit (*Spender in 2007*) was not a significant predictor of financial distress. Although not significant, the positive coefficient suggests that those who were spending more than income prior to the Great Recession were potentially more likely to be financially distressed.

The effects of other controlled factors in Model 1 are interesting. Age, race, and income were significant factors but marital status and the number of children were not. The odds of financial distress increased with age up to 48.5 years and decreased for those older. The odds of non-Whites being financially distressed was 1.67 times that of Whites. The level of current income was highly significant and negatively related to being financially distressed as expected but reductions in income during the recession did not have a significant effect.

Health was also a strong predictor. The odds of being financially distressed were 36% lower for those in excellent or good health compared those in fair or poor health. The odds of becoming late on loan payments for those who had a good idea of their future income in the 2009 wave were 25% lower that for those who didn't know. The odds were also 25% lower for those who thought using credit cards is sometimes a good idea and sometimes a bad idea compared to those who thought it is always a good idea. This was not surprising given that our measure for financial distress was tied to mortgage and nonmortgage loan payment delinquency.

Income expectation was not significant. Those who had above average financial risk tolerance had 23% lower odds of being financially distressed compared to those who had substantial or high financial risk tolerance. Shifting from white collar to blue collar occupations or becoming unemployed increased the odds of being financially distressed by as much as 1.5 times. The odds of being financially distressed for those working in agriculture, retail, and service

TABLE 2. Summary Statistics of the Variables

Variable	Full Sample $N = 3,857$ % or M (SD)	Financially Distressed in 2009 $N = 3,514$ % or M (SD)	No Financial Distress in 2009 $N = 343$ % or M (SD)
Financial distress in 2009	10.79	100	—
Spending habit in 2007			
Spender in 2007	19.54	22.24	19.22
Nonspender in 2007	80.46	77.76	80.78
Spending habit in 2009			
Spender in 2009	18.43	36.93	16.19
Nonspender in 2009	81.57	63.07	83.81
Changed to saver in 2009			
Change to saver	12.35	10.94	12.52
No change	87.65	89.06	87.48
Age in 2009	52.21 (17.10)	45.01 (16.52)	52.31 (18.21)
Age square of 2009	2,932 (1,879)	2,188.55 (1,702)	3,022.3 (1,901)
Sex of household head			
Men	72.67	75.17	72.37
Women	27.33	24.83	27.63
Years of education (continuous)	13.37 (2.75)	12.94 (2.89)	13.43 (2.51)
Race/ethnicity			
Non-White	29.69	46.91	27.61
White	70.31	53.09	72.39
Marital status in 2009			
Not married/no partner	46.07	43.69	46.36
Married/living with partner	53.93	56.31	53.64
Change in marital status in 2009			
No change in marital status	91.75	87.86	92.22
Change to single	8.25	12.14	7.78
Number of children in 2009 (continuous)	.85 (1.17)	1.20 (1.18)	0.81 (1.16)
Change in children number			
No change	89.31	87.34	89.55
Increase in children	10.69	12.66	10.45
Homeownership status in 2009			
Renters	29.66	34.17	29.11
Home owners	70.34	65.83	70.89
Homeownership change			
No change (homeowners)	96.09	94.76	96.26
Change to renters	3.91	5.24	3.74
Income in $10,000s	8.11 (23.03)	5.88 (24.01)	8.38 (21.56)
Income change			
No change in income	61.73	57.89	62.20
Decrease in income	38.72	42.11	37.80
Health status			
Excellent/good health	76.10	69.97	76.84
Fair/poor health	23.90	30.03	23.16

(Continued)

