Household Deleveraging and the Great Recession:
Evidence from the Survey of Consumer Finances[1]

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Abstract: The 2007-2009 recession was preceded by a historically unprecedented buildup of mortgage and consumer debt. This paper uses microdata from the *Survey of Consumer Finances* to investigate, at a disaggregate level, the extent of household deleveraging in the United States during the 2007-2013 years. We find that the majority of households continued to add consumer debt during the Great Recession, though there is evidence of deleveraging from 2010-2013. Chapter 7 bankruptcies made an important contribution to the reduction of household indebtedness during the period. Though the securitization of subprime consumer loans has ceased, the explosive growth of payday and title lending institutions assured that economically-distressed households could obtain short-term loans, albeit on usurious terms. We argue that extensive use of "alternative" financial services has worsened the balance sheet situation of a large number of households while contributing very little to consumer spending in the short term.

JEL Codes: E12, E21, E44

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> As we expand debt in the process of want creation, we necessarily come to depend on this expansion. An interruption in the increase in debt means an actual reduction in the demand for goods. Debt, in turn, can be expanded by measures which, in the nature of the case, cannot be indefinitely expanded.
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> John K. Galbraith (1958, 174).

The economic contraction of 2007-2009 was preceded by a historically unprecedented rise in the ratio of private sector debt to GDP. This development coincided with, and was given impetus by, a structural transformation of the financial services industry. Traditional, or relationship, banking was partially displaced in favor of the "originate to distribute" model. The consequences of this structural change for household spending behavior were quite profound. Consumer loans of all types now served as collateral for securities that were sold in tranches based on risk profile. As explained by Brown (2007), the securitization of consumer debt (including loans collateralized by home equity), in combination with the growth of shadow financial institutions such as hedge funds and the appearance of hedging instruments such as the credit default swap, led to a quantum increase in borrowing opportunities for households *at all stations* of the creditworthiness hierarchy. There is little doubt that strong borrowing provided a steroidal boost to consumer spending during the 1995-2007 era, a period when the U.S. household sector effectively assumed the function of global engine of effective demand. Several economists affiliated with the Post Keynesian project had raised concerns, prior to the financial crisis, about the sustainability of the debt-financed consumption boom. The household debt bubble had produced a progressive

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deterioration in the average quality of household balance sheets, as indicated by debt-to-income ratios and the proportion of current income claimed by debt servicing. Framed in the context of Hyman Minsky's financial instability hypothesis or *FIH* (see Minsky 1986), by 2007 a vastly greater number of households could be classified as "speculative" or "Ponzi" finance units than was the case years earlier. The macroeconomic fallout of this development was quite predictable and, in fact, *was* predicted by some.[4] A main theme pursued here is that the duration and depth of the slump of consumer spending post-2007 should be understood in relation to the U.S. economy's increased structural dependence on credit expansion to generate consumer demand.

We use microdata from the Federal Reserve's triennial *Survey of Consumer Finances* to investigate, at a disaggregate level, the extent of household debt deleveraging in the 2007-2013 period. We seek to shed light on the following questions. First, does the evidence give support to Minsky's debt-deflation theory of cyclical contractions? Second, has there been substantial improvement in the quality of household balance sheets since 2007? Finally, is the U.S. economy poised for another debt-financed boom in consumer spending?
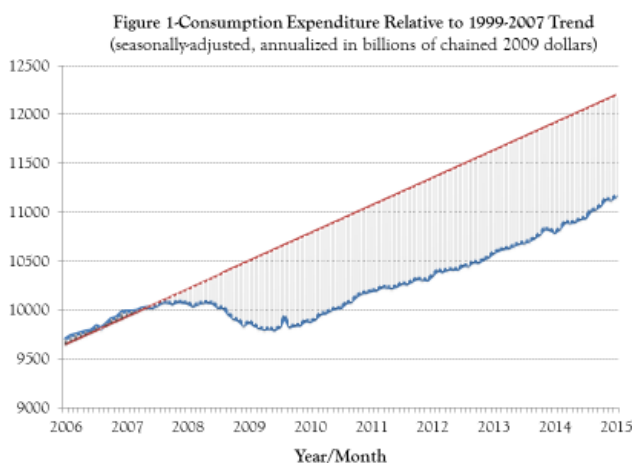
Our findings indicate that the majority of households, irrespective of income level, continued to expand their consumer debt liabilities during 2007-2009. Though this finding appears to contradict the debt-deflation thesis, we argue that the growth of consumer indebtedness during the recession is largely explained by an increase in "distress" borrowing amid deteriorating labor market conditions. In contrast to conventional consumer loans, distress loans (such as payday loans) have a marginal, perhaps even negative, short-run impact on consumer spending. There is evidence of major household deleveraging during 2010-2013.

The paper is organized as follows. We argue in section 2 that, given the increased secular importance of consumer credit to the maintenance and growth of consumer spending, households today fit Minky's description of "liability units"—meaning, agencies for which spending behavior is strongly conditioned by the relation between contractually obligated debt service payments and current and expected future income receipts. Section 3 investigates the extent of household debt deleveraging using SCF data for 2004, 2007, 2010, and 2013. The contribution of Chapter 7 bankruptcy in reducing household indebtedness is appraised. We examine the growth of predatory lending, and its importance in explaining increased leverage by low and moderate income households, in Section 4. Concluding remarks are contained in section 5.

