The Role of Credit Cards for Unemployed Households in the Great Recession[☆]

J. Michael Collins[1], Kathryn Edwards[1], Maximilian Schmeiser,[1]

Abstract

Credit cards and other forms of unsecured debt can be borrowed without underwriting earnings. Forward looking creditworthy households can use unsecured debt during unemployment to support consumption during an earnings shock. This paper uses the Survey of Income and Program Participation (SIPP) data to estimate consumer debt levels of households before, during and after unemployment spells across economic expansions and contractions from 1995 to 2012, including recessionary periods with credit contractions. The data indicate a consistent pattern of households increasing use of unsecured credit as they transition into unemployment, and continue to have elevated levels of debt in the future. These effects are larger for the households in the lower half of the wealth distribution, and appear larger overall for the 2009 recession compared to prior periods.

Keywords: Job Markets, Credit Markets, Liquidity.

1. Introduction

It is a prediction of both macroeconomic and microeconomic theory which has borne out in empirical analyses that consumption is less volatile than income (Meghir and Pistaferri, 2011; Gorbachev, 2011) and that, following an income shock, consumption falls less than income (Dynarski et al., 1997). This smoothing of consumption is possible due to savings, asset liquidation,

[☆]FDIC Consumer Research Conference.

[1]Associate Professor, University of Wisconsin-Madison La Follette School of Public Affairs and School of Human Ecology, 4208 Nicholas Hall, jmcollins@wisc.edu

[2]PhD Candidate, University of Wisconsin-Madison Department of Economics, kaedwards@wisc.edu

[3]Economist, Federal Reserve Board, max.schmeiser@frb.gov

other sources of income (Gruber, 1994; Cullen and Gruber, 2000), as well as borrowing. Indeed, the ability to borrow during income shocks is key to preventing consumption, and by extension, welfare losses (Crossley and Low, 2014).

Credit card debt is unique among lines of credit, signature loans, payday advances, title loans, or home equity loans in that it does not require an asset nor contemporaneous underwriting. It is both unsecured and based on prior risk profiles. Importantly, access to unsecured credit is not constant over time or across households in the asset distribution—changes in the number of card accounts, number of account holders, and average limits have meant that households at the margin of credit worthiness have had varying access to credit. The credit expansion of the early 2000s was marked by a dramatic increase in the number of credit card accounts in the United States, rising from 365 billion in 1999 to a peak of 496 billion in 2008. The increase in the number of accounts was not only the result of households opening additional accounts, but new households without prior access to credit opening accounts for the first time. At the same time, the use of credit increased, as credit card debt as a percentage of household income increased (Evans and Schmalensee, 2005; Gross and Souleles, 2001; Lyons, 2003).

Growth in credit card debt among low-income households is of particular interest, as these households may not have any assets to borrow against or liquidate. Lender underwriting for consumer loans is less intensive than for other loans, and a credit card approval provides ongoing access to revolving credit even if the borrower later experiences an income shock. Credit cards may be a critical instrument for an otherwise financially fragile households facing an income shock. Expanding credit markets in the 2000s offered low-income, low-asset but creditworthy households an opportunity to increase the use of unsecured debt during unemployment spells. prior research finds that it is households with high enough income to secure a credit card, but without other assets or liquidity—who increase their unsecured debt holdings during unemployment spells (Sullivan, 2008).

Yet, the number of credit card accounts fell to 380 billion by the second quarter of 2010, declining in 24 months by the amount it had grown the eight years prior, as the unemployment rate spiked from 5.0 to 9.8%. This phenomenon prompts several questions about the role of consumer credit during unemployment spells during the late 2000s. Do low wealth households differentially rely on credit during unemployment? Were low-income, low-asset households more adversely harmed by the inability to borrow during

unemployment spells which occurred during the credit contraction from 2008 to 2010?

In this paper, we use the Surveys of Income and Program Participation (SIPP) to study household unsecured debt levels as households transition into and out of unemployment spells. The contribution of this study is to expand on Sullivan's findings by performing a similar study of the response of unsecured debt to unemployment, but comparing results between periods of economic and credit expansions and contractions. We also move beyond documenting the incidence of debt increases by asset and income groups during unemployment and measure debt after unemployment. Unsecured debt incurs high interest, fees, and could affect future credit access and cause long-run losses (Blundell and Pistaferri, 2003). By examining post hoc the households which incurred debt, we can begin to trace the consequences of unsecured borrowing during unemployment, which research has shown is a predictor of default (Agarwal and Liu, 2003).

2. Data and Methods

The SIPP is a longitudinal study of American households that offers detailed demographic and economic information on respondents. Individuals and their household members are followed for one panel and are interviewed every four months for the length of the panel, which can vary from 3-6 years. Each interview, or wave, covers the four-month window and consists of a core questionnaire and rotating topical module. The Assets and Liabilities (AL) topical module occurs on an annual basis and includes questions on secured debt (mortgages, car loans, home equity lines of credit), unsecured debt (credit card debt, student loans, medical bills, and unsecured loans from private institutions), composition of asset holdings, savings, and net wealth. However, SIPP unsecured debt estimates might be a lower bound as credit card debt levels are under reported in other surveys (Zinman, 2009).

