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Household Debt and Union Jobs: Evidence from Bankruptcy Reform

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Abstract

This paper examines how household indebtedness shapes union participation in the United States, using PSID data (1999–2021) and the 2005 Bankruptcy Abuse Prevention and Consumer Protection Act as a natural experiment: households above their state median income lost access to Chapter 7 bankruptcy, raising the cost of consumer debt. Treated households deleveraged, and their union participation fell on the margin made financially meaningful by state labor law: entry into union-covered jobs in non-Right-to-Work states, and retention of formal membership in Right-to-Work states. Our findings show that personal balance sheets and labor law jointly shape workers' collective representation.

Keywords: Unionization; Union Jobs; Personal Debt; Bankruptcy Reform; Right to Work

JEL Classification: J50; J51; K35; G51

1. Introduction

Personal debt has become a central public policy concern of the past five decades, with particular salience in liberal market economies such as the United States, where credit markets are comparatively deregulated, and household welfare is closely exposed to financial conditions (Krippner 2005, 2011; Langley 2007). While mortgage debt expanded rapidly in the 1920s as well, financing the housing boom that preceded the Great Depression, what distinguishes the unprecedented rise in personal debt since approximately 1980, however, is the proliferation of unsecured consumer credit well beyond housing finance, spanning student loans, payday loans, medical debt, and auto loans, extending credit access into domains of everyday consumption and basic

need that were previously financed out of current income or public provision (Betti et al. 2007; Lazzarato 2012).

As households accumulate non-negligible financial risks, governments occasionally intervene via personal debt relief and discharge programs in order to manage potential spillovers that can increase systemic risks (Gross et al. 2021). In the United States, the most consequential intervention came in 2005, when the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) tightened access to bankruptcy protection in response to the rapid expansion of consumer credit. Reforms of this kind illustrate how seriously policymakers treat household debt not only as an individual financial matter but also as a macroeconomic and social concern, warranting regulatory intervention.

Until recently, however, the labor relations literature has largely overlooked household debt, despite its growing recognition as a public policy concern. A growing body of work demonstrates that personal debt shapes employment decisions, including job search, contract choice, and wage bargaining (Crouch 2012; Herkenhoff 2019; Ji 2021; Chaumont & Shi 2022; Gouzoulis et al. 2023a). Yet its implications for worker voice and workplace representation, including trade union participation, have only recently begun to attract scholarly attention (Gouzoulis 2024; Barradas 2025a).

Union density in the United States has experienced a sustained decline over the past several decades, largely driven by the erosion of union jobs across key sectors, even as recent years have seen a modest resurgence in organizing activity (Naidu, 2022). While union jobs typically offer higher wages, stronger protections, and greater long-term stability, increasing job satisfaction (Artz et al., 2022), they may also be perceived as less flexible or more risky, particularly by debt-burdened workers.¹ Under deregulated conditions, employers face stronger incentives to shut down unionized workplaces and relocate production to lower-cost regions. Debt-burdened employees, prioritizing job and income stability over wage gains, may therefore view workplaces with lower closure risk as