2. Credit and the Stability of Household Spending

Real consumption expenditure (annualized in chained 2009 dollars) fell $292 billion from peak to trough (November 2007 to June 2009), or approximately 3.9 percent. Figure 1 displays monthly

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[4] Dirk Bezemer (2009) argues that economists using accounting models (such as flow-of-funds analysis), and were attentive to the rise of private sector debt to GDP, successfully predicted the financial crisis. Included among these were Wynne Godley (2006), Michael Hudson (2006), and Steve Keen (2006). Hudson (2006, 107) wrote, before the crisis: "Debt deflation will shrink the 'real' economy, drive down real wages, and push our debt-ridden economy into a Japanese-style stagnation or worse. " Brown (2007, 451) commented: "The borrowing binge of the past 10 years has left a plethora of households in a weakened financial state, and made the prospect of debt deflation a near certainty."

Figure 1-Consumption Expenditure Relative to 1999-2007 Trend
(seasonally-adjusted, annualized in billions of chained 2009 dollars)

Source: Bureau of Economic Analysis and Authors' calculations

consumption data (in chained 2009 dollars) relative to a (linear) trend component derived using consumption data for January 2009 to November 2007. The trend line indicates what the time path of consumption after 2007 would have been if consumer spending had expanded at its 3.1 percent average annual rate of 1999-2007. The shaded area gives an estimate of the cumulative loss consumption expenditure (and consumer goods production) since the start of the recession in December 2007. More precisely, we estimate the cumulative loss of real consumption during this period at a staggering $6.2 trillion, or approximately 56 percent of U.S. GDP in 2014.

Macroeconomic inquiry is, at a basic level, a search for the principal independent or exogenous causes of cyclical movements of real economic activity. Economists working within the Keynesian income-expenditure framework have almost always identified investment as the prime mover of business cycle fluctuations and this has, for both theoretical and empirical reasons, made good sense. Consumption expenditure, by contrast, has been treated as a stable or passive component of aggregate expenditure.[5] It is our view that conventional thinking about consumption needs modification in light of changing financial practices as well as a secular liberalization of household attitudes to credit use (see Brown 2008). The passive consumption function makes sense in the context of an economic system where households face a "hard" budget constraint, that is, when spending is a function of income *only*. In such a constrained scenario the behavior consumption would closely follow household income. However, as argued by Brown (2008), where households have the option to borrow, decisions to buy goods and services today depend on the state of confidence about the capacity to meet debt obligations *in the future*. It is reasonable to think, under these condition, in terms of an "animal-spirited" consumption function. Analytically, changing views about the (uncertain) future alter the parameters of the (simple Keynesian) consumption function, the effects of which reverberate throughout the economic system. We argue that factors

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[5] Minsky (1975, 23), for example, writes: "In the General Theory the consumption-function construct serves the purpose of identifying the passive, or determined, component of aggregate demand: in no sense is the consumption function the "heart of macroeconomics," if modern macroeconomics is identified with Keynes. In Keynes view it is, if

such as housing prices, stock market wealth, or consumer confidence are capable of exerting a powerful influence on the time path of consumption mainly to the extent that changes in these variables affect the scale of household borrowing. [6]

Minsky analyzed the investment decision from the point of view of the difference between prospective cash receipts and cash commitments that represent the margin of safety (Kregel 2008, 8).[7] The margins of safety were slowly eroded over a period of time especially during conditions of relative stability. On the verge of the great recession the margins of safety was sufficiently reduced between lenders and households. So even the smallest departure of realizations from expectations created conditions in which households had to change plans in order to meet fixed cash-flow commitments. This change could mean delayed payments, distress borrowing, or even distress sales of inventory and productive assets. In this paper we will elaborate more on how the growth of consumer indebtedness along with eroding margins of safety during the recession can be explained by an increase in "distress" borrowing such as payday lending.

The layering of debt onto household balance sheets cannot continue indefinitely, for the obvious reason that every new debt obligation adds to the pressure exerted on the household budget by debt service. From the macroeconomic perspective, mounting reliance on purchasing power derived from credit to sustain consumption creates the possibility of an episode of household debt deflation. Such an episode is most likely to occur at the terminal point of a protracted phase of strong consumer borrowing and steadily increasing debt-to-income ratios. Its statistical signature takes the form of: (1) a decrease in the flow of *new* consumer credit extensions; (2) a decline in consumer credit outstanding of a magnitude greater than would be expected on the basis on a decrease in new credit extensions alone, as households allocate an increased share of current income to debt servicing. The flow of new extensions may contract as a matter of volition by households, tightened lending standards, of some combination of both. With respect to point (2), the pattern evident in the 1980, 1991-92, and 2001 recessions is a sudden and substantial increase in *voluntary* repayments (that is, repayments in excess of the minimum required) on revolving credit balances.[8] From a flow-of-funds perspective, debt deflation interrupts spending enabled by the creation of new IOUs and diverts income receipts from product markets to debt

an anatomical analogy is necessary, the passive skeleton of macroeconomics which nevertheless conditions the system's response to stimuli."

[6] While many in financial press and mainstream economic literature such as Case et al (2005) and Tang (2006) have identified that housing wealth is statistically more important than financial wealth in explaining changes in consumer spending Brown (2008, 5) argues that "personal homes are indivisible assets and their sale entails substantial transactions costs. A common effort to realize capital gains from appreciating real-estate values would quickly extinguish the surge of market value that home owners seek to convert to money. Credit furnishes the crucial interstice in the nexus between housing prices and spending in as much as the connection between the two is operative only if there is a capacity and a willingness of households to borrow against the increased value of their homes."