For our analysis, we combined the four most recent SIPP panels (1996, 2001, 2004, 2008) and constructed an analytical sample of working-age (20-62 years old) heads of household with strong labor force attachment. Sample size, by year and survey wave, is presented in Table 8. We divided the first 9 waves of each panel into three parts—T1 (months 1-12), T2 (months 13-24), and T3 (months 25-36). The AL occurs in the last wave of each section.[4]

[4]The 1996 and 2001 SIPP panels AL modules occur in waves 3, 6 and 9. The 2004

To remain in our sample, heads must report earnings for each month in T1 and T3. We test the effect of a possible employment spell in T2 on debt measured at the end of T2 and T3.

Table 1 shows the unemployment rate in the SIPP for our combined panel sample, and what share of the unemployed come from each panel, as well as each asset group in each panel. Unemployment in our analysis is not concentrated in a single year or part of the asset distribution. Overall, 3.5% of SIPP observations in this dataset experience unemployment in T2 (column 1). 3.5% unemployment rate is lower than the national observed rate over this time period, an in particular during the 2008 pane. However, this difference is expected given the employment constraint in T1 and T3. Each panel's share of this 3.5% is roughly 29%, though half that in 2004 (column 2). Throughout the analysis, we focus on three subgroups of asset holders, divided by the distribution of wealth in the first period—low (1st-3rd deciles), middle (4th-6th deciles), and high wealth (7th-10th deciles). Deciles are determined within each panel, but decile groupings are combined across panels. Median assets were $8,800, $75,000, and $280,000 for the low, middle, and high wealth groups, respectively. Each panel's spells are more concentrated in the lower categories, relative to the top, but this does not vary much across panels (columns 3-6).

Merged on to the individual longitudinal information in the SIPP is state-by-quarter information on local credit markets from the Federal Reserve Bank of New York/Equifax Consumer Credit Panel (CCP), a 5 percent random sample of active credit files in the United States. The CCP is a panel dataset that begins in the first quarter of 1999 and is updated quarterly to account for deaths, credit files becoming inactive, and newly created credit files. We use state-by-quarter averages of credit indicators; this allows for market-level controls in variations in access to credit and strength of credit markets, measured by credit card inquiries, credit limits and risk scores. Figure 1 shows the variation in the unemployment rate, total number of credit card accounts, and survey windows for the four SIPP panels.

We estimate the effect of a temporary unemployment spell on unsecured debt levels, in the following generalized specification:

SIPP panel AL modules occur in waves 3 and 6, but does not have a third AL module. The 2008 SIPP panel AL modules occur in waves 4, 7, and 10. For the 2008 panel, we ignored the first wave, to create parallel timing.

$$\Delta Y_i = \alpha + \beta(U_i) + \boldsymbol{\gamma X_i} + \lambda_s + \tau_t + \epsilon_i \quad (1)$$

The dependent variable is ΔY, which we define as the change in unsecured debt between either the first and second time periods or the first and third time periods. The measure of consumer debt in the SIPP includes credit cards, consumer debt, signature loans, installment loans, medical and other collections as well as student loans. It is a self-reported measure, as part of a larger set of questions on assets and debt. We label this as consumer debt, and hypothesize much of this is credit card debt since lenders would be unlikely to extend other forms of debt to households experiencing unemployment. However, it is important to recognize some of what maybe reported in this measure is collections—that is unpaid bills and expenses that revert into a liability. How well people report collections as consumer debt is unclear, however, and we suspect that mainly people report on actual credit extended and owed, rather than broader liabilities. All debt is expressed in 2011 dollars, adjusted for the consumer price index for all urban consumers (CPI-UX).

U is a binary indicator equaling one if individual i experienced an unemployment spell in T2 that was both preceded and followed by steady employment in T1 and T3. β is the coefficient of interest—it is the estimated effect of the temporary unemployment spell on the change in debt, relative to those who remain employed. $\boldsymbol{X}$ is a vectore of individual covariates, including race, educational attainment, marital status, family size, change in marital status or family size, highest quarterly wage in the first period, a cubic in age, an indicator variable for individuals who had high debt in the first period, the wealth groups previously described and, if unemployed, the potential weekly unemployment insurance benefit. To this, we also add state (λ) and year (τ) dummies.

