

Inequality, Financialization, and the Growth of Household Debt in the U.S., 1989-2007*

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Abstract

Household indebtedness in the United States grew dramatically during the decades leading up to the financial crisis. From 1989-2007 the mean household debt-to-income ratio increased by over 100%. Social scientists have devoted considerable attention to the macro-political economy of growing consumer credit markets, but there has been little empirical research on households' proclivity to take on increasing debts. Two alternative explanations explain rising debt-to-income either as a compensatory response to income stagnation and the squeeze on the middle-class, or alternatively as a reflection of a more aggressive culture of financial risk-taking. The present paper utilizes household-level data in order to examine the empirical implications of each of these explanatory perspectives. Patterns of debt-to-income growth are less consistent with the income squeeze explanation than the financial culture explanation. Debt-to-income growth was concentrated disproportionately among college-educated, upper-middle income households – not the downwardly-mobile and/or lower-middle class households who were feeling the most acute effects of the wage squeeze. Income stagnation also played no significant role: Controlling for demographics, debt-to-income ratios for households with negative or stagnant real incomes over the preceding five years tend to be no greater than those for households with positive real income growth. More aggressive orientations toward financial risk were positively associated with debt levels. The results suggest that dominant macro-level explanations of household debt growth are based on inadequate micro-level assumptions.

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Introduction

The aggressive expansion of consumer credit markets in liberal economies has coincided with rapidly rising household indebtedness during the previous two decades. This trend is especially pronounced in the United States. From 1989-2007, real median U.S. household debt holdings grew 179% as consumers took on increasing quantities of mortgage, home equity, credit card, student, and auto loans. Total outstanding household debt as a fraction of GDP increased from 58% to 97% during these years. By 2007, the aggregate ratio of household debt-to-income was over 119%.

The enormity of this growth and its severe consequences have made household indebtedness a major topic of concern among scholars and policymakers. Figure 1 shows the dramatic rise in mean and median household debt-to-income ratios from 1989-2007. Social scientists have tended to view this growth in macro-institutional terms as part of the broader political economy of financialization (Harvey 2010; Rajan 2010; Krippner 2011; Prasad 2013). On the supply-side, scholars agree that government policies, securitization technologies, financial firm strategies, and global trade imbalances all played a role in expanding the scale and scope of consumer credit markets during the decades leading up to the financial crisis. On the demand-side, the effects of wage stagnation and rising income inequality loom especially large in these accounts. The dominant view, embraced by everyone from neo-Marxist political economists, to financial economists, to sociologists of stratification, explains rising household debt as a compensatory response to the declining fortunes of the middle-classes (e.g. Warren 2004; Leicht and Fitzgerald 2006; Barba and Pivetti 2009; Rajan 2010; Harvey 2010; Reich 2011; Trumbull 2012; Leicht 2012). By promoting cheap credit as a substitute for productivity-linked income growth, policymakers could anesthetize the social ills of a weakened safety net and forestall potential conflicts over growing income inequality (Rajan 2010; Prasad 2013). And

by untethering household consumption from income constraints, the expansion of credit permitted continual consumer-driven macroeconomic growth despite stagnating wages (Foster 2006; Cynamon and Fazzari 2008; Harvey 2010). Crouch (2009) has argued that consumer credit expansion amounted to a policy regime of “privatized Keynesianism.” (see also Kus 2013). In 2005 the Commerce Department reported that the ratio of personal outlays to disposable income had exceeded 100% for the first time since 1933, meaning that U.S. households were spending more than they were earning in the aggregate.

Yet, despite the fact that rising indebtedness is widely recognized as a lynchpin of the recent U.S. political economy (e.g. Prasad 2013), we know surprisingly little about basic patterns of debt accumulation at the household level. We have a growing number of studies on lenders and the institutional structuring of consumer credit markets in the United States and elsewhere (Guseva and Rona-Tas 2001; Langley 2008; Carruthers and Ariovich 2010, chap. 4; Fligstein and Goldstein 2010; Hyman 2011; Krippner 2011). This literature has documented institutional transformations that increased the *availability of credit* for U.S. consumers beginning in the 1980s. We also have a growing literature on the *stratified consequences* of debt for outcomes such as financial distress, bankruptcy, foreclosure, and neighborhood destabilization (Sullivan, Warren and Westbrook 2001; Warren and Tyagi 2004; Wheary and Draught 2007; McCloud and Dwyer 2011; Porter 2012). This line of work has documented who was bearing the negative *consequences* of the high-debt economy, both before and after the financial crisis. But there has been remarkably little research on the growth of household leverage. Existing discussions have been based almost entirely on aggregate trends. As a result, the key micro-level premises and predictions of existing theories have received very little scrutiny. Who was driving the debt boom, and what demand-side factors were compelling them to borrow so fervently? This paper uses household-level data from the Survey of Consumer Finances to critically assess the

empirical implications of two alternative theoretical perspectives.

[Figure 1 here]

Explaining Indebtedness

Economic Insecurity and the Squeeze on the Middle-Class. The dominant account, which I term the “squeeze theory,” explains rising household debt as a compensatory response to middle-class income stagnation coupled with the privatization of risk (e.g. Warren 2004; Hacker 2006; Leicht and Fitzgerald 2006; Barba and Pivetti 2009; Rajan 2010; Harvey 2010; Reich 2011; Hyman 2011; Leicht 2012; Prasad 2013). There are several different variants of this account, all of which highlight the fact that households took on greater debts against a backdrop of stagnant wages, heightened labor market insecurity, diminishing opportunities for those without a college education, rising costs of education and healthcare, and a weakening social safety net. Within this context, credit emerged as a new type of safety net. Empirically, these theories suggest that debt growth was driven by those who were being left behind in the new economy, and who embraced borrowing primarily as a *defensive strategy* to remain afloat in the face of new pressures. This implies debt growth would be concentrated disproportionately among household who were experiencing the most acute economic strains and borrowing defensively: households who were a) located in the lower and lower-middle portions of the stratification structure, b) feeling the squeeze of stagnant or declining incomes, c) expressed a defensive orientation vis-à-vis financial risk-taking and d) used borrowings to absorb shocks such as job loss, and the growing costs of health care and college.

Financialized Culture and Leverage. A second, less developed account points to changing norms about borrowing, which were driven by aggressive lender marketing, an arms race for positional goods such as houses in desirable neighborhoods (Frank 2007), and a financialized culture of leveraged investment (Davis 2009). In contrast to the defensive,

compensatory conception of borrowing behavior in the squeeze account, recent work by economic sociologists highlights that U.S. households have embraced increasingly aggressive financial strategies during the past two decades (Davis 2009; Fligstein and Goldstein 2012). I build on this work to develop a second alternative account. Analytically, this model points to a shifting moral economy of borrowing rather than mere functional substitution for reduced purchasing power. Rising indebtedness reflected less of a defensive posture than an aggressive one whereby some households actively embraced leverage as a strategy to *enhance* their position in the socio-consumptive hierarchy by investing in assets (particularly residential real estate). Empirically, this implies household debt grew independently of household-level income dynamics as *both* economically struggling and secure households were inundated with credit offers and a financial culture that valorized entrepreneurial risk-taking, and prescribed debt-funded investment as a way to get ahead (Cynamon and Fazzari 2009; Davis 2009; Fligstein and Goldstein 2012). In other words, observed levels of debt-to-income will be less associated with the degree to which households are experiencing economic strains *per se* than with the degree to which they have absorbed the cultural logic of the financial economy and adopted more aggressive dispositions toward financial risk-taking. Finally, this view implies that debt growth was driven by outlays for investment purposes, such as high-leverage housing purchases, home renovations, and vacation properties.

Each of these two stylized accounts embeds within it a differing view of how social factors propelled household debt growth in the U.S. They also imply differing empirical patterns and correlates of debt growth.² I assess the extent to which empirical patterns of household

²Note that the two accounts are not mutually exclusive. Both contain several distinct empirical implications, some of which may be true to a greater extent than others. They also are potentially complementary insofar as each may capture causal dynamics within differing portions of the population.

leverage accord with the implications of the two alternative accounts. I use decompositions and multivariate regression analyses to track the distribution, composition, and correlates of debt-to-income ratios from 1989-2007. For the purposes of the present analysis, I assess each perspective's utility for explaining the *overall* growth of household debt-to-income, as this has been the focus of existing discussions.³ I utilize household-level data from the Survey of Consumer Finances. The Survey of Consumer Finances (SCF) is a triennial, cross-sectional survey conducted by the Federal Reserve Board. The SCF is limited insofar as it does not track individual respondents longitudinally. But it does include self-reported, retrospective information about whether the household's income grew faster, slower, or the same as prices over the preceding five years. This allows us to examine the extent to which those who had experienced recent income decline or stagnation tended to accumulate more debt, and how this relationship changed over time. The use of repeated cross-sectional data is appropriate given the analytical focus here on explaining the aggregate growth of indebtedness.

The results of the analysis provocatively cast doubt on the explanatory power of the middle-class squeeze theory. Although debt-to-income ratios grew throughout the entire income distribution, they grew comparatively less within those portions of the income distribution where the squeeze was being felt most acutely: Controlling for age and other demographic confounds, households in the 60th-90th income percentiles carry significantly higher debt-to-income ratios than those in the 20th-40th income percentiles, and this difference grew over time. The hypothesis

For instance, lower-middle class households may be falling into deeper debt due to the pressures of the income squeeze, while more affluent households are aggressively leveraging to enhance their consumption levels.

³ In focusing analytical attention on households, I do not imply that demand-side factors take causal precedence over the expanding supply of credit. The easing availability of credit during this period forms a necessary condition for both explanations.

that income stagnation drove the debt bubble also finds little support: Households who reported negative or stagnant income growth over the preceding five years exhibited debt levels that were no higher than those for households who had enjoyed increasing incomes. As the borrowing boom progressed during the 2000s, household debt-to-income levels became less – not more – associated with economic strains. Thus although credit markets did increasingly function as a marketized social safety net (Leicht 2012), this transformation does not explain the aggregate growth of household indebtedness.

The patterns of rising indebtedness are more consistent with the alternative financial culture theory. Across the income distribution – and especially in the middle of the distribution – those who self-identified as someone who seeks above-average financial returns by taking above-average risks exhibited significantly greater debt-to-income ratios than less risk-oriented households, and the magnitude of this difference grew over time. This is consistent with the idea that rising indebtedness was driven largely by a cultural shift in logics of borrowing, whereby debt became reconceived as leverage. This shift reflected a trend toward more financialized economic repertoires among middle- and upper-income Americans, particularly their growing tendency to conceptualize houses as investment assets or cash-machines (Davis 2009), and their heightened willingness to embrace financial risk-taking (Fligstein and Goldstein 2012).