[7] "For example, the margin of safety for a banker lending to a businessman for a particular project would be determined by the difference between the amount loaned and the amount required to finance the project. The margin could also be determined by the realization value of the collateral required of the borrower, the amount of compensating deposits, or any other factor that the banker believed would allow him to recover his loan if future income from the project disappointed expectations." (Kregel 2008, 9)

[8] See Brown (1993, 123, Table 6-3).

retirement. The 2007-2009 financial crisis differs in important respects from the traditional analysis of a Minsky crisis. These differences have had a significant impact on the way the crisis has evolved. Minsky expressed this idea in terms of a declining "margin" or "cushion" of safety in financial transactions and an increase in financial leverage that he called "layering." This coincided with the displacement of traditional, or relationship, banking in favor of the "originate to distribute" model.[9] With the emergence of the latter model, the conventional idea of bank behavior making and holding to term a portfolio of short-term and long-term loans made to members of a well-defined customer base has been retired (Dymski, 2005, Wray 2015).[10] The central reason behind this is deregulation in financial and banking markets. Among others, the introduction of Gramm-Leach-Bliley Act (1999), which eliminated the investment banking/commercial banking distinction that had been in place since the Glass-Steagall Act, created safe havens for "predatory lending."

3. Evidence of Deleveraging

We use data from the Federal Reserves' triennial *Survey of Consumer Finances* (SCF) to investigate the status of household balance sheets in four survey years: 2004, 2007, 2010, and 2013. The *SCF* collects data on demographics, income, employment, assets, debt, and other variables for a sample of approximately 22,000 U.S. households. By using sample weights, it is possible to draw inferences about the value of key economic variables for the population of U.S. households or, in our case, subgroups within the population. Aggregate measures (such as the ratio of consumer credit to income or the household debt service or financial obligations ratio) are of limited usefulness for determining stress on household budgets from debt service. The reason is that these measures give no information about the distribution of debt or financial obligations across households at different income levels. For example, if income gains accrue primarily to high

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[9] In originate to distribute model "the bank seeks to maximize its fee and commission income from originating assets, managing those assets in off balance-sheet affiliate structures, underwriting the primary distribution of securities collateralized with those assets, and servicing them. Under this system, the banker has no interest in credit evaluation, since the interest and principal on the loans originated will be repaid to the final buyers of the collateralized assets. The deterioration in cushions of safety caused by the evolution of the bank's evaluation of the borrower's credit risk through periods of stability plays no role here. The bank is only interested in its ability to sell the asset it has originated in order to earn a fee or commission, not to hold the asset in its loan book for a return determined by the net interest margin."(Kregel 2008, 11)

[10] When Minsky was writing in (1959) he described the prudent banker and the banker's relation with the borrowing firm as follows:

> The borrowing business firm is the source of the banker's income. The banker considers these firms as its customers. The loans to these customers are dated. Presumably the banker is convinced before making this loan that the customer will receive enough money prior to the due date to pay off the debt. It is not enough for the banker to be convinced that the borrower has sufficient assets to protect the banker against losses of value; the borrower must also have a sufficient flow of funds to pay his debt when due and hence protect the banker against loss of liquidity. Hence the banker traditionally favors loans for production and trade rather than loans for either consumption by households or the purchase of durable long lasting capital goods by business. The banker customer relation is one of mutual trust and confidence. The trade connection that a good customer represents is valuable to the bank and the bank is the recipient of confidential information about the operation of the business.

income families, and low income households account disproportionately for new loans, the aggregate consumer debt-to-income ratio may stay level over time, or even *decrease*, while at the same degree of debt-related economic pressure experienced by most households is increasing.

Our approach is to disaggregate sample households into income quintiles, using upper income

Table 2: Consumer Debt-to-Income Ratios by Income Quintile
(debt and income expressed in chained 2013 dollars)

Income Quintile	Mean Income	Mean Consumer Debt	Mean Debt-to-Income Ratio	Percent of Families with Debt-to-Income ≥ 0.80	Percent of Families with Debt-to-Income ≥ 1.0
			2004		
Bottom	$12,487.73	$5,178.20	0.415	9.8	8.2
Second	31,580.44	10,935.15	0.346	6.1	4.5
Middle	54,065.58	14,752.78	0.273	4.7	2.9
Fourth	84,135.58	21,780.27	0.259	2.5	1.9
Top	243,490.52	26,249.48	0.108	1.1	0.6
			2007		
	Mean Income	Mean Consumer Debt	Mean Debt-to-Income Ratio	Percent of Families with Debt-to-Income ≥ 0.80	Percent of Families with Debt-to-Income ≥ 1.0
Bottom	$13,903.31	$7,115.39	0.512	13.9	11.3
Second	32,381.02	9,806.74	0.303	12.7	8.0
Middle	54,567.97	18,536.01	0.340	10.6	6.8
Fourth	86,302.64	25,610.89	0.297	9.5	6.4
Top	285,939.51	31,856.53	0.111	4.2	2.1
			2010		
	Mean Income	Mean Consumer Debt	Mean Debt-to-Income Ratio	Percent of Families with Debt-to-Income ≥ 0.80	Percent of Families with Debt-to-Income ≥ 0.10
Bottom	$13,976.21	$12,191.21	0.884	15.5	13.5
Second	31,071.28	10,538.11	0.339	34.5	24.2
Middle	52,902.85	18,853.49	0.356	12.3	8.8
Fourth	83,639.12	26,155.84	0.313	10.2	6.3
Top	264,753.59	46,303.87	0.174	6.5	2.1
			2013		
	Mean Income	Mean Consumer Debt	Mean Debt-to-Income Ratio	Percent of Families with Debt-to-Income ≥ 0.80	Percent of Families with Debt-to-Income ≥ 1.0
Bottom	$13,281.18	$8,592.00	0.647	14.3	11.9
Second	29,673.51	8,061.39	0.272	32.4	10.0
Middle	50,596.21	12,195.40	0.241	8.4	6.3
Fourth	82,290.70	18,191.57	0.221	6.4	4.5
Top	270,752.15	32,048.46	0.118	3.9	2.8