Equation 1 does not directly control for access to credit, or credit market fluctuations, outside of the state and year controls which could capture trends. If periods of high unemployment are at all correlated with credit markets, which we know is true in the most recent recession, the results could be biased. Credit measures from the CCP allow us to control for this directly:

$$\Delta Y_i = \alpha + \beta(U_i) + \boldsymbol{\gamma X_i} + \boldsymbol{\rho Credit_s} + \lambda_s + \tau_t + \epsilon_i \quad (2)$$

Equation (2) incorporates ρ and the vector of state-by-quarter CCP measures of credit, mean number of inquiries, average credit limit, average credit risk score, and total balances unpaid, as well as state bankruptcy exemption policy variables—an indicator if the state's exemption is lower than the federal exemption, or if the exemption is more than twice the federal exemption.

The sample means of the dependent variables and covariates are presented in Table 2. As noted previously, 3.5% of the sample experiences an unemployment spell in the second time period. In general, debt is falling for our sample, between both the first and second periods (T1-T2) and the first and third periods (T1-T3). Differences are much smaller for the unemployed. The unemployed also have lower educational attainment, in addition to being slightly younger, with lower rates of marriage, lower average wages, and higher shares of individuals in the bottom of the wealth distribution. State-level credit access and treatment of assets are similar between those who did and did not experience a temporary unemployment spell, as expected.

3. Results

Results from equation 1 when ΔY is the difference in unsecured debt between the first and second time period is presented in column 1 of Table 3. Unemployment has a positive effect on debt levels, meaning that the change in debt between the two time periods was larger if the individual had experience an unemployment spell in interim, relative to those who did not. The following two columns show the results from equation 2 when the state level credit measures are added.[5] The estimate of β is large and consistent—\$1,600 - \$2,800. This is the most direct measure of borrowing during unemployment. As a reference, average monthly earnings in the first period were \$4,300. Further, the average calculated unemployment insurance benefit for those who were unemployed was \$250. The increase in debt is roughly equivalent to two-thirds of a month's earnings, or 8-11 weeks of UI benefits.

The final three columns of Table 3 repeat the specifications of the first three, but when the dependent variable is the change in debt over the course of the observation window, from T1 to T3. By sample design, this is after the

[5]The CCP data are only availabe from 1999, meaning that the 1996 panel observations are dropped from the sample in these specifications. Columns 1 and 4 are not the same sample for comparison.

unemployed individuals have returned to work for at least 12 months. The longer-term debt increase associated with the unemployment spell is larger—$2,800 - $3,500. To the extent which households pay off unemployment debt, we would expect these estimates to be smaller or near zero. Larger coefficients suggest that the debt incurred during an unemployment spell is not quickly reduced.

The results in Table 3 are the sample average of the effect of unemployment. For a more detailed analysis, we alter our specification:

$$\Delta Y_i = \alpha + \boldsymbol{\beta U_i} + \boldsymbol{\gamma X_i} + \boldsymbol{\rho Credit_s} + \lambda_s + \tau_t + \epsilon_i \tag{3}$$

$\boldsymbol{U}$ is a 4x1 vector of binary variables which indicate during which panel an individual became unemployed. Dividing the variable in this way allows for a direct comparison of unemployment across credit and economic market fluctuations. The results from equation 3 are shown in Table 4; only coefficient estimates of $\boldsymbol{\beta}$ are shown for parsimony in presentation.

The vector coefficients offer several insights. First, the increase in debt during an unemployment spell is limited to those panels which coincide with a recession. In the 1996 and 2004 panels, the estimate of the unemployment coefficient is negative and imprecise. In 2001 and 2008, however, the estimates are both positive. Second, the increase in debt during unemployment spells is twice as large in the 2008 panel than it was in the 2001 panel, nearing $6000. Again as a reference, monthly earnings in the first period of that panel was $4,500 and average potential UI benefits were $305. This coefficient represents an increase in debt that is more than a month's earnings, or 19 weeks of UI benefits.

In addition to looking at the effect of unemployment across time periods, we also look across subgroups. In Table 5, we redefine $\boldsymbol{U}$ as a 3x1 vector of the three wealth groupings—low, middle, and high—to determine not only how unemployment borrowing changes over time, but also how it varies with pre-unemployment wealth levels. Unlike in Table 4, there is no clear or consistent pattern or insight from this division of $\boldsymbol{U}$. Although all the estimates are positive, they are not statistically different from zero in most cases. It is interesting that the size of the estimates do not appear to follow the monotonic increase in wealth levels that each group represents, but it is not possible to say more without precision. In Table 6, we redefine $\boldsymbol{U}$ as a 4x1 vector of race and ethnicities. Access to credit, as well as borrowing behavior, may vary by racial and ethnic groups. Our results suggest this might

be the case; increases in unsecured debt immediately after unemployment appears to be concentrated among white individuals. Longer-term debt accruals after unemployment are quite large among Hispanic individuals. To address sample size concerns, we attempted grouping the non-white racial and ethnic groups into a single category, but there is still not a consistent estimate of the effect of unemployment on debt for non-white individuals, even in that amalgamated grouping.