Overall, the results reveal significant discrepancies between the dominant social-science account of rising indebtedness and the observed household-level patterns. I argue this is attributable to the fact that conventional explanations based on political economy theory are grounded in excessively functionalist suppositions about micro-level borrowing behavior. By using economic sociology to supply a more culturally-grounded micro-foundation (DiMaggio 2002), I generate a more nuanced explanatory account of this important socio-economic trend.

Charting the Growth of Household Indebtedness

The period from 1989 to 2007 saw ever-greater numbers of households to take on ever-greater quantities of debt in an ever-greater variety of ways. It is useful to begin by describing the sources and contours of this growth in the aggregate. The purpose of this section is to frame the subsequent analysis by providing contextual background on both the composition of debt growth and households' widening *opportunities* to accrue these debts. These opportunities represent a necessary causal background condition for both alternative theoretical accounts.

Debt Growth By Loan Type

Figure 2 shows the total quantity of outstanding debt by loan type in constant year 2000 dollars, while figure 2b shows the same data as a percentage of all outstanding debts in each year. Here loan type refers to the *source* of debt rather than uses to which the borrowed funds are put (in some cases, such as auto loans and education loans, the two are synonymous). I discuss the *uses* of debt further below.

The rise of mortgage debt merits particular attention. Mortgage debt accounts for the majority of all household debt, as well as *virtually all of the growth* in the debt-to-income ratio since 1989 (Dynan and Kohn 2007:14). Mortgage debt can be divided into two different types: loans used to purchase a residence, and loans secured by the primary residence but intended for other purposes, such as home improvement/renovation, investing in one's business, education, and personal consumption. The latter category includes home equity loans (HEL), home equity line of credit (HELOC), and additional equity extracted when refinancing a primary mortgage ("cash-out refinance").

[Figure 2 here]

As shown in Figure 2a, housing purchase loans represent the largest single source of debt, as well as largest source of absolute debt growth over the study period. However, as shown in

figure 2b, home equity borrowing represents the fastest growing source of household debt. Real outstanding home equity debt increased over 1000% from 1989-2007. And its share of total outstanding debts grew from 5% to 20% across this same period. Mortgage debt for other real estate (typically for vacation or investment properties) also accounts for a significant portion of total outstanding loans, approximately 10% in 2007. Altogether, debt backed by real estate accounts for approximately 80% of total household debt across the study period.

Education loans, auto loans, credit card debt, and other debts are shown in the top four series of the figures. These comprise a relatively small portion of overall debt compared to mortgages. Auto loan balances grow only slowly across this period, and decreased as a portion of total debt. Education loan balances quadrupled to over \$315 billion in constant (year 2000) dollars by 2007. This growth reflected both increasing out-of-pocket costs and increasing numbers of students attending colleges. Still, education loan balances accounted for only 3.4% of total household debt in 2007. Rapidly growing educational loan burdens are concentrated within a relatively narrow demographic band of recent cohorts.

According to the SCF data, the growth of revolving credit card debts account for only about 6% of the overall increase in the debt-to-income ratio from 1989-2007. It is worth noting that the SCF figures for credit card debt include only carried balances (balances remaining after the monthly payment). For this reason estimates of credit card debt from the SCF tend to be significantly lower than those reported in the Federal Reserve Flow of Funds data.⁴ Another reason for the relatively slower growth of credit card debt after 1998 is that many households turned to lower-cost home equity loans to finance consumption.

Debt growth and the Housing Bubble

⁴ Zinman (2009) presents evidence that the SCF underestimates credit card debt considerably, and by a factor which has risen over time. I make no effort to adjust for this in the present context.

The outsized role of mortgage debt puts housing at the center of any account of debt growth (Dynan and Kohn 2007). The rising stocks of primary purchase mortgage debt, home equity debt, and real estate investment debt must all be understood against the backdrop of an unprecedented housing price bubble that began during the 1990s and accelerated through 2005. A context of rapidly rising house prices could prompt households to take on larger mortgage debts through several distinct mechanisms.

First, rising house prices forced many would-be homeowners to borrow more money in order to afford a house, resulting in more highly leveraged mortgage loans over time. At the same time, rising house prices also served to justify these high leverage debts by making homebuyers confident that their equity would continue to grow relative to the loan principal (Akerloff and Shiller 2010). Price appreciation also encouraged many to purchase investment or vacation properties. According to the National Association of Realtors, 40% of single-family home purchases in 2006 were for second- or investment homes.

Second, housing price growth promoted debt-funded consumption for non-housing uses by furnishing existing homeowners with greater stocks of home equity against which they could easily borrow. This has been referred to as the “House-as-ATM” phenomenon.⁵ Greenspan and Kennedy (2008) have developed the most comprehensive aggregate data on home equity extraction. Unlike the SCF data, which reports *net outstanding stocks* home equity debts, the Kennedy-Greenspan data reports *annual flows* of equity borrowing against households’ primary residences. The shaded area in figure 3 shows total gross equity extraction for each year in

⁵ There is a lively debate among economists who seek to quantify “wealth effects,” or the marginal propensity to consume in relation to changes in the value of households’ real estate and equity portfolios (e.g. Bostic et al 2009). For the purposes of the present analysis, the important fact is that borrowing against home equity became the most prevalent and fastest-growing mode of debt-funded consumption during the 2000s.

constant dollars. This is further broken down by colors indicating the mode of equity extraction: either HEL/HELOC or “cash-out refinancing,” which is the term for when a homeowner refinances an existing mortgage for a greater amount than the existing principal. At the height of the housing bubble from 2004-2006, households were extracting over \$500 billion of home equity debt annually. Equity withdrawals could be used to fund investments such as home improvements, direct consumption expenditures, or indirect expenditures through repayment of other debts such as credit card balances. I discuss detailed breakdowns of loan uses further below.

[Figure 3 here]

New Borrowers

In addition to newly prevalent *modes* of borrowing, a second way consumer credit markets grew was by expanding the *population* of borrowers. Legal rulings and technological innovations spurred the development of “risk-based pricing” models, wherein lenders utilized price discrimination (higher interest rates) rather than denying credit to those deemed risky. This meant that previously excluded households gained greater access to credit markets. Indeed, the profit margins on high interest credit cards and sub-prime mortgages encouraged lenders to market these products aggressively. Racial and ethnic minorities were especially targeted for high-cost loans (Dymski, Hernandez, and Mohanty 2011).

This so-called “democratization of credit” meant that a growing portion of the population carried some non-zero quantity of debt. From 1989-2007, the percentage of households with debt holdings increased from 72% to 77%. The rate among black- and Hispanic-headed households grew more steeply, from 69% to 78%. Increasing participation was also age-stratified. Debt holding among older households (over 55 years of age) increased from 51% to 63%, while younger households (under 35 years) exhibited a more modest increase of 4%. The rate for middle-aged households (35-55) remained stable at approximately 87%.

Although widening credit availability altered the demographics of credit market participation, its effect on aggregate debt-to-income levels was minimal. Dynan and Kohn (2007) present evidence from a simple counterfactual simulation showing that the growing proportion of borrowers in the population accounts *at most* for about 13% of the aggregate increase in debt-to-income (and probably significantly less). Rather than the expansion of credit to more borrowers (i.e. an increasing proportion of non-zeros in the population), aggregate household debt growth was driven predominantly by increasing *quantities* of borrowing. It is to explanations of this increase that I turn next.

Explaining Rising Indebtedness

What prompted U.S. households to increase their borrowing so dramatically during the 1990s and 2007s? As discussed above, we have two basic sets of overarching stories. Both take the increasingly easy availability of credit as a given, but each highlights different demand-side factors that prompted households to take on ever-greater debts. Empirically, each implies different distributional patterns of indebtedness across the population, different attitudinal correlates of indebtedness, and different uses of borrowed funds contributing to its growth.

Middle-Class Squeeze

The most prominent and influential account argues that a confluence of income stagnation, privatization of risks, and rising basic costs of living for the middle-classes drove the debt boom by forcing households to borrow in order to compensate for shocks and maintain their existing standard of living (e.g. Leicht 2012).

This middle-class squeeze is well-documented. Income gains from rising productivity since the 1980s have been captured almost entirely by those within the top 10% of the income distribution, and especially within the top 1% of the distribution (e.g. Saez 2009). Real incomes for the remainder of the population were essentially flat over this period; those moderate

increases that did occur were attributable entirely to increased working hours. Downward pressures on wage incomes were particularly pronounced in the middle- and lower-middle portions of the occupational structure, as union power and pay premia declined, and “middle-skill” white-collar administrative jobs became subject to automation and outsourcing (Autor, Katz, and Kearney 2006). Patterns of new job creation during the 1990s similarly reflected a hollowing of the middle portions of the job structure (Wright and Dwyer 2003). In terms of income, the biggest losers on average have been men who lack a college education.

Meanwhile, transformations in the labor market also made Americans’ economic livelihoods less secure throughout the occupational structure (Hacker 2006; Leicht and Fitzgerald 2006; Western et al. 2012). Dozens of studies have documented how organizational restructuring and the emergence of new types of precarious work arrangements subjected workers to increasing rates of job loss, less stable employment and incomes, and often more permanent downward mobility (for reviews see e.g. Fligstein and Shin 2004; Mishel and Bernstein 2007; Kalleberg 2009; Hollister 2011).

The effects of this new risk economy on household income are apparent in the SCF data on subjective assessments of recent real income trajectories. Respondents are asked to report whether their household income grew less than, greater than, or roughly equal to prices for the things they buy over the preceding five years. The percentage reporting positive real income growth decreased from 28% in 1989 to 18% in 2007, while the percentage reporting negative growth increased from 31% to 42% over the same period. These trends suggest that an increasing proportion of Americans perceive themselves to be experiencing downward income mobility.

Meanwhile, the other side of the squeeze was the rapidly rising costs for basic pillars of a middle-class lifestyle. The real cost of attending a four-year college (increasingly viewed as a necessity for economic success) increased by over 160% from 1989-2007 (U.S. Department of

Education 2010). Real average *out-of-pocket expenditures* for healthcare services increased by 79% across the same period – not counting the rapid growth of personal contributions to health insurance premiums (U.S. Census Bureau 2012). And real average house prices increased 63% from 1987-2007 (Shiller 2009), making the American Dream of homeownership an increasing leveraged affair.