Source: Authors' calculations from Survey of Consumer Finances microdata.

limits for each quintile provided by the Bureau of the Census. Table 1 gives information on incomes, consumer debts, and debt-to-income ratios by income quintile for the survey years

included. Consumer debts include installment loans, credit card loans, personal loans (including payday or title loans), student loans, and home equity loans. Our reason for including home equity loans in our definition off consumer credit is two-fold. First, we are interested in including all loans that are used, in full or in part, to finance consumer spending. Second, many households shifted from conventional consumer loans to home equity loans when the tax-deductibility of interest on the former type was eliminated by the Tax Reform Act of 1986.

Our findings indicate that the majority of households, irrespective of income level, continued to expand their consumer debt liabilities from survey years 2007 to 2010. Mean debt outstanding (in constant dollars) and debt-to-income ratios increased for families located in *all* income quintiles. The most striking thing, however, is the sharp increase in consumer debt relative to income for families located in the bottom income quintile. Mean consumer debt outstanding for families in this income bracket (income not more than $20,453 in 2010) increased by 71 percent, or $5,075.82. This finding is surprising in that one would have expected that, in an environment of tightening lending standards, low income families would be most liable to see their borrowing options restricted. Part of our task here, therefore, is to give a plausible explanation of this seemingly anomalous phenomenon.

As we noted above, aggregate debt-to-income ratios can give misleading information about the balance sheet or financial status of most families if debt is distributed very unevenly across households. There is evidence to indicate that, even *within* income quintiles, the distribution of consumer debt is skewed to the right (mean debt exceeds median debt in every case). It is possible that high mean debt-to-income ratios for the population as whole, or within income quintiles, can explained by the presence of a subset of families with very high debts relative to income. To shed light on this problem, we have estimated the percentage of families with debt-to-income ratios equal to or greater than 0.80 and 1.0, respectively. The reader will notice, for example, that while the mean debt-to-income ratio for the bottom quintile was 0.884 in 2010, only 15.5 percent of families in this grouping have a debt-to-income ratio equal to or greater than 0.80.

The estimates do give evidence of a major deleveraging by the household sector between 2010 and 2013. Mean consumer debt outstanding fell by at least 26 percent for all income groups, with the top quintile showing a decrease of 31 percent (from $46,308.87 to $32,048.46). Based strictly on the relation between income and consumer debt, by 2013~approximately six years after the start of the recession, and more than three 3 into the official "recovery"—the overall balance sheet situation of the household sector had returned to a 2004-like status.

Credit Card Debt Reduction

Robert E. Lucas (1980,   emphasis in original) has observed that "with respect to the qualitative behavior or co-movements among (time) series, *business cycles are all alike*." It is well known that the consumer durable goods series behaves pro-cyclically and is the most volatile component of consumption over the course of business cycles. The consumer finance industry came to maturity in the 1920s with growth of mass production durable goods industries, especially automobiles. It

Figure 2: Revolving Consumer Credit Outstanding
(seasonally-adjusted, in millions of dollars)
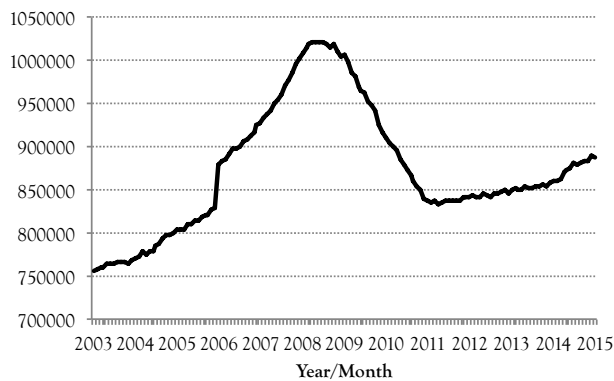
Source: Federal Reserve Board

was still true in the early 1980s that that a very high proportion of new consumer loans were of the installment-type used to finance the purchase of consumer durable goods. Credit cards were still used mainly for convenience purposes by high-income individuals. Under these conditions, changes in the flow of consumer credit extensions provided an accurate measure of the health of the consumer durable goods sector, and there was nearly a one-to-one relationship between installment lending and month-to-month changes in consumer credit outstanding. This has changed due to three factors. First, with the securitization of consumer receivables, a vastly greater number of individuals, in all age groups and at all income levels, hold credit cards today than was the case in 1987 (when the asset-backed security was introduced. See Brown 2007, Table 4, 443). [11]Second, credit cards today are used for the purchase of a much wider array of goods and services than previously, including the grocery items, medicines, utility bills, and durable goods. Finally, the post-1987 era reveals more extensive revolving, as opposed to convenience, use of credit cards. The factors explain the surge in revolving debt outstanding on household balance sheets in the past three decades.