Finally, in Table 7, we expand $\boldsymbol{U}$ to a 9x1 vector, representing unemployment of each asset group in each panel. Again in 1996 and 2004, the coefficient on unemployment is negative, or near-zero, for every asset group. The increases in debt in 2001 are spread among the asset groups, though driven by the middle, in line with prior findings that unemployment unsecured borrowing is more common among those with less wealth but with access to credit. What is surprising in 2008, however, is the size of the unemployment coefficients for the bottom half of the wealth distribution and how large the effect is sustained into the final time period. Low-wealth unemployment coefficient is associated with a $5,000 increase in unsecured debt, which remains at $4,000 after 12 months of reemployment. For the middle-wealth individuals, the coefficients are quite large—$10,000 and $7,000, respectively. Not only are households in the 2008 panel not constrained by the tightening of the credit market, they borrow large amounts.

4. Conclusion

The SIPP sample provides a snapshot of households over three-year windows. While the sub-sample in the SIPP that experiences unemployment and returns to employment is not large in any given year, the ability to measure changes in debt over time is useful to understand how households accumulate consumer debt when faced with an income shock. Households experiencing any unemployment spell appear to use more consumer debt. On average, unemployed households appear to borrow about $3,000 in additional debt, though this varies within the sample by panel. Further, after reemployment, unemployment-incurred debt does not decline quickly, remaining high one year after the spell, suggesting that the debt burden of unemployment borrowing could be long-term.

We find that, in terms of borrowing by overall asset (or wealth) levels, it appears the lower and middle wealth groups borrow more, both in absolute dollars, and relative to their smaller wealth and income. The increase in

unsecured debt that occurs following an income shock suggests that households in the bottom half of the wealth distribution have insufficient savings, can not draw on other forms of borrowing, or a combination of both. Notably, this behavior is driven by borrowing among white individuals. There is some indication that non-white households increase debt, but this is not consistently estimated, meaning they borrow less, or have a reduced ability to borrow, relative to white individuals.

The main finding of this analysis is that unemployed households appear to borrow more, not less, in recessionary periods, and in the 2009 recession in particular, despite a retraction of credit which occurred at that time. Borrowing despite a credit retraction is likely due to two reasons. First, to the extent households are using credit cards, lenders may have extended credit limits before the recession based on households pre-unemployment income. As a result, households could borrow based on prior credit approvals. Second, some of what respondents may report in the SIPP for consumer debt may be medical collections, past due bills, student loans and installment loans, all of which increased in the 2008 recession.

In general, borrowing more during a recession could occur for a number of reasons. It might be that the ability to draw on other resources—whether other types of institutional lending, or informal family assistance, such as the labor supply of a spouse or financial support from family—are reduced during downturns. It is important to remember, however, that the estimates presented in this analysis are relative to individuals who do not experience a spell, who could be decreasing their unsecured debt during the economic contraction. Unemployment spells in recessions may have larger effects on the change in debt in our analysis because employed individuals are not increasing, or are actively decreasing, debt. It is not in the scope of this analysis to determine which of these explanations is occurring.

Credit markets offer households an important mechanism to smooth consumption during unemployment. Consumer credit is often subject to close scrutiny and often tightening regulations during economic downturns. To the extent households rely on debt to manage income shocks, the timing of credit contractions and more zealous regulatory oversight may reduce consumer wellbeing.

Agarwal, S., Liu, C., 2003. Determinants of credit card delinquency and bankruptcy: Macroeconomic factors. Journal of Economics and Finance 27 (1), 75–84.

Blundell, R., Pistaferri, L., 2003. Income volatility and household consumption: The impact of food assistance programs. Journal of Human resources, 1032–1050.

Crossley, T. F., Low, H. W., 2014. Job loss, credit constraints, and consumption growth. Review of Economics and Statistics 96 (5), 876–884.

Cullen, J. B., Gruber, J., 2000. Does unemployment insurance crowd out spousal labor supply? Journal of labor Economics 18 (3), 546–572.

Dynarski, S., Gruber, J., Moffitt, R. A., Burtless, G., 1997. Can families smooth variable earnings? Brookings Papers on Economic Activity, 229–303.

Evans, D. S., Schmalensee, R., 2005. Paying with plastic: the digital revolution in buying and borrowing. Mit Press.

Gorbachev, O., 2011. Did household consumption become more volatile? The American Economic Review, 2248–2270.

Gross, D. B., Souleles, N. S., 2001. Do liquidity constraints and interest rates matter for consumer behavior? evidence from credit card data. Tech. rep., National bureau of economic research.

Gruber, J., 1994. The consumption smoothing benefits of unemployment insurance. Tech. rep., National Bureau of Economic Research.

Lyons, A. C., 2003. How credit access has changed over time for us households. The Journal of Consumer Affairs, 231–255.

Meghir, C., Pistaferri, L., 2011. Earnings, consumption and life cycle choices. Handbook of Labor Economics 4, 773–854.