The basic facts of the economic squeeze on middle-class households are well established (e.g. Leicht and Fitzgerald 2006). It is also clear that borrowing operated increasingly as a social safety net for households who were experiencing economic strains (e.g. Porter 2012). But is less clear how much explanatory leverage that transformation provides on the overall growth of household leverage. To what extent were those households who were being left behind in the labor market or left exposed by the retrenchment of social welfare driving the aggregate debt growth? If leverage rose as a compensatory response to the middle-class squeeze, then several distinct empirical implications follow:

First, debt-to-income growth ought to be greater where the pressures of the squeeze were being felt most acutely. In particular, we would expect rising indebtedness to be driven by middle- and especially lower-middle income households who were struggling to remain economically afloat and avoid downward mobility. We would expect to see higher debt-to-income ratios among these households than among the poor, the affluent, or the upper-middle classes, for whom the pressures of the squeeze tended to be less severe.⁶

Second, the squeeze thesis predicts that debt growth was driven disproportionately by households who were experiencing negative or stagnant income growth. This would imply that

⁶ Conceptualizing and measuring social class (and particularly “middle-class”) is a longstanding topic of debate among sociologists. Because the SCF lacks sufficient information to generate standard class measures (e.g. occupational categories), I follow other recent studies and use income levels as a basic working operationalization.

households who reported negative or stagnant incomes over the preceding five years would be more deeply indebted than positive income household during the height of the bubble. Note that income stagnation could be driving debt growth in the aggregate through one or more conceptually distinct processes. First, there could be an increasing effect over time of downward income trajectory on debt levels. That is, the propensity to take on debt may have increased more steeply for those facing downward income pressures than for those with growing real incomes. Second, if households tend in general to respond to negative income shocks by taking on more debt, then the growing number of households with negative real income growth over the preceding five years could have contributed to increased debt levels even without any over-time change in the *magnitude* of association between recent downward mobility and debt levels.

Third, we know that the new labor market has been especially unforgiving to those without a college education. Less educated persons faced a growing non-college pay penalty, and a diminishing supply of lower-skill, living-wage jobs during this period. Moreover, those with lower education were more likely to experience downward mobility in the aftermath of involuntary job loss during the 1990s, as they found their skills “outmoded”. These factors suggest that *ceteris paribus*, debt growth during this period would be more heavily concentrated among those with lower educational attainment – particularly those without a college degree.⁷

Fourth, the squeeze account clearly implies that we should see a growing portion of total debt-to-income to accruing from medical, educational, and basic living expenses.

Finally, some formulations of the middle-class squeeze argument imply a behavioral logic that might be characterized as “reluctant necessity” (e.g. Warren 2004). Growing indebtedness does not reflect a shifting cultural orientation toward borrowing or a purposive embrace of

⁷ I treat the household’s educational attainment as the highest degree attained by anyone in the household.

financial leverage so much as an increasing functional need for credit. That is, Americans took on more debt because circumstances pushed them to the point that they felt they had to. For instance, in this view home equity borrowing grew during this period because equity increasingly became the sole cushion of savings against which many middle-class families could weather the ups and down of the labor market, cover unexpected outlays, and help pay for their children to attend college (Warren 2004). If growing indebtedness was driven by defensive efforts to get by and compensate for tougher times, then we would expect that those who became more indebted were no more risk-seeking in their avowed economic orientation than other households. In fact, to the extent that households were using debt to escape the effects of labor market dislocations, we might expect that highly indebted households would report being less positively disposed toward financial risk than would less indebted households.

Financial Culture, Mass Investment, and Consumerism

From the perspective of the second theory, the key to explaining the debt boom lays in the fact that easy credit supply coincided with an emergent financial culture. In contrast to the implicitly defensive conception of borrowing behavior in the squeeze theory, recent work in economic sociology emphasizes the parallel diffusion of more aggressive, entrepreneurial financial management repertoires among U.S. households (Davis 2009; Langley 2008; Fligstein and Goldstein 2012). This involved a shift in the operative meaning of debt: not merely as tool by which squeezed households could compensate for declining absolute purchasing power (i.e. debt as a tool to “get by”), but as an accessible tool by which all types of households *enhance* their socio-economic position through leveraged investing (Cynamon and Fazzari 2009). Whereas the squeeze account implies a functionalist logic of increased demand for credit, this account is driven by an implicit qualitative shift in cultural orientations toward borrowing. As I elaborate below, this argument does not deny the acute force of the middle-class squeeze in

straining households; but it suggests that observed levels of debt-to-income will be less strongly associated with the degree to which households are experiencing economic strains *per se* than with the degree to which they have absorbed the cultural logic of the financial economy and embraced more aggressive dispositions toward financial risk-taking. In developing this account, I seek to use economic sociology to provide a more culturally-grounded micro-foundation than that offered by political economy theories (DiMaggio 2002; Beckert 2013).

Several studies have argued that that such a finance culture began to take hold in the U.S. during the 1990s (Martin 2001; Langley 2008; Davis 2009; Fligstein and Goldstein 2012). This can be broadly construed as a process whereby households reorient toward financial strategies (borrowing, investment) as a toolkit or “repertoire” for navigating their economic lives. Such an idiom involves reconceptualizing a household’s wealth (namely housing) from savings into financial assets that can be actively managed. Davis presents a strong version of this argument in which he characterizes the U.S. in the early 21st century as a “portfolio society,” in which “investment becomes the dominant metaphor to understand the individual’s place in society” (2009:193). The overarching ethic of this culture was to ‘make your money work for you.’ (Langley 2008), which required that individuals become “their own financial economists” (Davis 2009). Similarly, Alex Preda raises the prospect of the U.S. as a “society of speculators,” where individuals experience an “endless, diffuse, yet ubiquitous exhortation to trade and invest: [...] ‘Invest, or the future will be closed to you’” (2009:4).

Fligstein and Goldstein (2012) use attitudinal and behavioral data from the SCF to track the extent to which Americans absorbed this cultural logic. They find that a growing portion of Americans – particularly upper- and upper-middle income ones – embraced more aggressive and financial orientations during the 1990s. One indicator is whether respondents self-identify as someone who takes aggressive, above-average financial risks in order to capture above average

returns. This item provides some indication of whether people consciously view themselves as trying to profit by participating in the finance game. There is a pronounced secular increase throughout the 1990s in the proportion of respondents who identify as “above-average” risk-takers. However, this change is heavily graded by income: the proportion who identify as taking “above-average” levels of financial risk increases sharply as one moves up the income distribution, and the change over time was concentrated within the top two income quintiles: By 2007 those in the top two income quintiles were three times as likely as those in the bottom two quintiles to identify as an above-average risk-taker. Although the trend toward taking more aggressive risk flattened after the 2001 stock market crash, transformations during the 1990s may have set the stage for the subsequent debt-funded housing bubble by normalizing financial risk-taking among a greater number of people and by accustoming them to expect high returns (Akerlof and Shiller 2010).

Another attitudinal indicator of financial culture is changing norms about debt-funded consumption (Fligstein and Goldstein 2012). In the nine year period from 1998-2007, the percentage of respondents who believe it is “right for someone like me to borrow in order to fund expenses if/when one’s income declines” increases steadily, from approximately 42% to 53%.⁸ Interestingly, this attitudinal trend was at least as pronounced among those with positive real income growth over the preceding five years, those with a positive savings rate, and those with relatively lower debt-to-income ratios. Thus, norms about the appropriateness of debt-funded consumption loosened independently of respondents’ own economic situation. This suggests a secular shift toward a more expansive understanding of debt as a financial tool – not merely a justificatory response among those who faced downward income pressures, carried high levels of

⁸ In contrast, rates of agreement about borrowing for particular consumption items (vehicles, educational expenses, vacations, etc.) remain quite stable over time.

debt relative to income, or whose spending exceeded income (Fligstein and Goldstein 2012).

One key implication of this emergent financial culture is that it involves a shift in the operative meanings of debt and the logics of borrowing. Beginning in the 1990s, leveraged investment was increasingly touted as an upward mobility strategy by both media outlets and the growing financial self-help industry (Fridman 2011; Langley 2008). By borrowing to purchase real estate and other high-appreciation assets, savvy people who played the market could make lots of money on capital appreciation. During the 2000s housing bubble, millions of individuals became small-scale non-professional investors: At least one fifth of all mortgage loans in 2005 were to purchase non-occupant investment properties. Occupant homeowners also increasingly treated their residences as assets and borrowed against accumulating equity in order to reinvest in their assets (Davis 2009). The proportion of homeowners who carried home equity debt increased from 12% to 28% between 1992 and 2007, and the most frequent reported use of borrowed equity during this period was for home renovations and improvements (Fligstein and Goldstein 2012). This fits with the view that homeowners increasingly saw their houses as investments and utilized debt-funded improvements in order to maximize their market value and increase salability (e.g. by installing luxury kitchens).

Empirical Implications. This discussion implies that patterns of debt growth will track the extent to which households have embraced these new financial repertoires, rather than the degree to which they are necessarily facing the most acute pressures of the income squeeze. Empirically, we would expect those who avowed a more aggressive approach toward financial investment would exhibit higher levels of indebtedness. We would also expect that debt portfolios among the most highly indebted households were driven increasingly by outlays for investment and related discretionary lifestyle purposes, such as high-leverage housing purchases, home renovations and additions, and second homes.

It is important to note that a financial culture account is not necessarily independent of increasing income inequality. As noted above, debt-funded investment was often touted as a social mobility strategy by which risk-takers could partake in a share of the immense wealth that was accruing increasingly to a small band of the super-rich. Moreover, the motivation to try to boost one's economic position through aggressive financial leveraging may be partly endogenous to the increasing dispersion of the socio-consumptive hierarchy. For instance, Robert Frank (2007) develops a consumption-driven relative inequality model in which the rapid, asymmetric growth of top-end incomes has induced an arms race for positional goods as everyone else tries to keep up.⁹ But note that the analytic role of inequality in such a model differs from that of the squeeze theory insofar as a) the effect of inequality is indirect, and b) debt growth is driven by financially aggressive households trying to compensate for increasing *relative* inequality (Duesenberry 1949).

Life-Cycle Theories and Demographic Change

Both of the sociological perspectives outlined above differ from conventional micro-economic theories of household borrowing behavior. Economists traditionally approach borrowing behavior in terms of a "life-cycle" or "constant income" model. In this account, households borrow at a level that allows them to smooth their consumption over the life-course

⁹ As the affluent expand their consumption, they boost the aspirations of those below them, which then reverberates down the income distribution in a cascading fashion. Van Treek (2012) presents evidence from Gallup polls showing that this ratcheting of consumption standards has in fact occurred since the late 1980s. From 1967-1987 the median of respondents' perceived "minimum necessary income to live on" declined slightly in real terms even as actual median incomes rose. In contrast, between 1987-2007 the median inflation-adjusted perception of the minimum necessary income grew by over 40%. Other evidence furthermore suggests that rising normative consumption standards have occurred across the income distribution. According to the 2006 General Social Survey, a majority of even those comparatively well-off respondents in the 70th-90th family income percentiles claimed that income from employment was insufficient to cover their family's monthly expenses (author's calculation from GSS data).

in accordance with expectations of future income. This typically involves borrowing heavily during the earlier stages of one's working life before eventually accumulating savings and assets, which are then depleted during retirement. Life-cycle models highlight the importance of both individual- and population-level demographic factors in shaping demand for credit.