Figure 2 illustrates the precipitous fall in revolving credit outstanding since 2008, a development consistent with the debt deflation hypothesis. Credit card debt outstanding fell by 18 percent in real terms between July 2008 and February 2011. Certainly it would be rational for an individual who is determined to reduce their debt to focus on high-interest credit balances first. Note also that credit card debt is unsecured, which is relevant here for two reasons. First, in comparison with secured loans, the lenders' risk attached to unsecured loans will increase by a greater degree as economic conditions deteriorate. As such, unsecured loans will be a first priority for a tightening of lending standards. Second, unsecured debt is the prime candidate for discharge

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[11] Based of SCF data for various years, Brown (2007) estimated that the mean credit limit for all credit cards held by middle-income families increased from $5,175 in 1989 to $14,000 (2004 dollars) in 2004.

in bankruptcy proceedings, so that a surge in bankruptcy filings is likely to result in a disproportionate decline in revolving relative to non-revolving debt.

Table 2: Mean Number of Credit Cards Held and Credit Limits, by Family Income Quintile (credit limits measured in chained 2009 dollars)

Income Quintile	Year							
	2004		*2007*		*2010*		*2013*	
	Mean Number Credit Cards	Mean Credit Limit ($)	Mean Number Credit Cards	Mean Credit Limit ($)	Mean Number Credit Cards	Mean Credit Limit ($)	Mean Number Credit Cards	Mean Credit Limit ($)
Bottom	0.71	4,946.36	1.18	6,002.78	0.66	4,466.32	0.96	3,991.75
Second	1.33	9,975.34	2.16	12,012.36	1.11	8,044.12	1.97	7,581.64
Third	1.94	17,766.68	3.21	18,341.13	1.69	14,616.42	2.87	12,710.46
Fourth	2.40	26,314.13	4.19	29,951.26	2.42	23,769.67	3.82	20,667.06
Top	2.99	46,541.31	5.07	52,378.00	3.08	46,796.99	4.70	41,208.05

Source: Authors' calculations from *Survey of Consumer Finances* microdata

Table 2 gives information on the mean number of credit cards held and mean (aggregate) credit limits (in chained 2009 dollars) by family income quintile. There is a substantial reduction in the average number of credit cards held by families at all income levels from 2007 to 2010. It is not possible, however, to determine the relative importance of tightened credit standards versus the voluntary "cutting up" of credit cards in explaining this development. We not that, during this period, the average credit limit per card held decreased from $5,087.100 to $4,158.00 for cardholders located in the bottom quintile. For families located in other quintiles, however, the average credit limit per card actually increased during the recession. In this paper we are using households as financial units so we will extend this concept to household level. The data for 2013 shows an across-the-board increase in the average number of cards held compared to the 2010 survey, combined with a very substantial decrease in the average credit limit per card held.

Surge in "Distress" Borrowing

The household balance sheet data presented in Table 1, and in particular the increase in consumer debt-to-income ratios between 2007 and 2010, are quite surprising. That is, if the use of consumer credit provides a stimulus to consumption, how can the continued surge of household indebtedness during the Great Recession be reconciled with the sharp decline in consumer spending during the same period? We believe the answer lies partly in changing patterns of credit use, or more specifically in the greater frequency with which credit is used for the payment of expenses *already incurred.*

Modeled in the context of Minsky's *FIH*, debt deflation is preceded by the transition of liability units from "hedge" to "speculative" and "Ponzi" positions. [12] Borrowing by units in speculative or

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[12] For hedge units, cash receipts (or income) are adequate to repay principal and interest on outstanding debt obligations. For units in a speculative position, debts must be rolled over because income receipts are sufficient to pay

Ponzi positions is mainly for purposes of paying interest and principal on *previously incurred* debt. As such, new credit extensions made to speculative of Ponzi units make a negligible, perhaps even negative, contribution to short-run spending for new goods and services. We define *distress* borrowing as the use of credit products by the household to pay for expenses that, under more favorable circumstances, would be paid out of current income flows. These include recurring expenses such as rent, utilities, phone, prescription medicines, or gasoline, as well as the payment of interest and principal on outstanding consumer loans.

The estimates presented in table 1 are consistent with the view that the post-1995 debt boom pushed many, particularly low-income, families into the category of speculative or Ponzi finance units. We hypothesize a related surge in distress borrowing by many households, a phenomenon that we believe largely accounts for the increase in consumer indebtedness during the Great Contraction. The main factor underpinning this belief is the coterminous growth and elevated political legitimacy of businesses that offer alternative financial services. Most important of these for our purposes are payday loans and auto title loans. Many commentators have observed that, given the usurious terms attached to these types of loans, only individuals in dire economic straits would use them. Any family that uses these products on a continuing basis will see the share of its current income claimed by debt servicing increase quickly and sharply. In comparison with other types of lending, the regressive income re-distribution effects of alternative financial services are especially unfortunate.

Payday Lending as an Example of Predatory Lending

Along with the rise in number of economically distressed communities over the last decade the predatory industries that make profit out of them has also gone up. Predatory loans are collateralized loans mainly based on the income or home-equity of the borrower and are significantly costlier. Significantly higher fees and more onerous terms are tied to them. Predatory lending burdens borrowers with loans they cannot afford. In addition to the subprime mortgage payday loans can be categorized as predatory loans. (Dymski 2005; Wray 2007). Predatory lending has become one of the most critical policy concerns facing financial services. Despite broad consensus to take actions efforts to end predatory lending have not been successful mainly because there is lack of consensus on what constitutes illegal predatory lending (Carr and Colluri, 2001).