Sullivan, J. X., 2008. Borrowing during unemployment unsecured debt as a safety net. Journal of human resources 43 (2), 383–412.

Zinman, J., 2009. Where is the missing credit card debt? clues and implications. Review of Income and Wealth 55 (2), 249–265.

5. Tables and Figures

Figure 1: *Unemployment Rate, Number of Credit Card Accounts, and SIPP Panel Asset and Liability Survey Windows, 1996-2013*

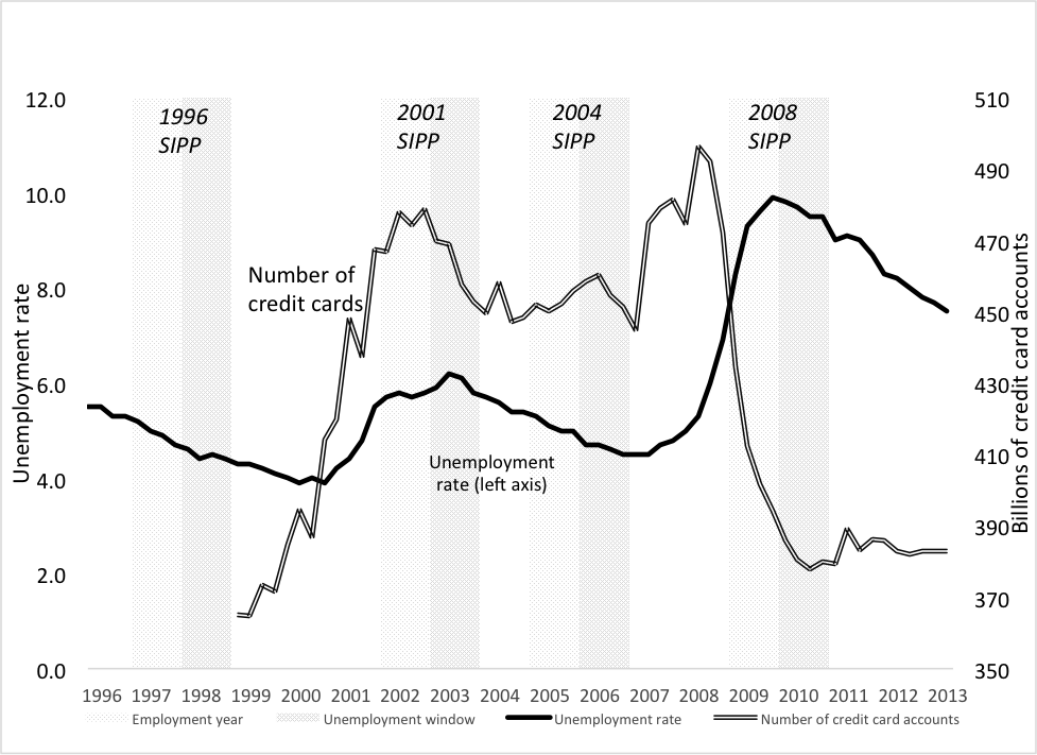

Table 1: Unemployment Rate in Sample, by Panel and Wealth Group

	(1) mean/sd	(2) mean/sd	(3) mean/sd	(4) mean/sd	(5) mean/sd	(6) mean/sd
Unemployed	0.0345					
	(0.18)					
Unemployed in 1996 Panel		0.270				
		(0.44)				
Unemployed in 2001 Panel		0.299				
		(0.46)				
Unemployed in 2004 Panel		0.134				
		(0.34)				
Unemployed in 2008 Panel		0.297				
		(0.46)				
Low wealth, Unemp 1996			0.451			
			(0.50)			
Middle wealth, Unemp 1996			0.313			
			(0.46)			
High wealth, Unemp 1996			0.236			
			(0.43)			
Low wealth, Unemp 2001				0.397		
				(0.49)		
Middle wealth, Unemp 2001				0.311		
				(0.46)		
High wealth, Unemp 2001				0.292		
				(0.46)		
Low wealth, Unemp 2004					0.511	
					(0.50)	
Middle wealth, Unemp 2004					0.255	
					(0.44)	
High wealth, Unemp 2004					0.234	
					(0.42)	
Low wealth, Unemp 2008						0.444
						(0.50)
Middle wealth, Unemp 2008						0.297
						(0.46)
High wealth, Unemp 2008						0.259
						(0.44)
Observations	30528	1053	284	315	141	313