Although few would stand by the life-cycle model as a *sufficient* explanation of the rapid recent secular growth of indebtedness (e.g. Barba and Pivetti 2009), it is possible that changes in the demographic composition of the population may have contributed alongside structural changes to the recent debt boom. Dynan and Kohn (2007) suggest that the movement of the large baby-boom cohorts through typically high-debt life-stages during the 1990s boosted aggregate debt levels independently of any behavioral changes. They also suggest that a growing proportion of college-educated persons would contribute to growing debt levels, as college educated persons tend to have higher relative expectations of future income growth. Warren and Tyagi (2004) offer evidence that the movement of women into the labor market coupled with high fixed costs of child-raising have caused households with children to assume significantly greater debts than those without children. I control for these and other "demographic" confounds in the regression analyses reported below.

A note on housing purchase debt

It is worth noting that both theoretical perspectives imply increasing mortgage debt from housing purchases, but for differing reasons. The squeeze argument attributes growing mortgage debt to the increasing cost of buying a house in a decent school district, which forced middle-class families to take out larger loans relative to income level in order to live in a decent school district (e.g. Leicht 2012). The financial culture argument points to the fact that many home-buyers treated housing as an investment opportunity and borrowed heavily in order to purchase "as much house as possible." For instance, the median size of new single-family housing units

increased by over 25% from 1987-2007 (U.S. Census Bureau 2011).

Underlying these divergent perspectives is the very real duality of houses as both investment assets and use-values (i.e. shelter). Unfortunately it is difficult to disentangle this particular element of the debt puzzle in the context of the present paper because the SCF lacks information on respondents' geographic locations and housing attributes (size, number of rooms, etc.). Without controlling for housing cost variations across localities it is difficult parse the extent to which mortgage debt levels grew because houses were becoming more expensive relative to the typical households' income, or because the typical home-buyer was leveraging aggressively in order to buy a more extravagant house.

Methods

To assess these alternative accounts I analyze the correlates of household debt-to-income ratios in the 1989-2007 SCF surveys. Each SCF panel includes contains 4,000-4,500 household observations. The debt-to-income ratio is a standard measure of household leverage (Dynan and Kohn 2007). It is preferable to the debt-to-asset ratio insofar as the debt-to-income ratio captures debt levels relative to one's ability to repay, whereas asset values will reflect the transient dynamics of the housing bubble. I used pre-tax reported income to construct the ratio.

I begin by charting basic descriptive trends in household debt-to-income ratios, broken down by income levels, income trajectories, and the uses for which respondents reported borrowing. I then estimate a series of multivariate regression models for each data panel in order to examine the evolving association between indebtedness and household of income level, income trajectory, and risk orientations, net of demographic characteristics. Survey weights are used in all descriptive analyses, but not in multivariate regressions.

Uses of Debt. SCF respondents are asked to identify the uses of borrowed funds for each

loan they have. (For some types of loans, such as education loans, the loan use is synonymous with the loan type). The SCF then categorizes these reported uses into ten different groups. The SCF's categorization of debt uses is imperfect for a number of reasons. One problem is that credit card debt is treated separately as its own category, which means it is impossible to pick apart the widely varying types of expenditures contained within credit cards balances. The SCF sub-categorization is also rather ambiguous in some instances. Debts accrued in order to "pay bills" and cover other "living expenses" do not indicate the type of bill. Notwithstanding these limitations, examining reported debt uses provides some indication of linkages between patterns of consumption activity and patterns of debt growth.

I calculate debt-to income ratios for the following debt uses by summing across all of the respondent's home-equity loans, installment loans, and store-based financing loans: vehicle purchase debt; medical and educational expenses; "bills" and general living expenses; investments (including properties and housing renovations); credit card balances; and highly discretionary expenditures.¹⁰

For each respondent I calculated the ratio of debt for each consumption category to the respondent's total household income. I then take the survey-weight-adjusted average of the ratios for each category across the full sample of households. This provides the overall contribution of each consumption category to the aggregate household debt-to-income ratio. I also performed the same calculation for the most indebted quintile of households in order to examine whether the composition of debt-funded usages differs among the most highly indebted households.

Regression Analysis

¹⁰ Of course there is no objective way to define highly discretionary consumption. To construct the discretionary category I combine the SCF sub-categories that include electronics, recreational items and services (campers, motorcycles, hot tubs, billiards tables, gym memberships, etc.), and special expenses such as vacations and wedding parties.

I estimated a weighted linear regression model of the natural logarithm of household debt-to-income ratio on a vector of household-level covariates.¹¹ Even after logging debt-to-income ratio, its distribution is skewed and diagnostics indicate the presence of substantial numbers of outliers. Because outliers will bias OLS, I utilized the M-estimator robust regression technique (Huber 1981), implemented in Stata using the *rreg* routine. This approach uses an iteratively reweighted least squares algorithm to downweight outlying observations rather than throwing them out of the analysis entirely. The M-estimator is preferable to other robust regression techniques in the present context because it better accommodates categorical explanatory variables. Standard OLS also yields substantively very similar results. I did not use sampling weights in the reported regression analyses, though doing so yields very similar results.

Explanatory variables. I regressed the natural logarithm of the debt-to-income ratio on an array of household-level covariates within each data panel. The independent variables of interest include the household income level, 5-year real income trajectory (positive, negative, or stagnant), the respondent's expressed disposition toward financial risk-taking (no/below-average risk, average risk, above-average risk), and educational attainment (less than high school diploma, high school diploma, some college, 4-year college degree or more). Note that I measure household income level using a six-category series of dummy variable indicators, which represent the household's position in the income distribution (0-20th percentile, 20-40th percentile, 40-60th percentile, 60-80th percentile, 80-90th percentile, or 90-100th percentile). I do this in order to avoid problems stemming from the fact that the interval-level measure of

¹¹ As a robustness check I also estimated equivalent models of debt-to-income, excluding debts from the purchase of a primary residence. For these models non-housing purchase indebtedness denotes all debts other than first- or second- lien purchase mortgages for the primary residence. This means that it does include vacation- or investment housing purchases. These models net very similar patterns of results for the income level and trend variables. Thus although housing purchase debt is the largest single category of debt, the basic findings here are not driven solely by homeownership.

household income is the denominator in the dependent variable. In households with two or related more adults, I measured educational attainment as the highest degree earned by either spouse.

I also specified cross-product interaction terms between each of the theoretical variables in order to explore whether particular configurations of household attributes tend to be associated with higher levels of indebtedness.

The models include controls for family structure, total number of persons in the household, age, age-squared, and racial/ethnic group. I coded age and racial/ethnic category as those of the survey respondent. I restricted the analyses to those households in which at least one adult reported being in the labor-force because the income levels of retirees are often a poor indicator of their economic class status (Dynan and Kohn 2007).

Results

I begin below by presenting descriptive evidence on degree to which the distributional and compositional patterns of debt growth are consistent with each of the theories above. I then report multivariate regression models of household debt-to-income ratios.

Who drove the increase in household debt?

Debt levels across the income distribution. The squeeze theory implies debt levels increased most within the middle-class. This is broadly true, but with the significant caveat that deepening indebtedness was most pronounced within the upper-middle portions of the stratification structure – not the lower-middle portions where the squeeze was most acute. Figure 4 shows median debt-to-income ratios for households with any debt by income deciles at the height of the

debt boom in 2007.¹² The lower section of each bar represents the median level in 1989. The upper section represents the change from 1989-2007. The figure clearly shows how debt levels rose across the full income distribution. Median debt to income ratios more than double within most income deciles between 1989 and 2007. Although the overall shape of the distribution does not change significantly over time, growth is especially pronounced within the upper-middle portion of the distribution. In fact one of the most notable patterns in the graphs is the upward gradient of debt-to-income between the 30th and 90th percentiles. By 2007 the typical household at the 50th percentile of the income distribution carried a debt-to-income ratio of approximately 1.25. But for those between the 70th-90th income percentiles the median ratio was almost 1.6. This represented an increase of .9 since 1989. It was also more than twice the median level for households in the 20th-40th percentiles.

[Figure 4 here]

The fact that both the levels and change in the debt-to-income ratio were significantly greater for upper middle-class households than lower middle-class households is anomalous from the perspective of the squeeze theory. Real household income at the 80th percentile grew 18% from 1990 to 2007 (U.S. Census Bureau 2010). Though modest compared to gains among the top 1% of households, this rate of income growth was still more than twice that at the 40th percentile. This means indebtedness was higher within that portion of the middle-class for whom the pressures of income stagnation were comparatively less acute. A similar pattern is apparent

¹² Including only those households with any debt permits a focus on median borrowing levels while netting out the effects of changes in credit market participation rates. For this and other tabulations below I include only households in which the respondent is under 65 years of age (Dyner and Kohn 2007).

in plots of the *mean* debt-to-income ratio (not shown).¹³ Overall, the patterns across the income distribution suggest that deepening indebtedness is a story of the middle-class, but it is especially a story of the *upper-middle class*.

Debt by Income Trajectory. Do households who have experienced income stagnation or downward income mobility tend to carry higher debt burdens as suggested by the squeeze theory? And how has this association changed over time?

Figure 5 shows the median household debt-to-income ratio among households with any debt holdings, broken down by the household's 5-year income trajectory. Again we see indebtedness levels increasing over time for all three groups. Households with upward income growth over the previous five years tend to carry somewhat higher debt levels than those with downward or stagnant income growth. This gap does narrow slightly over time, but the clear pattern is one in which indebtedness tends to grow independently of recent income trajectory.

[Figure 5 here]

Of course, income trajectory and income level are highly confounded. But even when broken down by income level (not shown) there is little apparent association between declining or stagnant income and one's debt-to-income ratio. Across the income distribution and across time, households with positive income growth exhibit median debt-to-income ratios that are just as high as those among declining- or stagnant income households. Overall, these tabulations indicate that 5-year income trajectory had far less effect on indebtedness than income level.

Uses of Debt

What sorts of expenditures were driving the increase in debt? In particular, what were the

¹³ A significant difference between the mean- and median debt-to-income ratio is only apparent at the very bottom of the income distribution, where the presence of high-debt/low-income outliers skews the mean upward.

relative respective roles played by borrowing for investment-oriented uses, borrowing for highly discretionary consumption outlays, borrowing for educational, medical, and “general living expenses”?