TABLE 2. Summary Statistics of the Variables *(Continued)*

Variable	Full Sample $N = 3,857$ % or M (SD)	Financially Distressed in 2009 $N = 3,514$ % or M (SD)	No Financial Distress in 2009 $N = 343$ % or M (SD)
Income uncertainty			
Good idea of next year income (security)	64.11	48.99	65.93
No idea of next year income (Insecurity)	35.89	51.01	34.07
Change in income uncertainty			
No change	80.78	72.35	81.80
Changed to income uncertainty in 2009	19.22	27.65	18.20
Attitude of credit use			
Positive	27.15	30.15	26.79
Depends	32.53	29.14	32.94
Negative	40.32	40.71	40.28
Change in the attitude of credit attitude			
No change	71.97	69.96	72.21
Changed to less favorable attitude	28.93	30.04	27.79
Income expectation for next year in 2009			
Expect higher income	15.97	19.80	15.51
Expect lower income	39.76	35.09	40.33
Expect the same income	44.27	45.11	44.16
Willingness to take risk in 2009			
Substantial/high risk	14.70	17.47	14.37
Above average risk	39.08	28.79	40.33
No risk taking	46.21	53.74	45.30
Change in risk taking in 2009			
No change	74.10	70.16	74.58
Decease in risk taking in 2009	25.90	29.84	25.42
Occupation in 2009			
Managerial/professional	41.08	31.33	42.04
Technical/sales	16.26	21.47	15.75
Other	13.77	25.09	12.67
Not working	28.88	22.11	29.54
Occupation change			
No change	84.20	78.53	84.88
Detrimental shift in occupation status	15.80	21.47	15.12
Industry in 2009			
Mining, construction, and so forth	15.52	19.75	15.01
Transportation, communication, and so forth	50.84	55.13	50.32
Agriculture, retail, and so forth	33.64	25.12	34.67
Industry change			
No change	78.81	74.33	79.36
Changed from one to another	21.19	25.67	20.64

Note. All differences are significant at 1% level (p value $< .01$). All chi-square test are significant at 1% level (p value $< .01$).

TABLE 3. Logistic Regression Results on Financial Distress in the 2007–2009 Survey of Consumer Finances ($N = 3,857$)

	Model 1		Model 2	
Variables	**Coefficient**	**Odds Ratio**	**Coefficient**	**Odds Ratio**
Intercept	−2.893***	0.055	−3.126***	0.044
Spender in 2007 (ref. nonspender)	0.198	1.219	−0.375	0.688
Spender in 2009 (ref. nonspender)			1.085***	2.959
Change to saver in 2009			0.657*	1.929
Age in 2009	0.086**	1.089	0.078**	1.082
Age square	−0.001***	0.999	−0.001**	0.999
Women head of household (ref. men)	0.055	1.056	0.039	1.040
Years of education	−0.028	0.973	−0.032	0.969
Non-White (ref. White)	0.513***	1.671	0.503***	1.654
Married/with partner (ref. single)	0.105	1.111	0.123	1.131
Change to single (ref. no change in status)	0.304	1.355	0.361	1.434
Number of children in 2009	0.070	1.072	0.061	1.063
Increase in children in 2009 (ref. no change)	−0.076	0.927	−0.088	0.915
Renter in 2009 (ref. homeowner)	−0.206	0.813	−0.176	0.839
Income ($10K) in 2009	−0.018**	0.982	−0.017**	0.983
Income decrease in 2009 (ref. no change)	0.041	1.042	−0.043	0.958
Excellent/good health (ref. fair/poor health)	−0.468**	0.626	−0.440**	0.644
Income certainty (ref. income uncertainty)	−0.278†	0.757	−0.171	0.843
Changed to income uncertainty (ref. no change)	0.095	1.100	0.143	1.154
Credit attitude (ref. positive attitude)				
Depends	−0.294†	0.746	−0.295†	0.745
Negative	−0.238	0.788	−0.197	0.821
Changed to less favorable (ref. no change)	0.163	1.178	0.138	1.148
Income expectation for next year (ref. higher income)				
Lower income	−0.177	0.837	−0.254	0.776
Same income	−0.058	0.944	−0.042	0.958
Willingness to take risk (ref. substantial/high)				
Above average	−0.395*	0.673	−0.334†	0.716
Not willing to take risk	0.084	1.088	0.148	1.160
Decrease in risk taking in 2009	0.147	1.159	0.122	1.129
†Occupation shift (ref. no change)	0.409*	1.505	0.435*	1.545
Industry of employment (ref. communication, transportation, etc.)				
Agriculture, retail, services	0.369*	1.446	0.426*	1.531
Manufacture, construction, and so forth	0.381†	1.464	0.424†	1.528
Change in industry (ref. no change)	−0.005	0.995	−0.029	0.971
Percent concordant	77.04		75.00	
Somers' D	0.55		0.51	

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

industries were 1.44 times the odds for those working in communication, transportation, utilities, wholesale trade, finance, insurance, and real estate industries.

Turning to Model 2, prerecession spending habit still did not seem to affect our measure of financial distress, and in fact, the direction of the effect was opposite of what was expected and of what we saw in Model 1. It was insignificant in both models; thus, the first hypothesis was not supported.

Second, we had hypothesized that those who began to spend less than income during the recession would have lower odds of being financially distressed. The indicator, *Change to Saver in 2009*, was associated with twice the odds of being financially distressed compared to those who did not make this adjustment in spending. This was opposite to what we expected. Although the indicator was significant, the second hypothesis was not supported. However, spending more than income during the recession, *Spender in 2009*, was associated with three times the odds of being financially distressed in terms of loan repayment compared to those who did not spend more than income.