Table 2: Descriptive Means: Controls

	mean/sd	mean/sd	mean/sd
Unemployed	0.0345	0	1
	(0.18)	(0.00)	(0.00)
Chg Debt T1-T2	-1184.4	-1210.0	-468.3
	(94154.13)	(95726.73)	(22512.59)
Chg Debt T1-T3	-2127.9	-2204.7	-7.894
	(56329.86)	(57191.21)	(21653.81)
Chg Debt T2-T3	-689.4	-718.2	105.7
	(93804.99)	(95394.32)	(22272.28)
Less than HS	0.0727	0.0711	0.116
	(0.26)	(0.26)	(0.32)
High School+	0.663	0.665	0.607
	(0.47)	(0.47)	(0.49)
Male	0.578	0.577	0.589
	(0.49)	(0.49)	(0.49)
Age	42.56	42.61	40.89
	(9.62)	(9.59)	(10.11)
Non-white	0.233	0.232	0.262
	(0.42)	(0.42)	(0.44)
Never Married	0.121	0.120	0.158
	(0.33)	(0.33)	(0.36)
Fam Size	2.813	2.815	2.777
	(1.51)	(1.51)	(1.58)
Highest Qtr Wage	12765.0	12858.2	10153.8
	(12573.78)	(12662.68)	(9398.29)
UI Benefit	248.3	.	248.3
	(108.82)		(108.82)
Low Wealth	0.300	0.295	0.441
	(0.46)	(0.46)	(0.50)
Middle Wealth	0.300	0.300	0.300
	(0.46)	(0.46)	(0.46)
High Wealth	0.400	0.405	0.259
	(0.49)	(0.49)	(0.44)
State-Qtr Mean CC Limit	18.64	18.64	18.67
	(2.39)	(2.39)	(2.37)
State-Qtr Mean Num Inquiries	63.30	63.34	62.11
	(16.66)	(16.68)	(16.08)
State-Qtr Mean Cr Score	686.8	686.8	687.8
	(17.51)	(17.51)	(17.52)
State-Qtr Mean Number Cards	215.3	215.3	213.9
	(43.32)	(43.30)	(43.77)
ST 2 Time Exmpt Fed	0.187	0.187	0.194
	(0.39)	(0.39)	(0.40)
ST Bankruptcy Exmpt Less Fed	0.381	0.382	0.373
	(0.49)	(0.49)	(0.48)
Observations	30528	29475	1053

Table 3: Debt Difference Pre-unemployment Spell to Unemployed and Reemployed Periods

	Change in Debt, T1-T2			Change in Debt, T1-T3		
	(1)	(2)	(3)	(4)	(5)	(6)
Unemployed	1589.476	2851.244**	2835.174**	2728.904***	3435.616**	3432.958**
	(911.632)	(1005.595)	(1005.067)	(816.027)	(1068.484)	(1067.600)
Less than HS	500.180	146.665	157.405	-2312.969*	-2872.247*	-2847.729*
	(1181.041)	(1366.582)	(1366.853)	(992.909)	(1361.304)	(1362.196)
High School+	2928.825*	1565.493	1561.593	1079.022	924.063	942.835
	(1232.057)	(817.322)	(818.335)	(1123.663)	(1035.546)	(1036.137)
Male	-2605.222	-1707.431*	-1693.159*	335.891	-1595.856	-1578.222
	(1823.844)	(693.596)	(693.489)	(949.992)	(857.505)	(857.601)
Non-white	-1190.390	-305.563	-306.553	-191.029	532.569	523.654
	(721.058)	(726.511)	(726.219)	(742.986)	(956.713)	(957.205)
Never Married	-378.915	-889.390	-908.192	-1085.453	-2030.361	-2043.293
	(697.458)	(762.592)	(762.865)	(802.837)	(1083.147)	(1082.981)
Fam Size	674.501	191.607	193.075	256.314	187.515	185.079
	(547.280)	(248.910)	(248.997)	(258.444)	(291.364)	(291.290)
Change in marital status	1807.792	2610.315	2608.504	414.081	-192.406	-276.423
	(1168.628)	(1485.750)	(1486.426)	(1020.457)	(1682.464)	(1683.464)
Change in family size	-107.175	490.700	503.041	61.410	-529.842	-508.195
	(1150.834)	(944.105)	(944.473)	(740.393)	(996.802)	(997.147)
Highest Qtr Wage	-0.107	-0.074	-0.075	-0.155*	-0.073	-0.073
	(0.068)	(0.042)	(0.042)	(0.070)	(0.044)	(0.044)
UI Benefit	6.976	2.266	2.221	-0.050	1.064	0.873
	(6.544)	(5.963)	(5.924)	(5.766)	(7.300)	(7.264)
State-Qtr Mean CC Limit		-98.599	-130.723		-753.744	-461.023
		(819.736)	(825.890)		(1029.840)	(1034.256)
State-Qtr Mean Num Inquiries		46.255	36.294		230.265*	222.806*
		(79.734)	(79.903)		(102.500)	(102.575)
State-Qtr Mean Cr Score		4.227	-11.853		179.845	180.591
		(232.502)	(234.710)		(305.002)	(309.779)
State-Qtr Mean Number Cards		-66.287**	-70.711**		-29.662	-32.739
		(25.114)	(25.188)		(33.631)	(34.552)
ST 2 Time Exmpt Fed			-2055.927			166.640
			(2047.292)			(2163.731)
ST Bankruptcy Exmpt Less Fed			1078.411			5204.155
			(3040.732)			(2726.671)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Wealth Deciles	Yes	Yes	Yes	Yes	Yes	Yes
Other Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30075	20194	20194	25804	15923	15923

Other covariates not shown are a cubic in age and an indicator for a high debt load prior to spell.