As discussed above, most of the rising debt-to-income ratio was driven by primary residence purchase mortgages. The weight-adjusted mean debt-to-income ratio for debts accrued from purchase of a primary residence rose from .38 in 1989 to .69 in 2007. Figure 6 displays mean debt-to-income ratios for purposes other than purchasing a primary residence. Figure 6 shows that average debt-to-income ratios increase across all of the consumption categories, though all of them pale in magnitude compared to primary housing purchases. Particularly notable is the sharp increase in the quantity of borrowing to fund living expenses and pay bills. Unreported decompositions show that this trend occurred throughout all but the top 10% of the income distribution, and that the bulk of this increase comes from debt acquired through home equity borrowing. The rapidly growing share of non-housing purchase debts channeled into living costs is consistent with the squeeze account, though it is important to emphasize that this evidence is suggestive due to the ambiguous contents of “bills and living expenses.” The mean ratios of educational and medical debt-to-income also grow substantially, further supporting the idea that non-housing indebtedness was being pushed upward in part by the middle-class squeeze. But unlike bills and living expenses, very little of this debt was came from home equity borrowing.

[Figure 6 about here]

Figure 6 also reveals rising average debt-to-income from investments such as second properties and housing renovations, consistent with the financial culture argument. Again, unreported decompositions reveal that this growth occurred across the top 80% of the income distribution, though especially within the top 40%. Although the gross quantity of outstanding

debt for investments is significantly larger than for the other consumption categories, the fact that it tends to be somewhat more concentrated among upper-middle income households dampens its contribution to the average debt-to-income figures reported in figure 6. Altogether, the breakdown of debt uses provides evidence to support both the squeeze theory and the financial culture theory. Most debt was being used to fund purchases of primary residences, followed by investments, and then living, educational, and medical expenses.

It is worth noting that the data here offer very little evidence to support the idea, widely repeated in contemporaneous media accounts, that debt growth was driven by highly discretionary consumer expenditures such as big-screen television purchases, vacations, and lavish wedding parties. The quantity of outstanding debt used to fund such highly discretionary consumption expenditures did grow in relative terms, from virtually zero in 1989 to a mean level of about 1.7% of income by 2007. But this represented only a small fraction of total outstanding debt, and accounted for only 2.5% of the overall increase in the debt-to-income ratio across this period. Highly discretionary forms of debt-funded consumption were becoming somewhat more common, but they do not explain the overall debt growth to any significant extent.¹⁴

Regression Results

The univariate results above offer suggestive evidence on the distributional patterns of debt growth. What do multivariate analyses say about how the net effects of particular household attributes? Because the large number of indicator variables and interaction terms in the model

¹⁴ The present operationalization of discretionary expenditure debts could underrepresent actual levels if households underreport discretionary uses of borrowed funds due to stigma. Also, the present measure does not include credit card debt, which is the financing source for much consumer spending. Still, even under the highly liberal assumptions that SCF figures underreport debt from discretionary uses by half, and that half of all outstanding credit card debt accrued from highly discretionary purchases, the discretionary category would still account for less than 11% of the overall growth of debt-to-income from 1989-2007.

render coefficient estimates difficult to interpret, I use graphical plots to convey the substantive results of the regression analysis.¹⁵

Figure 7 shows the estimated debt-to-income ratios over time across the six income quantiles, holding all other variables in the model constant. The pattern here confirms the predominant role of the upper 60% of the income distribution in the growth of indebtedness. In 1992, one's place in the income distribution had comparatively little effect on one's predicted debt-to-income ratio net of other attributes. After 1998, however, debt-to-income levels grow at a significantly faster pace within the 40th-90th percentiles (and especially the 60th-90th percentiles), net of controls. By 2007, being in the 60-80th or 80th-90th income percentiles is associated with approximately 28-35% greater debt-to-income ratio compared to being in either of the bottom two income quintiles, net of all other differences between these income groups, including varying degrees of risk tolerance.

[Figure 7 here]

Given the above result, it is interesting to ask how the effect of income level might vary across income trajectories? The univariate trends presented in Figure 5 above suggest little association between a households' medium-term (5-year) income trajectory and its accumulated level of indebtedness. However, one possible reason for this weak overall association is that income trajectory might operate in heterogeneous ways across the income distribution: downward or stagnant trajectories might be associated with greater accumulated indebtedness in the lower-middle portions of the income distribution where households are experiencing more strain, but this is offset by a divergent process whereby upwardly mobile, aggressive borrowers tend to take on more debt at the upper end of the income distribution. This could mask the degree

¹⁵ Tabular estimation results are available upon request.

to which a subset of downwardly mobile households had become acutely more indebted by 2007.

Figure 8 offers some evidence to support this. Figure 8 shows the estimated debt-to-income ratios in 2007 by household income trend (previous five years) and income quantiles, holding all other variables constant. Here again we see in a multivariate context that household income dynamics play a surprisingly minor role in shaping the accumulated debt-to-income ratios, but for one significant exception: within the 40th-60th income quintile, those with downward income trajectory tended to be approximately 12% more leveraged than upwardly mobile households. The estimated debt-to-income levels for this group are comparable to otherwise similar households in the 80th-90th percentiles of the distribution, though this is only true after holding their differing risk orientations constant.

[Figure 8 about here]

Figure 9 plots the partial net effects of variations in respondents' professed orientations toward risk (relative to the "average" category). Here we see that those who were more oriented toward risk-taking tended to exhibit higher levels of debt-to-income, net of all other variables in the model. The magnitude of this association increased over time, suggesting that debt growth was particularly pronounced among those who had absorbed the finance culture and were playing the market in search of high returns. So, by 2007, those who embraced an "above-average" level of financial risk exhibited a 15% greater level of debt-to-income compared to those who took below-average risks, holding everything else constant. This pattern provides considerable support for the financial culture theory. Although the association does not establish a causal relationship at the individual level, it does show that those who were the most indebted tended to see themselves as more risk-oriented financial actors.

[Figure 9 about here]

One interesting question raised by the results in figure 9 is for whom the effects of the new

financial culture were most operative? As discussed above, the cultural diffusion of risk-orientations tended to be relatively more concentrated within the upper portions of the income distribution. Interestingly, however, if we were to plot the marginal effect of professing above average versus below-average risk-orientation on debt levels in the 2007 data panel, we see that its effect is most pronounced within the middle of the distribution [not shown to save space]. Within the 40th-60th and 60th-80th income quintiles, above-average risk takers tend to be 25-30% more indebted than below-average risk-takers, compared to a difference of only 10% in the bottom two quintiles, and less than 7% in the top quintile. Thus, although risk-oriented financial culture is associated with greater debt levels across the income distribution, these orientations “matter” the most for debt accumulation within the middle of the distribution.

Of course income levels, income trajectories, and cultural orientations toward risk may not operate as isolated variables. Figure 10 shows predicted debt-to-income ratios for several *specific configurations* of respondent attributes (income level, income trend, education, and risk tolerance) in 1989 and 2007, holding all other variables (e.g. age, family structure) constant. These predicted values are derived from the same regression specification as above, and they take account of both the main effects and the interaction terms in the model. For each respondent profile, the left (blue) bar represents the predicted debt-to-income ratio in 1989, and the right (red) bar represents the predicted debt-to-income ratio in 2007.

[Figure 10 about here]

The two columns at top of the figure show predicted levels of debt-to-income for someone with a high-school education, who is currently in the 20-40th percentile of the income distribution, has seen their real income go down over the previous 5 years, and is not oriented toward risk-taking. This is precisely the profile of those whom the squeeze theory would expect to lead the path toward deeper indebtedness. Yet the debt-to-income ratio for this profile hardly changes at

all between 1989 and 2007. In contrast, the predicted debt-to-income ratio for a household where the head was who were college-educated, in the 80th-90th income percentile, upwardly mobile over the previous 5-years, and risk-oriented was over 50% greater in 2007 than in 1989. The results in Figure 10 provide perhaps the clearest evidence against any strong version of the middle-class squeeze explanation. Those demographic groups for whom the squeeze was most acute did not exhibit a correspondingly sharp growth of indebtedness.

Discussion and Conclusion

The rapid rise of household debt is one of the most dramatic socio-economic consequences of financialization in the United States economy. While the causes of this trend have been widely discussed in macro-institutional terms, there is very little empirical research that attends to the underlying household-level patterns. This paper has begun filling this gap by developing two theoretical accounts of debt growth and assessing their empirical implications using SCF data from 1989-2007.

The results imply three significant correctives to the theory of the middle-class squeeze as an explanation of deepening household indebtedness: First, although the middle-class broadly defined is at the epicenter of the debt boom, the results show that debt growth was driven by the upper-middle class to a significantly greater extent than the lower middle-class. Throughout the study period, households in the 60th-90th income percentiles carry significantly higher debt-to-income ratios than those in the 20th-40th percentile. This difference grew over time and holds net of demographic characteristics.

Second, the SCF data offers little evidence that income stagnation functioned as a primary propeller of the overall debt boom: Controlling for demographics, accumulated debt-to-income ratios for households with negative or stagnant real incomes over the preceding five years tended to be no greater than those for households with positive real income growth.

Overall, one's position in the income distribution is significantly more informative than one's trajectory, at least as measured by respondents' retrospective reports of real income trajectory.

Third, household indebtedness was positively associated with expressed orientation toward risk-taking, and the magnitude of this association grew stronger over time. This means that those who self-identified as being more financially aggressive tended to carry higher debt-to-income levels compared to less risk-oriented households. This supports the financial culture view (Fligstein and Goldstein 2012), and stands in contrast to the image of debt growth being driven predominantly by defensive, compensatory responses to economic strains.

Together, these results highlight important discrepancies between the dominant social-scientific accounts of household debt growth and the empirical actuality. The supposed linkage between income stagnation, rising inequality, and household debt growth is at the center of much recent theorizing about the political economy of credit and the financial crisis (e.g. Rajan 2010; Harvey 2010). The present findings suggest the need to reevaluate some basic tenets of these arguments. I *do not* mean to suggest that the squeeze theory is “wrong” as a depiction of the causal dynamics of debt growth for a sub-set of households: Many households were pushed ever-deeper into debt as they struggled to remain afloat amid intensifying economic strains and heightened risks (Warren 2004; Porter 2012). But scholars should seek to better delineate the theory's scope conditions and recognize that its overall explanatory power has been significantly overstated.

Instead, the above findings show that the relative winners (or near winners) in the new risk economy played a greater role in swelling leverage: highly-educated, upper-middle-income, positive income trajectory, and avowing a self-consciously aggressive orientation toward financial risk-taking. The high and rapidly growing debt levels among these socio-demographic groups complicates the implicitly functionalist explanatory logic that underlies the conventional

squeeze accounts. This raises important theoretical implications insofar as it suggests the need to rethink the micro-level suppositions that underlie our macro-level theories. Rising credit demand did not simply reflect intensifying socio-economic pressures; it also reflected shifting logics of borrowing behavior as upper-middle class households embraced more entrepreneurial repertoires and utilized leverage as a resource to exploit new opportunities.