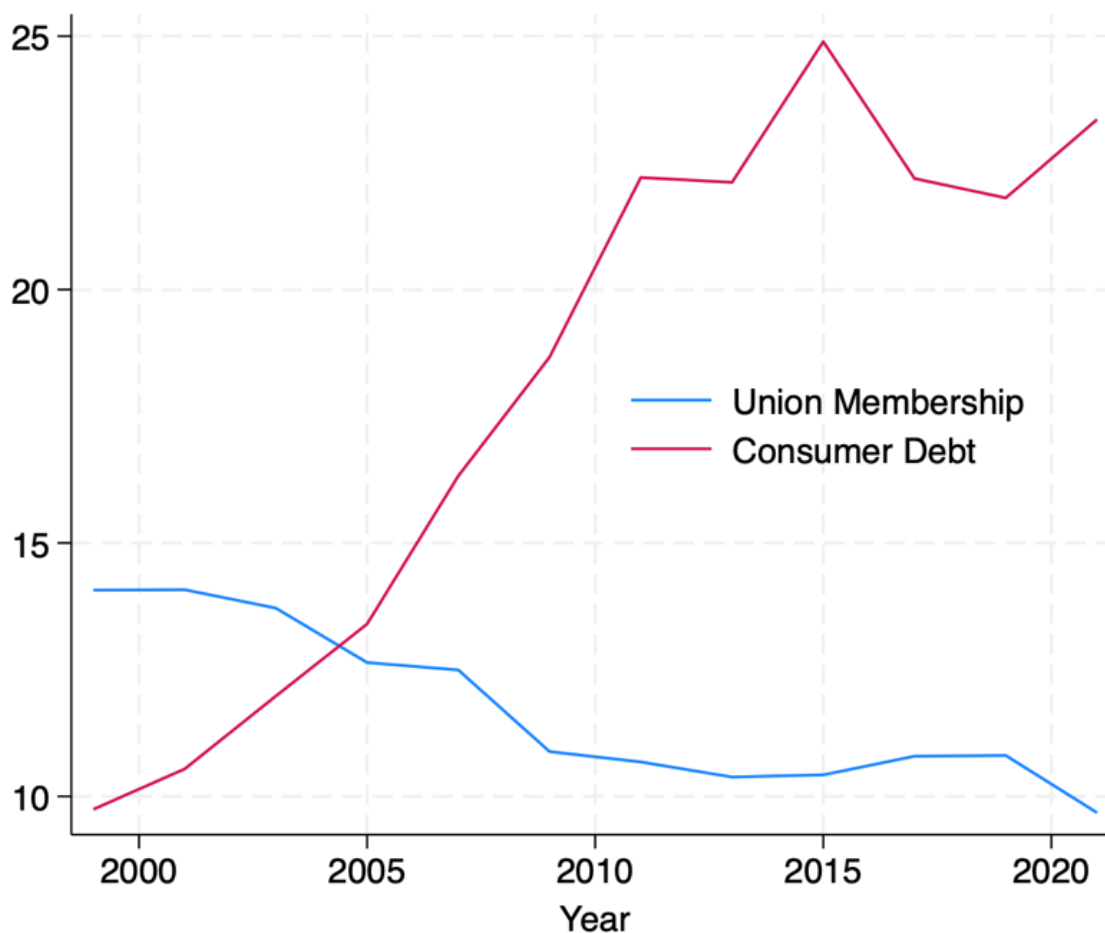
¹ For a broader discussion of household debt as a determinant of labor market behavior, see Daniels Jr & Smythe (2019).

safer from a bankruptcy perspective (Wood 2017; Kim et al. 2019; Kohler et al. 2019; Gouzoulis 2021; Gouzoulis et al. 2023b, 2025).

For workers with non-trivial debt burdens, the need for income continuity and short-term security may outweigh the long-term benefits of union affiliation. Financial pressures intensify this trade-off, leading them to avoid union jobs not from ideology but risk sensitivity. In this sense, unionization is not simply an individual labor market choice but a decision embedded within employment relations institutions, where perceived employment risks, firm-level restructuring strategies, and collective bargaining arrangements shape workers' ability to exercise voice at work. This dynamic aligns with the classic tension between exit and voice (Hirschman 1970), where indebted workers may favour avoiding potential job loss over pursuing collective action through union representation, even when doing so would improve long-term employment conditions.

The inverse relationship between union density and household debt is visible in Figure 1: union density in the United States fell from nearly 18% in the 1990s to just under 10% by 2021, while the consumer debt share of household income nearly doubled, from below 10% in 1999 to nearly 20% in 2021. These trends raise the central question of this paper: to what extent has the rise in household debt contributed to the decline in union jobs in the United States? To answer this question, we draw on longitudinal data from the Panel Study of Income Dynamics (PSID), which provides detailed information on household income and personal debt by type of credit. We focus on the period beginning in 1999, which marks the beginning of a major deregulatory era following the gradual repeal of the Glass–Steagall Act in 1999.

Figure 1: Union Density and Consumer Debt in the United States, 1999-2021



Notes: The blue line plots the percentage share of working household heads who are union members in each survey wave. The red line plots the percentage share of consumer debt in household income. The sample consists of working household heads aged 25–65 at the time of interview (see Section 4 for further details). Source: PSID

To identify the effects of consumer debt on unionized employment, we exploit the 2005 Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA), a federal reform that tightened bankruptcy access and substantially raised the cost of filing for personal bankruptcy. A central feature of BAPCPA is the means test: households with income above their state median are barred from filing Chapter 7, which provides immediate debt discharge. Instead, they must file under Chapter 13, a multi-year repayment plan. Although publicly justified as preventing abuse of bankruptcy protections, the reform made debt relief less accessible and increased repayment burdens,

thereby raising the financial distress experienced by affected households. The reform was implemented uniformly nationwide, and its timing was unrelated to labor-market dynamics, providing plausibly exogenous variation in households' effective cost of debt.