Among the industries that are trying to make profit out of distressed communities payday lending stands out for its rapid expansion and its ubiquitous presence in many communities within United States (Gallmeyer and Roberts, 2009). Often classified as an "alternative" financial service, payday lending is an example of small-scale financial innovation which involves personal debt, especially with differential impact on lower income households (Redmond, 2014).[13] Table 3

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interest by not principal. Finally, Ponzi finance units must borrow merely to stay current on interest payments. See Minsky (1986).

[13] "Payday loans are high-cost small loans averaging $350 that usually must be repaid in a single payment after two weeks and are designed to create a long-term debt trap. Whether they receive the loans online, in storefronts, or through banks, the vast majority of borrowers cannot both repay the loan and cover all their basic living expenses until their next payday. As a result, they typically take out multiple loans within a short timeframe, paying repeated fees to

shows the mean and median incomes of families who took out a payday loan and who did not take out a payday loan. The mean and median income for households that took out a payday loan falls on the bottom most two quintiles based on income (see Table 3).

Table 3: Mean and Median Income for Households with and without Payday Loans

	Took out a payday loan		Did not take out a payday loan	
Year	Mean income	Median Income	Mean income	Median Income
2007	31673	30000	81987	46000
2010	38435	31000	77564	45000
2013	43504	34000	85624	46000

Source: Authors' calculations based on Survey of Consumer Finances data.

Why Predatory Lending and Low Income Financial Markets Grew

Lower income households in the US typically have much more volatile incomes than do other households (Gosselin, 2004). Hence they have a recurring need for credit as a way of closing their income-expenditure gaps. Consequently, lending to lower income customers has expanded faster than lending to middle and upper income customers. Data from the Survey of Consumer Finances show that households in the two lowest income quintiles have had surging levels of debt, not paralleled by proportionate increases in asset levels, from 2004 to 2013. This fact is also illustrated by the comparison in debt to income ratios of the families who took out a payday loan and who did not take out a payday loan as shown in table II.

Table 4: Debt to Income Ratios for Households with and without Payday Loans

Year	Took out a payday loan	Did not take out a payday loan
2007	0.548	0.182
2010	0.348	0.290
2013	0.476	0.218

Source: Authors' calculations based on Survey of Consumer Finances data.

According to PEW (2012) more than twelve million American adults use payday loans annually and on average a borrower takes out eight loans of $375 each year and ends spending $520 on interest. Pew's analysis shows that the vast majority of borrowers use the loans on a long-term basis, not a temporary one. While payday loans are marketed as short-term credit for unexpected expenses, 69% of borrowers used payday loans to cover ordinary living expenses over the course of months.

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do so. Payday loans create a debt treadmill that makes struggling families worse off than they were before they received a payday loan," (Montezemolo, 2013).

Deleveraging through Chapter 7 Bankruptcy

Chapter 7 of the U.S. Bankruptcy Code provides a means by which households can obtain relief from the claim on current income imposed by debt servicing. Chapter 7 permits the discharge of unsecured consumer debt. As such, it is an important tool of deleveraging. Personal bankruptcy filings have risen apace with the secular expansion of household indebtedness. There were approximately 3.6 non-business bankruptcy filings per 1,000 households in 1981. The number increased to 14 per 1,000 households in 2004. Month-to-month bankruptcy filings also behave counter-cyclically, so it comes as no surprise that such filings approximately doubled between 2007 and 2010 (see Figure 3). It is important to note, however, that Chapter 7 filings during the Great Recession basically returned to the level seen prior to the passage of the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) of 2005.

As the title of the legislation suggests, the BAPCPA was motivated by what was perceived as pervasive gaming of the bankruptcy statutes in an environment in which the cultural stigma attached to bankruptcy filing was no longer adequate to prevent it. The conventional view of personal bankruptcy is that it ought to be limited to extreme hardship cases inasmuch as the discharge of consumer debts "impose[s] the cost of financial irresponsibility on society" (Graue 1939, 486).[14] These costs take the form of losses suffered by merchants of goods and services, higher consumer prices, as well as higher interest rates or fees paid by "responsible" borrowers.[15]

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[14] The relative importance of medical bills in explaining the surge of personal bankruptcy filings after 1983 was a main point of contention in the debate surrounding bankruptcy reform. A widely publicized 2005 paper by Himmelstein et al., based on a sample of 1771 bankruptcy filings in 2001, claimed that "medical problems contributed to about half of all bankruptcies" (Himmelstein et al. 2005, 19). This finding was challenged by, among others, Denove and Millenson who, using the same data set, reached the conclusion that "medical bills are a contributing factor in just 17 percent of personal bankruptcies" (Denove and Milleson 2006, w74). A 2005 Department of Justice study (made at the request of Iowa Senator Charles Grassley) of 5,203 bankruptcy cases reported that 90 percent of filers had medical debts of less than $5,000. Of those reporting medical debts, such debts accounted for just 13 percent of unsecured debts on average.

[15] On the social costs of bankruptcy, Friesner et al. (2011, 780) write that "debtor-friendly bankruptcy codes and increased social acceptability of bankruptcy would then lead to an evolutionary process where bankruptcy was viewed as a right (not a privilege) and the use of bankruptcy to discharge debts increases. As the debtor emerges from bankruptcy and re-establishes him/herself, the accumulation of debt is also re-established. The debt that is discharged is passed on to society at large, and disproportionately onto the subset of society that feels an ethical, moral or religious obligation to repay their debts at a higher rate of interest. Cumulative circular causation becomes pervasive when a sufficient number of people are either (1) unable to pay the higher rates of interest; and/or (2) view debt discharge as a socially accepted right."