It is worth emphasizing that the distributional results reported here are also consistent with observed patterns on savings behavior (Bibow 2010). The savings rate [(disposable income-expenditures)/disposable income] among households in the 60th-80th income percentiles drops into negative territory as early as the late 1990s. Meanwhile, less affluent households (below the 40th percentile) abandoned saving at a much slower pace, maintaining positive rates through 2005 before eventually dropping below zero during the years leading up to the housing crash. These similar patterns for savings lend further credence to the present findings about the role of the upper-middle classes as the primary drivers of rising indebtedness.

Both the findings and limitations of the present analysis point to further research possibilities. First, there is a need for more longitudinal research on household income dynamics and debt growth. The results here lend minimal support to the view that stagnating real incomes were the operative proximate factor that propelled households to take on greater debts. Nonetheless, methodological limitations render the present negative findings suggestive rather than definitive. First, the analysis of the effect of income trends is based on cross-sectional snapshots of debt levels coupled with retrospective reports of 5-year income change. Because *changes* in debt levels are not measured within households, the estimates represent across- rather than within-household effects. Second, because the SCF measures income change using a rather blunt categorical response variable, the results could be subject to problems of measurement error as well as unmeasured compositional differences across income change categories. Finally,

the five-year time-span in the SCF income trend question may be too coarse to distinguish between the effects of short-term income shocks and longer-term stagnation or decline. Analysis of longitudinal data such as the Panel Study of Income Dynamics would allow for a sharper assessment of the relationship between income dynamics and debt growth at the household level over time.

The strong association between risk-orientation and indebtedness also raises provocative implications. For instance, a common story holds that the cultural myth of ever-rising house prices was integral to the debt bubble because it nurtured the perception that one could leverage heavily on housing investments without actually taking on any real risk. In contrast, the findings show a strong positive association between risk-orientation is especially pronounced for housing purchase debt: those with the highest debt-to-income ratios consciously saw themselves as being more disposed toward risk-taking. Such results indicate the need for more sociological research on the cultural dynamics of financial risk-taking in an era of mass-participatory financialization.

The regression results indicate that upper-middle income households tended to carry significantly greater debt-to-income ratios, even after controlling for their tendency to embrace more aggressive risk-taking. There are several mechanisms that might account for this pattern. Of course, upper-middle income households may have simply had access to larger quantities of credit compared to lower- and lower-middle income households. Scholars have focused on the fact that expanding *credit access* during the 2000s was concentrated in the lower portions of the income distribution, and many of the exotic new loan products were aimed at lower-income households (e.g. Rajan 2010:41). However, the present results suggest that the overall effect of rapidly expanding *credit access* at the lower end of the distribution was offset by the fact that upper-middle income households already had larger existing stocks of housing equity available for extraction. Indeed, as shown above, home equity borrowing was the fastest

growing type of debt during the boom.

Another possibility is that aggressive borrowing by upper-middle income households is motivated by attempts to maintain constant consumption standards relative to those in the top 5% or 1% of the income distribution. This is basic thrust of Robert Frank's (2007) theory of top-down consumption cascades. This theory emphasizes how relative inequality at the top of the income distribution promotes competition over positional goods such as houses in highly desirable neighborhoods. The fact that upper-middle income households were going into deep debt to finance housing purchases and housing renovations is consistent with this model insofar as these households face the most pressure to keep up with the wealthy. Future research should examine the role of relative inequality and positional goods more directly.

Related to the above, there remain several further questions concerning the effects of rapidly rising house prices for mortgage debt growth. Unreported specifications show that the distributional correlates of indebtedness are generally similar when mortgage debts for primary residence purchase are excluded. This means that the overall patterns are not driven entirely by increasing mortgage debts for primary residences. However, the lack of geographic identifiers in the SCF data makes it impossible to control for variations in basic housing costs. This in turn makes it difficult to separate aggressive leveraging or price speculation from more defensively oriented efforts to secure decent housing in a decent school district in the face of rising costs. This ambiguity is especially acute for the upper-middle income households who tend to have the greatest debt-to-income levels, but also tend to live disproportionately in high-cost housing markets. An extension of the present analysis will link non-public data on household finances and housing attributes from the Panel Study of Income Dynamics with contextual geographic data on local housing markets. This will permit a more careful unpacking of the role of local real estate markets in shaping housing purchase debt. It will also allow us to begin disentangling the

extent to which mortgage debt levels grew because homeownership was becoming necessarily more expensive relative to the typical households' income, or because home-buyers were leveraging aggressively in order to "buy as much house as possible" during the bubble.

Another implication of the present results is that the demographics of households who contributed most to growing the debt bubble differ from those who were most likely to experience its negative consequences in the aftermath of the crash (such as foreclosure and housing wealth destruction) (e.g. Warren 2004; Porter 2012). More research is needed to account for this mismatch. What are the mediating selection and insulation processes by which some highly leveraged households have been able to avoid these consequences while others lose their homes to bank foreclosure?

Finally, there is the question of causal heterogeneity. The present analysis focuses on the degree to which empirical patterns accord with explanations for the *overall* macro-level growth of household debt-to-income. But the causal dynamics of debt growth no doubt vary across the stratification structure. Parsing out the precise contours of this heterogeneity in greater detail is a worthy subject of study in its own right.

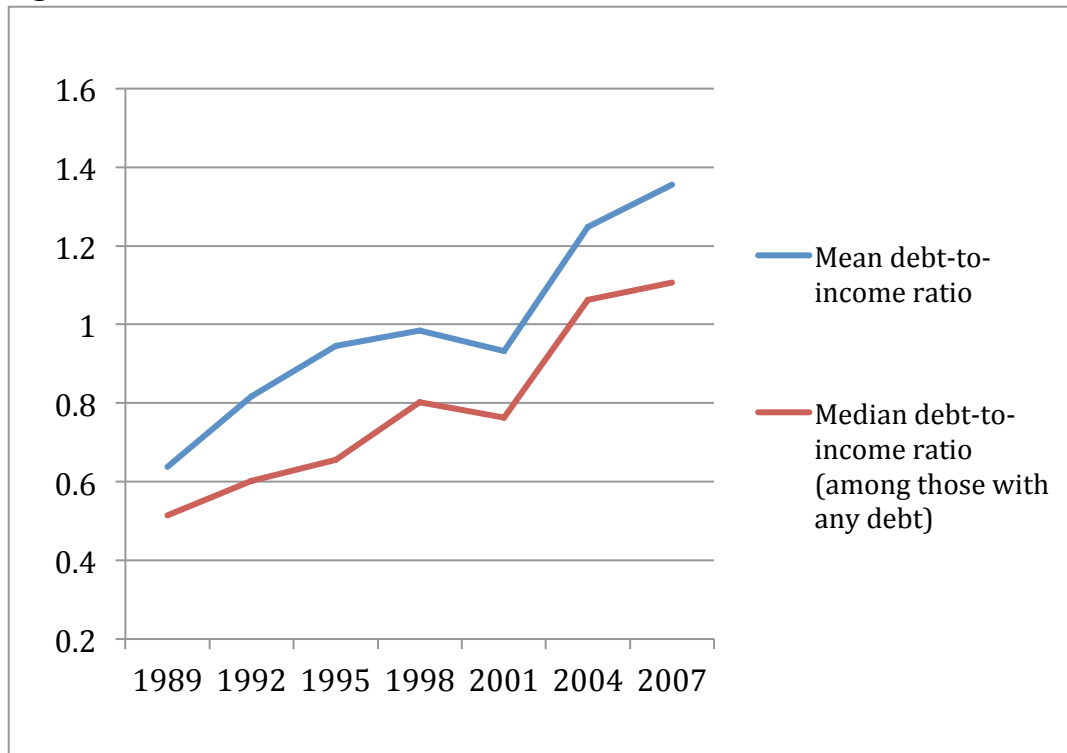
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Figure 1: Household Debt-to-Income Ratio, 1989-2007