We define treatment status based on whether a household's 2003 income exceeded its applicable state-family-size median threshold, as published by the U.S. Trustee Program. Our difference-in-differences estimates show that treated households experience a gradual decline in their consumer debt-to-income ratios after the reform, consistent with both tighter credit supply and anticipatory adjustment during BAPCPA's legislative passage in Congress. We further show that the relationship between consumer debt and union participation operates differently across institutional contexts and two distinct margins. In non-Right-to-Work (non-RTW) states, where union membership carries a binding financial commitment through mandatory dues, BAPCPA exposure reduces the probability that previously non-union workers enter union-covered employment. In Right-to-Work (RTW) states, where workers can hold union-covered jobs without joining, BAPCPA exposure instead reduces the probability that previously unionized workers retain formal membership. In each state type, the effect appears precisely on the margin made financially meaningful by the institutional setting. We interpret these findings as evidence that personal balance sheets and labor law jointly shape collective representation in the workplace: how consumer debt constrains union participation depends crucially on state-level labor laws.

This paper contributes to industrial relations scholarship by identifying household financial vulnerability as a mechanism shaping unionization, an element largely overlooked in existing explanations of union decline, which emphasize employer opposition (Freeman 1998), cost-benefit evaluations of membership (Ashenfelter and Pencavel 1969), sectoral restructuring (Bluestone and Harrison 1982), globalization (Western 1997; Slaughter 2007), institutional deregulation (Hogler et al. 2004), and free-riding under broad bargaining coverage (Bryson 2008), alongside the documented benefits of union jobs (Blanchflower and Bryson 2004; Artz et al. 2022). By exploiting variation in bankruptcy rules, we show that binding debt obligations reduce union participation, reframing unionization as a consequence not only of workplace conditions and employer strategies but also of

financially constrained household livelihoods, and connecting balance-sheet pressures to worker voice, collective bargaining, and institutional complementarity. In doing so, the paper bridges previously separate strands of research on union decline, worker risk preferences, and household credit markets (Kim et al. 2019; Kohler et al. 2019; Gouzoulis et al. 2023a, 2023b, 2025; Gouzoulis 2024; Barradas 2025a).

The paper proceeds as follows. Section 2 provides the background on the drivers of unionization and union density. Section 3 discusses the specificities of the U.S. industrial relations system on which our analysis focuses. Section 4 describes the data and presents descriptive statistics. Section 5 presents the conceptual framework. Section 6 presents the empirical strategy and results. Finally, Section 7 concludes and discusses the implications of our findings for future research and policy.

2. The Decline of Unionization & Union Density

Extensive empirical research has shown that the presence of unions at the workplace enhances worker welfare by significantly strengthening collective bargaining power, which, in turn, leads to higher wages, access to benefits, protection from arbitrary dismissal, and improved occupational safety (Freeman & Medoff, 1984; Freeman, 1998; Farber et al., 2018; Barth et al., 2020). Despite this broad empirical consensus regarding the positive effects of unionization, both union membership and union density have been undergoing a persistent decline across advanced industrial economies over the past several decades.

2.1 Unionization as a Cost-Benefit Problem & Employer Opposition

The academic debate on what motivates workers to join a trade/labor union dates back at least to the late 1960s – the era when unionization reached its historic peak. The seminal work of Ashenfelter and Pencavel (1969) looks at unionization as a cost–benefit problem from the perspectives of the union and the individual worker. Through this lens, their model suggested that workers tend to join a union when the monetary benefit of being a union member (union wage premium) exceeds the cost of membership (union fee). Later, Freeman (1998) shifts the focus to the involvement of employers

in unionization efforts, highlighting that corporate spending against union organizing can significantly undermine employees' perceptions of unions and discourage membership.