Figure 3: Chapter 7 Bankruptcy, Nonbusiness Filings (thousands)
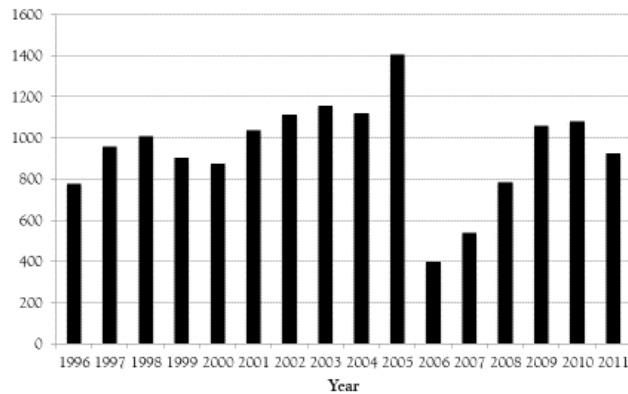
Source: Department of Justice Department, Bankruptcy Statistics, Table F-2

The main proviso of the BAPCPA is a means test that makes it more difficult for individuals with predominantly consumer debt to file for bankruptcy under Chapter 7. The means test is applicable to households with disposable incomes in excess of the median state level, adjusted for family size. If disposable income is sufficient, after covering "allowed monthly expenses," to pay at least some portion of unsecured debt, then the household is not permitted to file under Chapter 7. The relevant question for our purposes is: Would the number of Chapter 7 nonbusiness filings have been significantly greater during the post-2007 years without the tightening of filing requirements imposed by BAPCPA?

Using bankruptcy data for 2006-2009, Daniel Friesner et al. (2011) found econometric evidence to support the hypothesis that a major "organic" effect of the BAPCPA was to induce many of those who would have otherwise used Chapter 7 to instead file for bankruptcy under Chapter 13. The ratio of Chapter 7 to Chapter 13 nonbusiness filings declined quite sharply in the immediate aftermath of the BAPCPA. There were, on average, 2.46 Chapter 7 nonbusiness filings for every 1 Chapter 7 filing in the years 2002-2004. That number fell to 1.67 in 2007, though it moved back up toward 2002-2004 levels afterwards. By applying the 2002-2004 ratio to the total number of nonbusiness filings (Chapter 7 and Chapter 13) for the years 2007-2013, it is possible to get a conservative, baseline estimate of the additional Chapter 7 filings that would have occurred without means testing or other provisions of the BAPCPA. We estimate that the additional Chapter 7 filings for 2007-2012 at 410,079, or 68,347 per year. Based on the average debt discharged in a nonbusiness Chapter 7 proceeding during the same period ($194,397), the additional household debt discharged would have been approximately $79.7 billion. Again, we believe this is a conservative estimate since is assumes that all households who desired to file Chapter 7 but were unable to do so due to the BAPCPA requirements files for Chapter 13 bankruptcy as an alternative.

The data presented in Table 5 gives a sense of the scale of debt de-leveraging accomplished through Chapter 7 bankruptcy filings. These are filings for family units that have predominantly

consumer debt, though an undetermined fraction (though less than half) of the amounts reported as average and total net scheduled debt constitute business debt. The figures for average net

**Table 5—Debt Discharged in Chapter 7 Nonbusiness Bankruptcy Petitions, 2007-1012**

Year	Chapter 7 Filings	Ave. Net Scheduled Debt ($) [a]	Total Net Scheduled Debt (billions of $) [a]
2007	539,382	$148,836	$80.28
2008	785,619	178,126	139.94
2009	1,057,686	213,560	225.88
2010	1,080,328	245,506	265.23
2011	926,301	203,730	188.72
2012	816,271	176,624	144.17

[a] Aggregate debt discharged in cases filed during the year, determined as the difference between the total amount of debt and obligations of the debtor reported on schedules and the amount of debt in categories which are predominantly non-dischargeable.

Source: United States Courts, Bankruptcy Statistics, Table 1A.

scheduled debt are surprising, particularly in light of the fact that, according to our calculations using microdata from the 2010 SCF, the median income of a bankruptcy petitioner (all chapters) was only $39,000 (current dollars). The average income is significantly higher ($53,021), which suggests that the figures for average net scheduled debt pulled upward by a comparatively small number of petitions with very high reported debt.

The data in Table 5 indicates that, during the Great recession, the scale of household debt deleveraging via the bankruptcy route was immense, both absolutely and relative to total

Figure 4-Net Scheduled Debt in Nonbusiness Chapter 7 Filings as Percent of Consumer Credit Outstanding
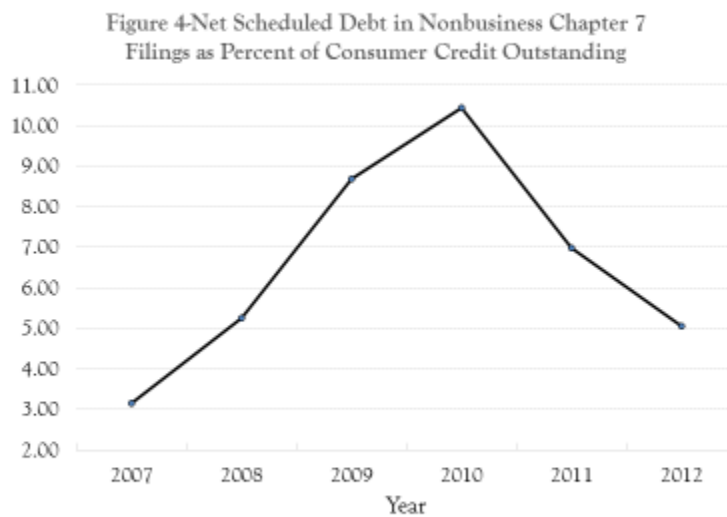
Source: Federal Reserve Bank and United States Courts, Bankruptcy Statistics, Table A1.