Data Source: Survey of Consumer Finances

Figure 2a: Real Outstanding Household Debt Holdings by Type

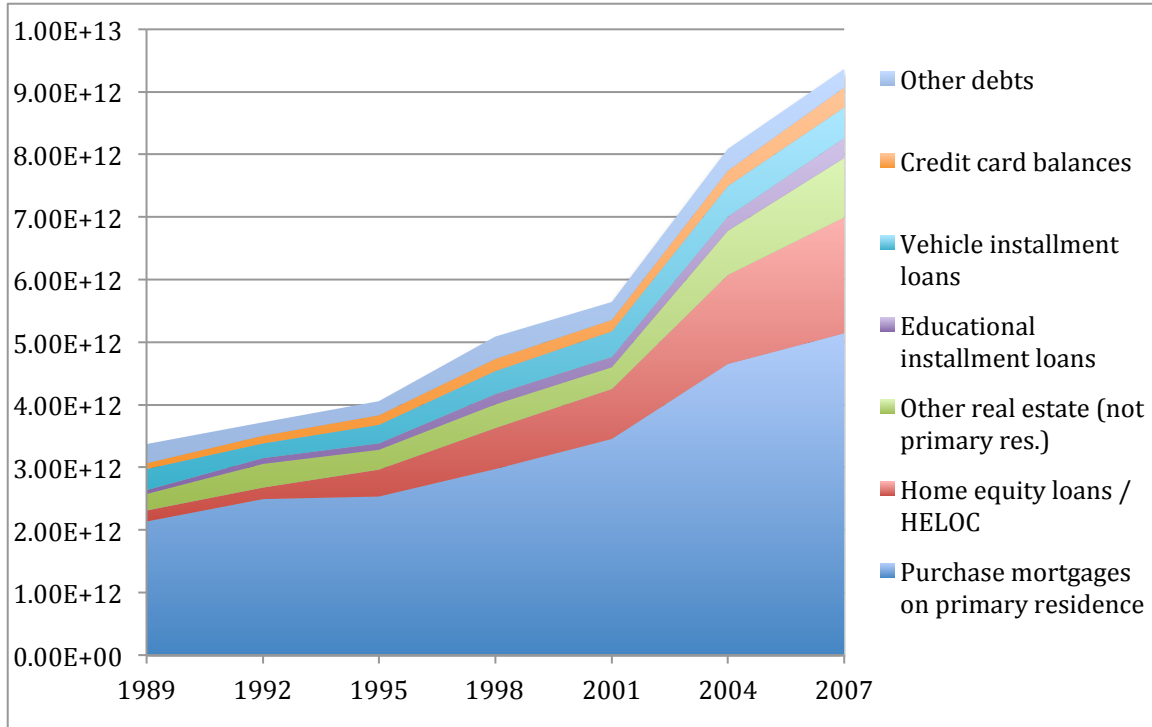
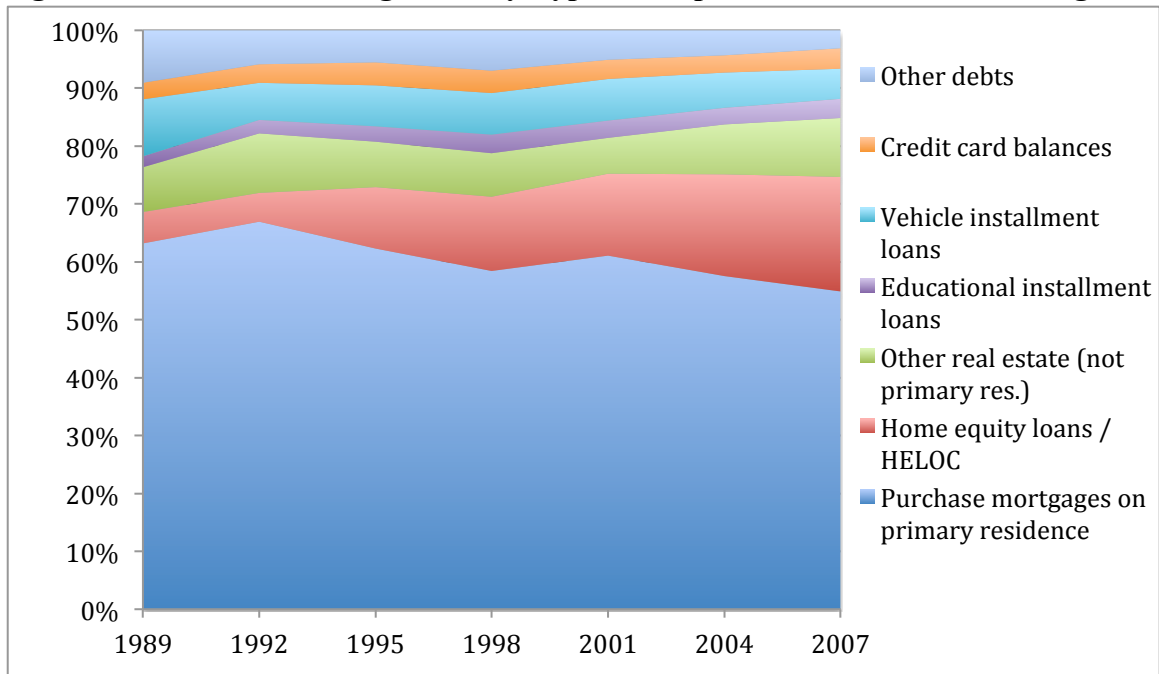
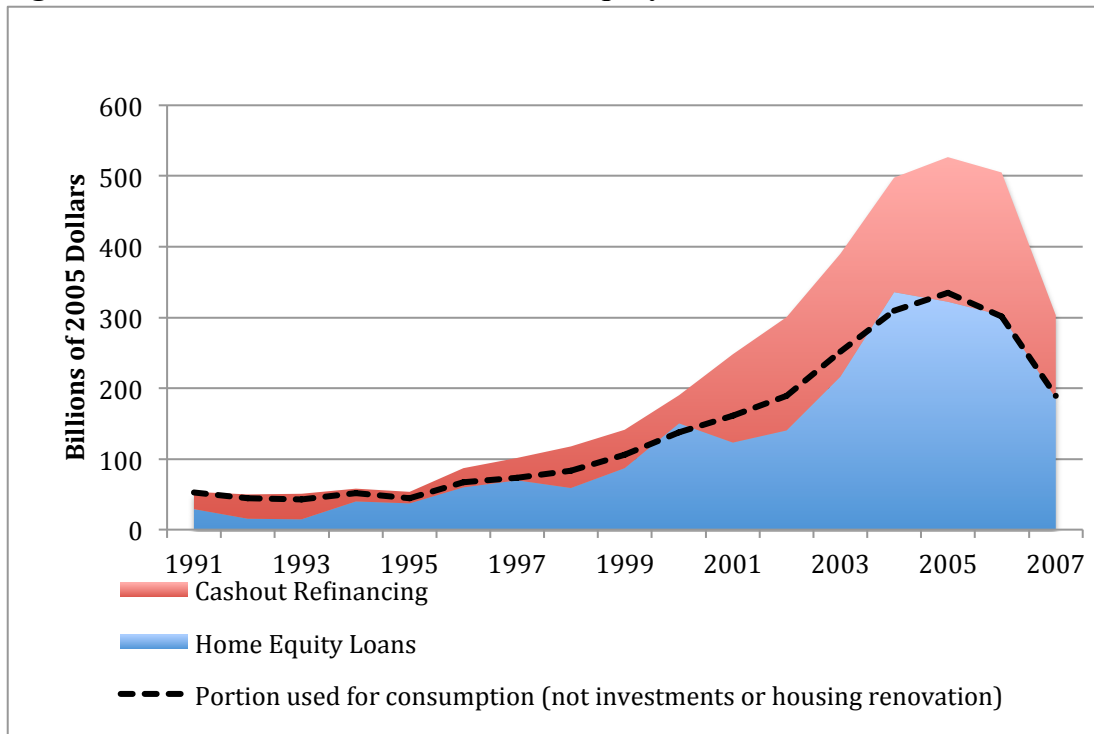


Figure 2b: Real Outstanding Debts by Type as Proportion of Total Outstanding Debt



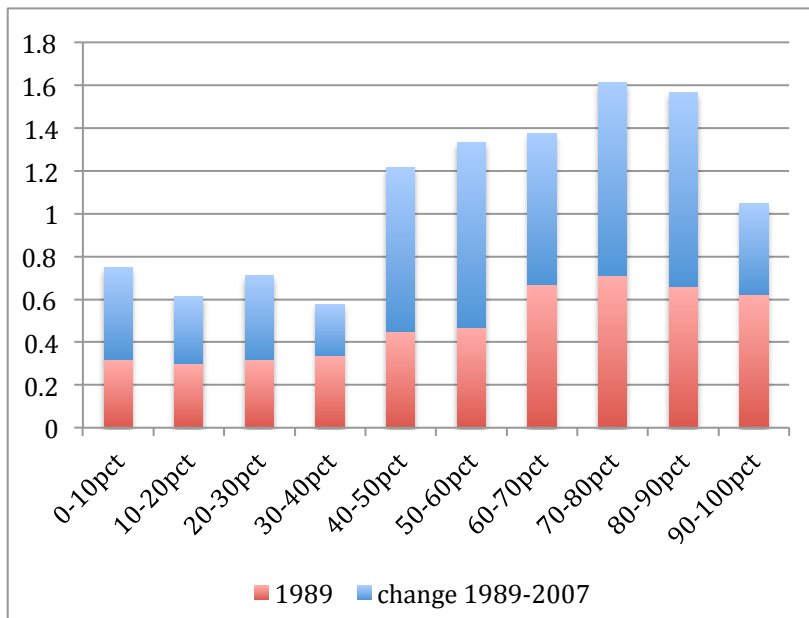
Data Source: Survey of Consumer Finances

Figure 3: Real Gross Extraction of Home Equity, Annual Flows



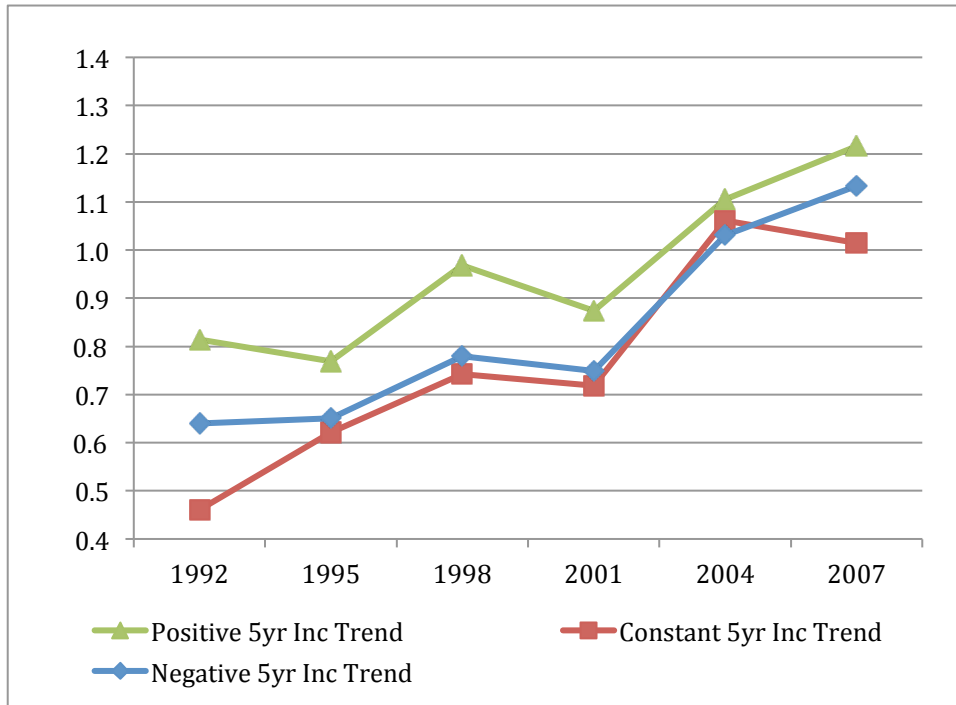
Data source: Greenspan and Kennedy (2008).