Expanding Freeman's unionization model, Palley and LaJeunesse's (2007) formally model how the path dependence of employees' attitudes towards unions shapes their perception of unionization, on top of tangible factors like union wage premia, (anti-)union spending, or pro-labor legislation. More specifically, this paper argues that societies with historically high union participation tend to cultivate a favourable consensus on trade unions and collective action among workers. This creates a widespread sense of group identification, which is transferred from one generation to another, reinforcing union participation and the growth of trade unions (Kelly and Kelly 1994). Inversely, the opposite might be true as well. In countries where historically unions are marginalized, and membership is low, unionization efforts tend to be costlier and substantially less efficient.²

2.2 Inflation Shocks, Sectoral Restructuring, & Globalization

On top of theoretical models of unionization, a growing empirical literature has been looking at the determinants of union membership and union density, distinguishing between structural and institutional drivers as well as external market constraints. As early as the late 1970s, Bain and Elsheikh (1976) argued that one important factor that incentivizes workers to join a union is inflation. Since one of the core functions of trade unions is to secure higher salaries, during periods of high consumer price inflation, like the 1970s and the inflation crisis caused by supply-side shocks related to COVID-19, employees are more likely to decide to join a union in order to “protect” their real purchasing power. Empirical studies report that there is indeed a strong statistical association between increases in the consumer price inflation rate and union membership rates, especially in economies where union agreements cover non-unionized workers too (e.g., see Western 1997; Checchi and Visser 2005).

² One indicative example of such a case is the evolution of unionization in Greece, where employees have historically adopted a very distrustful stance on unions (Papadopoulou and Gouzoulis 2020). This is because of two reasons. First, during the late 1960s – early 1970s military dictatorship the dictators directly appointed and controlled the leaders of trade union congresses. Second, after the end of the dictatorship certain sectoral unions/congresses became openly affiliated with specific political parties, which discouraged the unionization of workers with differing political views. Similar examples can be observed in other countries too.

The empirical literature also shows that workforce shifts between economic sectors have contributed notably to the decline of unionization. These shifts are driven by two parallel processes. On the one hand, the de-industrialization of advanced economies due to the rise of the East and the rise of services has led to the growth of relative employment in the services sector (Bluestone and Harrison 1982). Due to the remoteness of workplaces belonging to the same corporations, the prominence of gig economy occupations, and the extensive employment of freelancers, unionization in service jobs is challenging, and, therefore, union membership rates have been historically low compared to manufacturing and industry. As such, several empirical studies present findings that show that the decline in employment in industrial and manufacturing occupations and the movement of workers to service jobs have played a key role in the aggregated reduction in unionization rates across countries (e.g., see Blaschke 2000; Lee 2005; Polachek 2004; Schnabel 2003; Jensen 2020).

In addition to workforce shifts within national economies, in recent decades, another important driving force behind the decline of unionization rates is the globalization of trade and production networks/value chains. Early frameworks on the impact of global trade and capital mobility predicted that globalization would induce the specialization of different countries in either labor- or capital-intensive industries, depending on the structures of local economies, which would balance bargaining power differentials between workers globally (Stolper and Samuelson 1941). In reality, however, the globalization of capital has allowed the quick and easy reallocation of production and service provision to different workplaces across the world. This process has allowed managers to outsource work to regions where unions are weaker or even absent, and, thus, labor costs are lower. As a result, globalization has generated a “race to the bottom” in terms of working conditions (Sassoon 1996, Wallace and Brady 2001). In such an environment, workers competing across the globe often avoid joining or forming unions to avoid unemployment, as unionization can discourage investors from pursuing labor-intensive investment projects in their region. Moreover, the global segmentation of production has also created a major coordination problem between local unions and foreign employers, making unions less effective in their negotiations. This, naturally, disincentivizes employees to unionize as the costs often exceed the benefits (Western 1997). Brady and Wallace

(2000), Scruggs and Lange (2002), Slaughter (2007), and Boulhol et al. (2011) provide econometric evidence that trade openness, foreign direct investments, and import penetration have eroded union membership and power in most advanced Western economies over the past few decades.

2.3 Institutional Deregulation & Government Ideology

Beyond employers' union-busting tactics, product market shocks, and structural economic shifts that affect the sectoral composition of the economy, policy changes in labor market institutions and other economic institutions are also central for the evolution of union density over time. Both economic institutions and the ideology of the governing majority determine how effective unions can be, given that they can undermine or upgrade unions' institutional power (Masters and Delaney 2005, Gumbrell-McCormick and Hyman 2013, Rigby and García Calavia 2018).