Among the controls, the odds of non-Whites being financially distressed during the Great Recession was 1.65 times when accounting for spending habit in 2009 and increased spending control during the recession. Perceived income uncertainty and expectations of future income were not significantly associated with financial distress. Health was again a strong predictor. Those in excellent or good health were less likely to be financially distressed even when accounting for spending habits. Their odds were 37% lower than for those in poor or fair health.

Those who felt that it was sometimes a good idea and other times a bad idea to use credit had 25% lower odds to be financially distressed compared to those who favored using credit in all situations. Those with above average financial risk attitude were less likely to be financially distressed. The odds of becoming financially distressed was 29% lower for those with above average financial risk tolerance compared to those with substantial/high financial risk tolerance.

The odds of being financially distressed for those who switched from white collar to blue collar occupation were 1.54 times, whereas the odds of being financially distressed for those working in agriculture, retail, and service industries were 1.53 times the odds for those working in communication, transportation, utilities, and wholesale trade, finance, insurance, and real estate industries.

Discussion

The purpose of this study was to determine the impact of self-control measured by spending relative to income on the likelihood of becoming financially distressed during the Great Recession. Financial distress was indicated by being late in making mortgage and nonmortgage loan payments. Surprisingly, prerecession spending habit was not a significant predictor of financial distress during the recession. It is unexpected that those who typically spent less than income would have enough savings to buffer them (Anong & Fisher, 2013; Baek & DeVaney, 2010).

We found that those who reported being prerecession spenders and then said they spent less than income during the recession were twice as likely to have become financially distressed compared to those who did not make this adjustment. Households reportedly cut spending and increased their rate of savings in response to income decline during the Great Recession (Brown, Haughwout, Lee, & van der Klaawu, 2013). Descriptive statistics in our study suggest that those who did this were disproportionately less likely to be among those we identified as financially distressed. Results of the regression estimation indicate that this coping mechanism may not have been enough for previous spenders to avoid financial distress as measured by delayed or nonpayment of mortgage and non-mortgage loans during the Great Recession. It is important to note that the housing crisis and credit crunch at the time may be the reason why shifting to spending less than income at this period was not helping people avoid difficulty in loan payments.

Interestingly, those who reported that they spent more than income in 2009 were three times as likely to be financially distressed in the same period compared to those who spent less than income in 2009. This is after controlling for income reduction, for expected future income, and for current income. Those spending more than income were doing so by accessing loans or lines of credit which is another survival strategy that is employed during economic downturns especially if savings are exhausted or nonexistent (Baek & DeVaney, 2010). Because our financial distress measure was tied to loans, this could explain this close association.

We also accounted for more than the usual socioeconomic characteristics by including health status, credit attitudes, income uncertainty, occupation, and industry of employment. The effect of health status outweighed any influence from reduced income or income uncertainty during the recession, showing that people in poor health are more vulnerable. Health status has been shown to influence spending and saving behavior (Fisher & Anong, 2013). Given the strong influence of overspending, it could be that out-of-pocket costs associated with poor health place a financial strain especially during weak economic conditions characterized by job and income insecurity as was demonstrated in our sample.

Implications

Educators and financial counselors should continue to stress the importance of adopting long-term good spending habits especially among young people given the age effect also shown in our study. Educators and financial counselors might also want to develop tools to encourage and help those who do adjust to good financial practices because of economic uncertainty to sustain their new spending habits for the long-term even in good times. Financial advisors and educators need to also be mindful that it is not enough to simply push for spending within means without clearly factoring in the complex situations their clients face. Other strategies to meet necessary expenses such as for health must be emphasized to help consumers avoid turning to debt to cope with basic living expenses. Planners may target those who are in blue collar occupations and also in industries with less job security where financial distress appears to be more prevalent.

The strength of this study is that it relies on panel data. However, there were some limitations. The design of the panel relies on self-reported respondent recall of information on experiences in the previous year in both 2007 and 2009 collection rounds. Data collected on shorter rounds such as monthly like the Hurd and Rohwedder (2010) study could be more insightful of day-to-day management and financial adjustments, which are probably fluid during fluctuant economic conditions and different shocks experienced throughout the period. Researchers need to further investigate the "stickiness" of spending adjustments after recessions. Future research could focus on which individual traits as well as financial policies and practices such as unemployment benefits and loan modifications help sustain positive behavior change. Also, there is need for deeper investigation of the link between health and financial well-being because health is considered a special type of human capital that may influence time spent earning wages.

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