Figure 4: Net Change from 1989-2007 in the Median Debt-to-Income Ratio, by Income Deciles



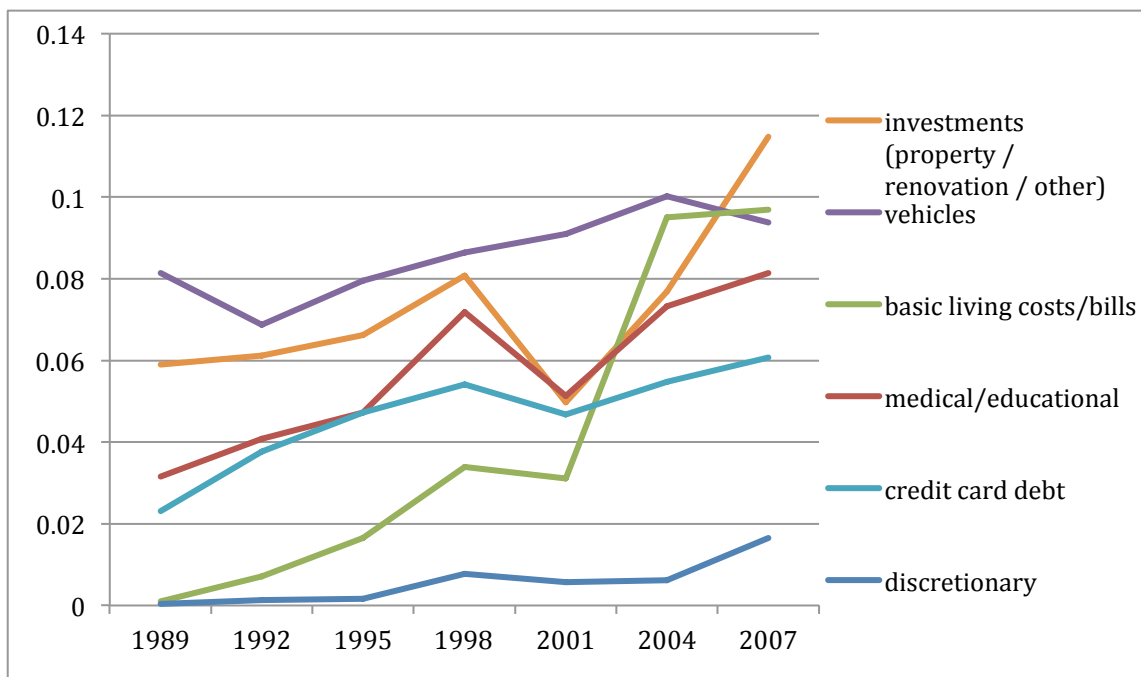
Note: This figure plots the median debt-to-income ratio among those with any debt holdings.
Data Source: Survey of Consumer Finances

Figure 5: Median ratio of debt-to-income among households with any debt holdings



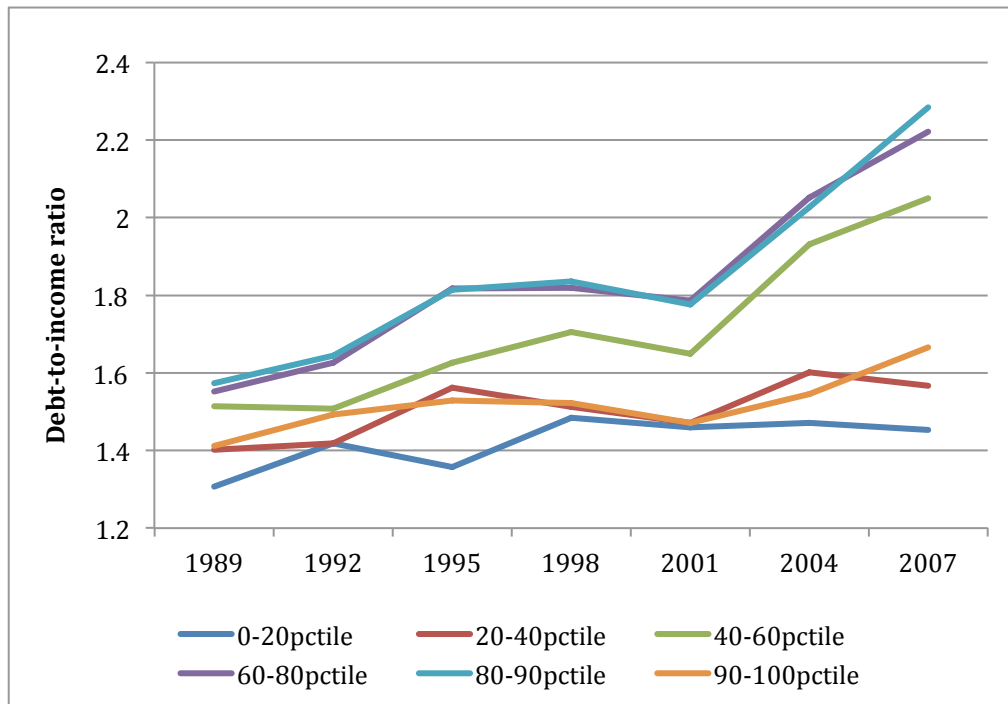
Note: This figure plots the median debt-to-income ratio among those with any debt holdings.
Data Source: Survey of Consumer Finances

Figure 6: Mean debt-to-income ratio for various non-housing consumption expenditures



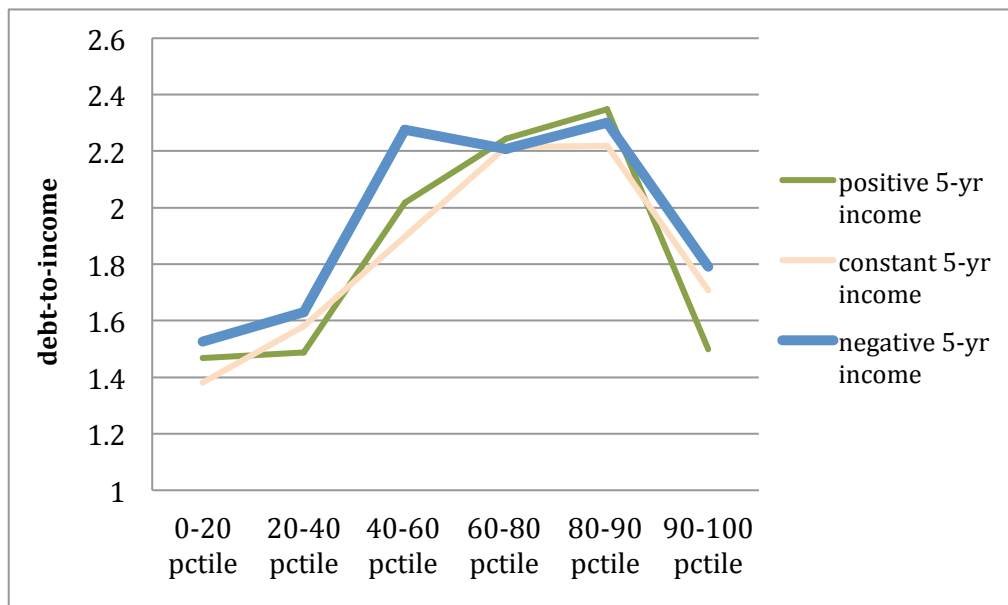
Data Source: Survey of Consumer Finances

Figure 7: Model estimated debt-to-income ratios by income quantile, 1989-2007



Note: The estimates shown in Figure 7 are derived from the full multivariate model specification discussed in the results above, holding all other variables constant.

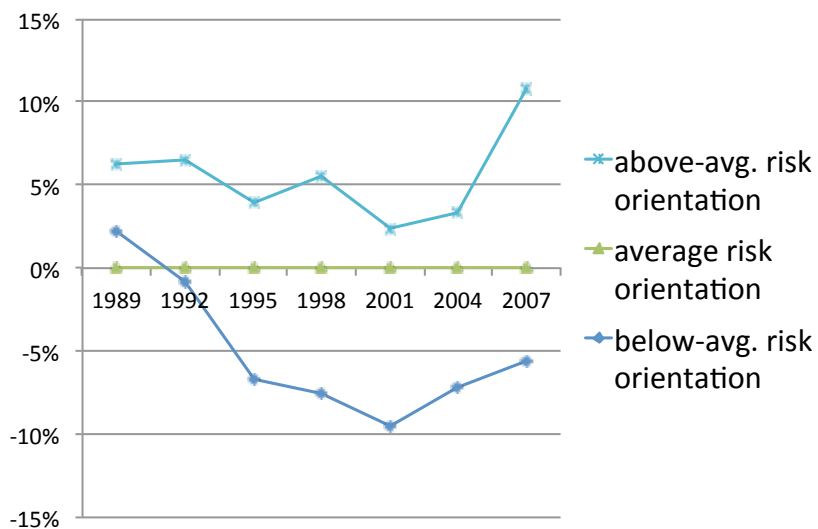
Figure 8: Model estimated 2007 debt-to-income ratio, by income level and income trajectory



Note: The estimates shown in Figure 8 are derived from the full multivariate model specification discussed in the results above, holding all other variables constant.

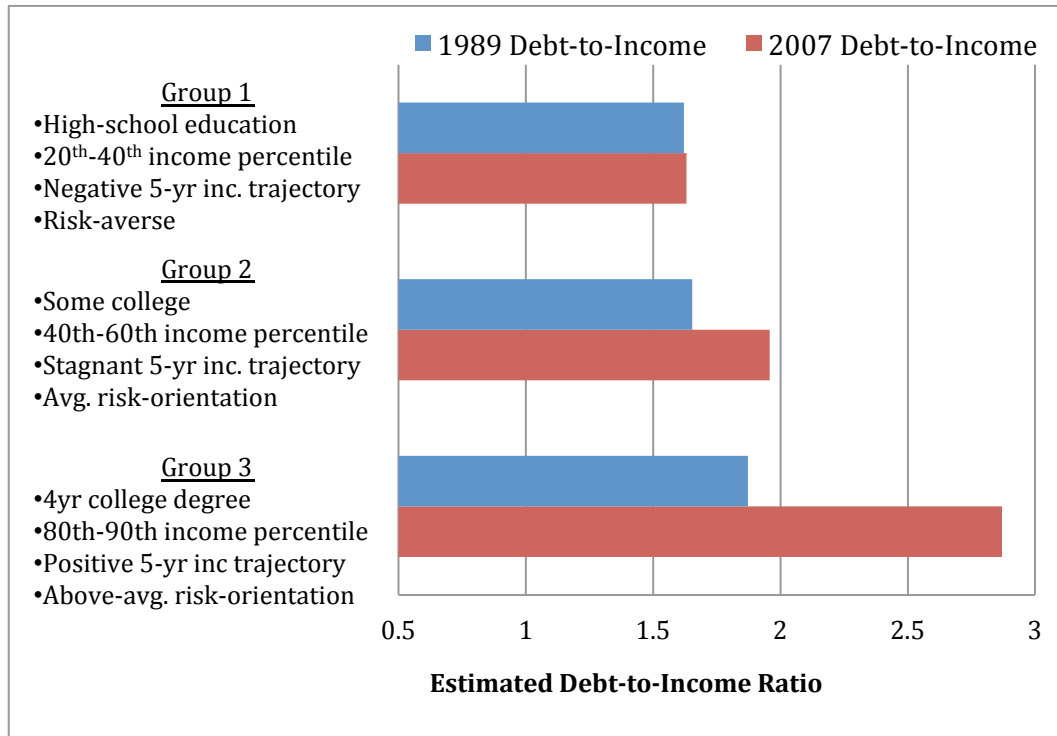
Figure 9

Estimated net effects of expressed risk orientation
(relative to base) on debt-to-income level, 1989-2007



Note: The estimates shown in Figure 9 are derived from the full multivariate model specification discussed in the results above, holding all other variables constant

Figure 10: Comparing estimated indebtedness levels across three different socio-economic profiles, 1989 & 2007



Note: The estimates shown in Figure 10 are derived from the full multivariate model specification discussed in the results above, holding all other variables constant.