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4: Debt Difference Pre-unemployment Spell to Unemployed and Reemployed Periods, by Panel

	Change in Debt, T1-T2			Change in Debt, T1-T3		
	(1)	(2)	(3)	(4)	(5)	(6)
Unemployed in 1996 Panel	-2071.461			2011.191		
	(2384.130)			(1199.392)		
Unemployed in 2001 Panel	2282.055	2137.152	2118.546	1326.386	1704.001	1679.871
	(1517.046)	(1460.958)	(1460.102)	(1313.473)	(1332.242)	(1330.525)
Unemployed in 2004 Panel	-1634.485	-2152.062	-2178.397			
	(2149.690)	(2022.111)	(2020.471)			
Unemployed in 2008 Panel	5644.970**	5788.713***	5779.992***	4783.397**	5169.669**	5188.685**
	(1772.516)	(1676.000)	(1677.682)	(1578.930)	(1591.902)	(1592.000)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Wealth Deciles	Yes	Yes	Yes	Yes	Yes	Yes
State Credit Controls	No	Yes	Yes	No	Yes	Yes
State Bankruptcy Exemptions	No	No	Yes	No	No	Yes
Other Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30075	20194	20194	25804	15923	15923

Other covariates not shown are a cubic in age and an indicator for a high debt load prior to spell.

State-quarter credit variables not available in 1996 Panel. Third observation of debt not available in 2004 Panel.

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5: Debt Difference Pre-unemployment Spell to Unemployed and Reemployed Periods, by Asset Groups

	Change in Debt, T1-T2			Change in Debt, T1-T3		
	(1)	(2)	(3)	(4)	(5)	(6)
Low wealth, Unemployed	944.302	1843.974	1831.375	2652.163*	3177.500*	3206.686*
	(997.916)	(1054.527)	(1056.293)	(1200.377)	(1490.932)	(1488.777)
Middle wealth, Unemployed	3331.922	5608.555*	5611.141*	2476.525	4275.194*	4224.640*
	(1831.349)	(2340.121)	(2338.348)	(1463.867)	(2002.352)	(1998.631)
High wealth, Unemployed	658.094	1452.137	1409.746	3138.372*	2912.563	2914.151
	(1885.413)	(1958.411)	(1957.452)	(1551.250)	(2017.688)	(2022.299)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Wealth Deciles	Yes	Yes	Yes	Yes	Yes	Yes
State Credit Controls	No	Yes	Yes	No	Yes	Yes
State Bankruptcy Exemptions	No	No	Yes	No	No	Yes
Other Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30075	20194	20194	25804	15923	15923

Other covariates not shown are a cubic in age and an indicator for a high debt load prior to spell.

Wealth groupings are by deciles of the asset distribution in T1:

Lowest (1st-3rd decile), middle (4th-6th) and highest (7th-10th deciles).

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6: Debt Difference Pre-unemployment Spell to Unemployed and Reemployed Periods, by Race

	Change in Debt, T1-T2			Change in Debt, T1-T3		
	(1)	(2)	(3)	(4)	(5)	(6)
White, Unemployed	1486.535	2592.055*	2610.225*	2903.739**	3724.641**	3761.294**
	(975.625)	(1170.849)	(1174.295)	(960.144)	(1265.884)	(1268.928)
Black, Unemployed	-742.509	2599.924	2495.340	1592.319	1435.379	1230.248
	(3287.977)	(3265.172)	(3262.955)	(2823.345)	(3942.782)	(3929.148)
Hispanic, Unemployed	2630.628	3092.847	2964.271	3952.070*	5254.437*	5159.584*
	(1857.597)	(1765.230)	(1770.696)	(1636.118)	(2105.511)	(2106.987)
Other race/ethnicity, Unemployed	7306.728	6637.331	6557.567	-1279.296	-1908.706	-1897.331
	(5523.615)	(6038.659)	(6013.871)	(1520.849)	(1746.112)	(1753.968)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Wealth Deciles	Yes	Yes	Yes	Yes	Yes	Yes
State Credit Controls	No	Yes	Yes	No	Yes	Yes
State Bankruptcy Exemptions	No	No	Yes	No	No	Yes
Other Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30075	20194	20194	25804	15923	15923

Other covariates not shown are a cubic in age and an indicator for a high debt load prior to spell.

Wealth groupings are by deciles of the asset distribution in T1:

Lowest (1st-3rd decile), middle (4th-6th) and highest (7th-10th deciles).