debt outstanding. To get a clearer picture of the situation, we have calculated net scheduled debt in nonbusiness Chapter 7 files as a percent of consumer credit outstanding for the 2007-2013 period (see Figure 4). The discharge of debt through Chapter 7 does *not* mean an equivalent decline in consumer debt liabilities, since net scheduled debt includes some mortgage and business debts. Even so, the numbers are stunning. For example, nonbusiness Chapter 7 petitions resulted in the discharge of debts equal to 10.45 percent of (average) consumer credit outstanding in the U.S. in 2010.

Table 6: Frequency of Bankruptcy Filings by
Income Quintile (percent of all families)

Income	Year			
Quintile	2004	2007	2010	2013
Bottom	2.26	2.79	2.62	1.35
Second	2.80	3.21	3.44	3.32
Middle	5.53	3.25	3.48	3.72
Fourth	3.12	1.30	2.82	3.41
Top	0.85	0.43	0.70	0.94

Note: Includes Chapter 7 and 13 filings in the three years prior to the survey.

Source: Authors' calculations from *Survey of Consumer Finances* microdata

It seems clear that Chapter 7 has contributed very significantly, perhaps more than other factor, to household deleveraging over the past several years. The problem is that the benefits of the Chapter 7 option have been very thinly distributed across the household sector. Moreover, low income households who, as we saw above, tend to carry very large debts relative to their incomes, and would seem to have the most compelling ethical case for using the bankruptcy statutes, have benefitted less on average than middle income households. Table 6 shows the frequency of bankruptcy filings by income quintile. Only a small percentage of households file for bankruptcy, though the numbers percentages increased after 2004. Note also that families located in the middle income quintiles have a greater propensity to file bankruptcy than those located in the bottom quintile, and this trend has held up despite means testing under the BAPCPA.

Some state level studies have shown, however, that within the subset of low income households, bankruptcy filing is more common among those who took out pay day loans. Skiba and Tobacman (2011) reported that 8,331 of the 145,519 payday loan applicants filed for personal bankruptcy during 2000-2006 in the state of Texas. For slightly less than 5 percent of matching bankruptcy cases, they also observed both spouses in the household had applied for payday loans.[16] The average amount of time from first payday loan application to the end of the bankruptcy data

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[16] Their study used an administrative panel dataset from a payday lender and a discontinuity in the firm's loan-approval rule to study the impact of small-dollar, short-term, high-interest loans on bankruptcy and indebtedness. They identified debtors in the Public Access to Court Electronic Records (PACER) bankruptcy dataset for the state of Texas with payday loan applicants if the following variables in the two datasets match exactly: first name, last name, zip code of home residence, and last four digits of Social Security number.

period was 3.98 years. During this period an average bankruptcy rate among payday applicants was $\frac{8831}{145519*3.98} = 1.4\%$, and this value was more than five times higher than the overall annual bankruptcy rate in Texas for the bankruptcy sample period.

<div align="center">

Table 7: Bankruptcy Summary Statistics
Texas Bankruptcy data 2000-2006

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	Number of Bankruptcies	Annual Personal Bankruptcy Rate TX (Individuals)	Bankruptcy filers who ever applied for Pay day loans	Bankruptcy petitions per payday applicant per year
Chapter 7	239,686	0.16%	2,705	0.47%
Chapter 13	171,647	0.11%	5,626	0.97%
All	411,333	0.27%	8,331	1.44%

Source: Skiba and Tobacman (2011), Table II, Panel A, p.29

4. Concluding Remarks

The economic contraction of 2007-2009 was followed by a historically unprecedented rise in the ratio of private sector debt to GDP. This development coincided with a structural transformation of the financial services industry. Traditional, or relationship, banking was partially displaced in favor of the "originate to distribute" model. As a consequence, the majority of households, irrespective of income level, continued to expand their consumer debt liabilities during 2007-2009. While the household debt surged the income source of the households declined hence the margins of safety was sufficiently reduced between lenders and households. Households had to change plans in order to meet fixed cash-flow commitments and this change was mostly in the form of distress borrowing such as payday lending.

The rise in distress borrowing, however, did not contribute to boost consumption spending. In Minsky's terms pay day loans slowly changed the positions of households from speculative to Ponzi and it has a negligible, perhaps even negative, contribution to short-run spending for new goods and services. Distressed borrowing was mainly for purposes of paying interest and principal on *previously incurred* debt or to pay for ordinary expenses. The main factor underpinning the surge in distress borrowing by many households is the coterminous growth and elevated political legitimacy of businesses that offer alternative financial services.

Many indebted households relied on chapter 7 bankruptcy as a means to obtain relief from debt servicing. Personal bankruptcy filings have risen apace with the secular expansion of household indebtedness. While there were approximately 3.6 non-business bankruptcy filings per 1,000 households in 1981, the number increased to 14 per 1,000 households in 2004 and such filings approximately doubled between 2007 and 2010. Some state level studies such as, Skiba and Tobacman (2011) have reported that an average bankruptcy rate among payday applicants was 1.44%, and this value was more than five times higher than the overall annual bankruptcy rate (0.27%) in Texas for the bankruptcy sample period.

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