In economies with more regulated labor markets, trade unions are more institutionally embedded in the formal wage setting negotiations and processes. Hence, given their stronger formal role as stakeholders in the economy, employees are likely to become more keen to join a union and actively influence their strategies that can have an impact on higher-level policy setting. Indeed, building on Freeman (1998), Hogler et al. (2004) examine differences in pro-labor employment laws at the regional level and show how tighter labor market regulation can counterbalance employer opposition against unionization. Nonetheless, the expansion of bargaining coverage into both unionized and non-unionized workers may incentivize 'free-riding', i.e., unionized workers to leave their union since they, anyways, enjoy the benefits of collective union agreements (Olson 1965, Freeman and Medoff 1984, Bryson 2008).

The relationship between government ideology, *per se*, and unionization is not always straightforward. Broadly speaking, when more progressive/left-leaning political parties are in power, it is not uncommon to go beyond just labor market regulation and also restructure the broader institutional setting of the economy in a more economically democratic manner. This can indeed include strengthening employee voice in economic negotiations and processes other than just wage setting (Korpi 1983, Western 1995, 1997, Sassoon 1996, Brady 2007, Trentini 2022). In that regard, such an economic and political environment can incentivize workers to form or join unions since

they can exert direct influence over sector- or country-level economic strategies. The opposite process can take place when more conservative/right-leaning parties are in government. Another important aspect of the government ideology-unionization nexus is that when a union has clear ties with specific political parties or elected officials, this can be a deterring factor for workers who do not identify politically with a specific political spectrum to join such a union, especially in more politically divided societies.

2.4 Financialization: Shareholder Value Orientation & Personal Debt

While sectoral shifts in employment, the pressures of globalization, and macroeconomic shocks such as inflation are well-documented factors shaping unionization, the role of external financial constraints has received comparatively limited attention. These financial pressures do not only shape broader macroeconomic outcomes but also alter the institutional context in which workers engage in collective bargaining and workplace representation, making them directly relevant to industrial relations scholarship.

Over the past four decades, privatizations, welfare state retrenchment, and rapid technological change have enabled the extraordinary expansion of the financial sector relative to the rest of the economy. Financial institutions now finance a wide range of activities across the private sector, from lending to non-financial corporations for inventory, investment, or share buybacks, to providing credit to households for housing, education, vehicles, and even everyday consumption. As a result, both firms and households have become increasingly dependent on private credit, pushing them to adopt economic strategies oriented toward servicing financial obligations (Gouzoulis 2026). For corporations, rising indebtedness and deepened stock market exposure have intensified short-term pressures. The separation of ownership and management has created conflicting incentives, and corporate governance has become increasingly oriented toward the immediate demands of shareholders (Lazonick and O'Sullivan 2000). Share buybacks, often financed through loans collateralized by real assets, are widely used to raise share prices and retain investors. This practice destabilizes corporate balance sheets, prompting managers to restore financial stability through divestment, layoffs, or wage reductions (Stockhammer 2004; Kohler et al. 2019; Gouzoulis 2022;

Guschanski and Onaran 2025). Because unions typically resist such cost-cutting measures, financially pressured firms face incentives to weaken or eliminate union presence. Consistent with this, cross-country evidence shows a strong negative association between indicators of shareholder-value orientation and union density in Europe and North America (Kollmeyer and Peters 2019; Gouzoulis et al. 2024).

For households, the erosion of social safety nets since the mid-1990s has made working families more reliant on private credit than ever before. The rising costs of goods that were once heavily subsidized (such as housing, education, and healthcare) have made access to credit essential, especially for low-income households. Because debt obligations require a stable income stream, households facing personal finance constraints often adopt precautionary economic strategies (Hu et al. 2025; Fermand et al. 2024). Recent studies show that financial uncertainty linked to rising household indebtedness can influence workers' decisions about workplace voice and job choice. In a context of weak labor protections, union activity is frequently met with punitive redundancies; consequently, forming or joining a union can be a high-risk decision for indebted workers who prioritize employment stability over potential wage gains as a safeguard against financial distress or bankruptcy. Macro-level analyses provide initial evidence for this mechanism, documenting a robust negative association between household debt-to-income ratios and unionization rates in several highly indebted advanced economies, including Sweden, Japan, Korea, and Portugal (Gouzoulis 2024; Barradas 2025a)³. These effects are likely to be especially pronounced in sectors where employers can respond to organizing efforts by relocating production or outsourcing to non-unionized labor markets (Myers and Saretto 2016).