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7: Debt Difference Pre-unemployment Spell to Unemployed and Reemployed Periods, by Panel-Asset Groups

	Change in Debt, T1-T2			Change in Debt, T1-T3		
	(1)	(2)	(3)	(4)	(5)	(6)
Low wealth, Unemp 1996	-3478.720			2535.146		
	(3123.898)			(1993.464)		
Middle wealth, Unemp 1996	-1275.713			-543.988		
	(1675.100)			(1805.321)		
High wealth, Unemp 1996	-507.019			4421.620**		
	(4260.217)			(1711.275)		
Low wealth, Unemp 2001	1348.022	-14.436	-18.054	2054.993	2160.735	2143.349
	(1744.190)	(1525.651)	(1521.763)	(2011.548)	(2066.405)	(2061.325)
Middle wealth, Unemp 2001	4232.046	5219.216	5194.434	716.906	1583.231	1540.020
	(3776.481)	(3570.767)	(3570.029)	(1979.665)	(2042.608)	(2039.616)
High wealth, Unemp 2001	1512.362	1846.603	1814.218	963.286	1208.332	1195.282
	(2274.046)	(2314.713)	(2314.122)	(2488.563)	(2563.857)	(2564.364)
Low wealth, Unemp 2004	3.863	-823.701	-856.637			
	(1865.510)	(1644.380)	(1647.301)			
Middle wealth, Unemp 2004	-4774.920	-5440.836	-5363.924			
	(5536.309)	(5450.923)	(5448.523)			
High wealth, Unemp 2004	-1688.916	-1363.782	-1491.088			
	(4464.267)	(4572.447)	(4558.945)			
Low wealth, Unemp 2008	5049.991*	4876.335**	4866.173**	3312.722	4102.115*	4173.375*
	(2090.255)	(1849.121)	(1856.062)	(2074.697)	(2077.621)	(2075.168)
Middle wealth, Unemp 2008	10006.003**	10323.659**	10325.548**	7194.233*	7060.076*	7001.939*
	(3845.716)	(3563.655)	(3558.843)	(3277.722)	(3328.962)	(3324.917)
High wealth, Unemp 2008	1662.090	2149.543	2130.137	4529.737	4827.836	4845.882
	(3393.506)	(3437.443)	(3443.231)	(2712.104)	(2821.732)	(2836.162)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Wealth Deciles	Yes	Yes	Yes	Yes	Yes	Yes
State Credit Controls	No	Yes	Yes	No	Yes	Yes
State Bankruptcy Exemptions	No	No	Yes	No	No	Yes
Other Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Constant	2006.652	19074.801	30940.512	5763.306*	-106730.696	-116928.121
	(2212.358)	(161230.487)	(163811.696)	(2329.343)	(212056.357)	(216461.150)
Observations	30075	20194	20194	25804	15923	15923

Other covariates not shown are a cubic in age and an indicator for a high debt load prior to spell.

State-quarter credit variables not available in 1996 Panel. Third observation of debt not available in 2004 Panel.

Wealth groupings are by deciles of the asset distribution in T1:

Lowest (1st-3rd decile), middle (4th-6th) and highest (7th-10th deciles).

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8: SIPP Waves by Year

	Year																		
SIPP Wave	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
1	2,481	7,542	0	0	0	6,129	2,022	0	3,416	1,016	0	0	0	7,922	0	0	0	0	30,528
2	0	10,023	0	0	0	0	8,151	0	0	4,432	0	0	0	7,922	0	0	0	0	30,528
3	0	10,023	0	0	0	0	8,151	0	0	4,432	0	0	0	0	7,922	0	0	0	30,528
4	0	2,481	7,542	0	0	0	6,129	2,022	0	3,416	1,016	0	0	0	7,922	0	0	0	30,528
5	0	0	10,023	0	0	0	0	8,151	0	0	4,432	0	0	0	7,922	0	0	0	30,528
6	0	0	10,023	0	0	0	0	8,151	0	0	4,432	0	0	0	0	7,922	0	0	30,528
7	0	0	2,481	7,542	0	0	0	6,129	2,022	0	3,416	1,016	0	0	0	7,922	0	0	30,528
8	0	0	0	10,023	0	0	0	0	8,151	0	0	4,432	0	0	0	7,922	0	0	30,528
9	0	0	0	10,023	0	0	0	0	8,151	0	0	4,432	0	0	0	0	7,922	0	30,528
10	0	0	0	2,400	7,291	0	0	0	0	0	0	3,233	968	0	0	0	7,922	0	21,814
11	0	0	0	0	9,526	0	0	0	0	0	0	0	3,998	0	0	0	7,509	0	21,033
12	0	0	0	0	9,469	0	0	0	0	0	0	0	3,885	0	0	0	0	7,153	20,507
Total	2,481	30,069	30,069	29,988	26,286	6,129	24,453	24,453	21,740	13,296	13,296	13,113	8,851	15,844	23,766	23,766	23,353	7,153	338,106