3. Unionization in the Era of Financialization in the United States

Financialization, particularly the financialization of working households, is prominent in the vast majority of high-income economies globally; however, differences in domestic industrial relations

³ In addition to unionization, quantitative studies also show that the same mechanism also holds for strike activity, since striking also involves a high risk of redundancy in the current institutional environment (see Barradas 2024, 2025b).

systems and the regulatory framework around personal finance can shape its effects drastically. While the existing empirical studies discussed above find that the effects of personal/household debt on union density are indeed negative across several countries over the past five decades, these studies focus on economies where the choice to unionize is an individual worker choice.

In most of Western Europe, collective bargaining occurs at the industry or sectoral level (e.g., metalworking, retail, healthcare), and, thus, sectoral unions negotiate with the respective employer federations about wage floors and working standards for entire industries. In countries like Denmark, Sweden, or Finland, which use the Ghent system, trade unions also administer unemployment benefits, creating a strong incentive to join. In Germany and the Netherlands, work councils and co-determination laws ensure that trade unions and workers have representation within firms, regardless of union membership. Accordingly, in practice, workers have the right to decide individually whether or not they will join their sectoral union, subject to their personal financial constraints. As such, indebted workers face the deliberate dilemma of whether to unionize or not in their current job in order to avoid redundancy and default on their debt.

In contrast, in the United States, unionism operates at the enterprise level, since union representation is typically established at the level of the “bargaining unit” (individual workplace or firm). Under this regulatory framework, workers must petition for a union election, usually through the *National Labor Relations Board* (NLRB), and if a majority votes in favour of unionizing, then the union becomes the exclusive bargaining agent for that workplace/firm. In the United States, unionized workplaces are well-documented to offer higher wages and more generous non-wage benefits (Blanchflower & Bryson, 2004). Despite recent unionization efforts in high-profile firms, like Amazon and Starbucks, the aggregate decline in union density remains unmitigated (Silver-Greenberg & Abrams, 2021). As can be seen in Figure 1, union density has fallen from around 15% in the mid-20th century to under 10% by 2021.

As discussed above, this trend might be explained to a significant extent by the fact that liquidity-constrained individuals may prioritize employment continuity and income stability over higher wages. Yet, given the legal and institutional framework that governs industrial relations in

the United States, unlike Europe, the choice the individual indebted worker/household faces is between a union or a non-union job/workplace. In light of that, in this paper, we explore whether financially constrained workers in the United States may be more willing to forgo higher wages of unionized workplaces as they are deterred by the perceived risks, such as the higher risk of outsourcing as a means of cost-cutting.

Importantly, not all workers in unionized workplaces are union members, reflecting the distinctive legal and institutional features of the American industrial relations system (Freeman, 1988). As of 2023, 26 U.S. states and the territory of Guam have enacted *Right-to-Work* (RTW) legislation, which prevents mandatory union membership or unions demanding dues as a condition of employment, while workers can still receive the benefits of collective agreements. These laws tend to undermine unions' financial resources and reduce membership participation, thereby weakening their collective bargaining power (Fortin et al., 2023). However, RTW legislation does not automatically suppress union membership. Many unions offer excludable benefits —such as legal representation, grievance support, and enhanced workplace protections— that may continue to incentivize workers to join (Farber et al., 2021).

4. Data

Our primary data source is the Panel Study of Income Dynamics (PSID), a nationally representative, longitudinal survey of U.S. individuals and families. Conducted by the University of Michigan, the PSID was launched in 1968, collecting rich information from over 84,000 individuals and 9,200 families on a broad range of socioeconomic variables, including employment status, income, education, family structure, and health. These families are followed over time, even if the individual members moved out and started their own families in subsequent years. The PSID's panel structure enables us to track individual labor market outcomes and debt accumulation over time, making it well-suited for causal inference in the context of policy changes such as the 2005 Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA).

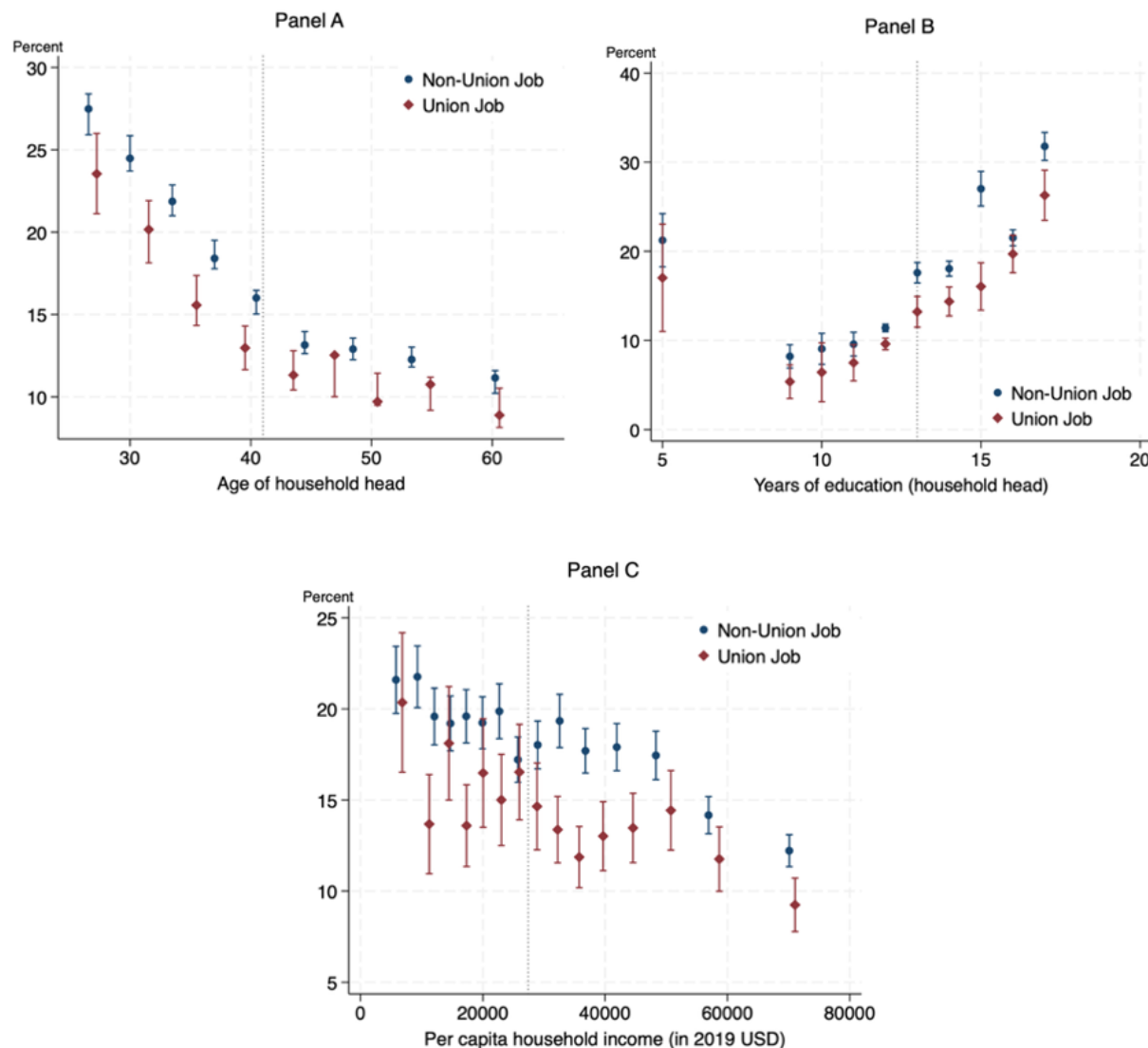
Our analysis includes information from every biennial PSID wave from 1999 to 2021. In 1994, the PSID began incorporating detailed financial modules that capture household assets and liabilities, including various forms of debt such as credit card balances, student loans, medical debt, and mortgages. From 1999 onward, these measures became more standardized and were consistently reported across survey waves, allowing for reliable comparisons over time. Our primary outcome is a binary indicator of unionized employment, coded as one if the respondent reports working in a unionized workplace.

The estimation sample is restricted to households with working heads aged between 25 and 65 at the time of the survey waves. To focus on full-time labor market participants, we exclude individuals who report working fewer than 35 weeks each year. All monetary values are adjusted to 2019 U.S. dollars using the Consumer Price Index (data available from the U.S. Bureau of Labor Statistics). To reduce the influence of outliers, we exclude households with per capita annual income below \$6,000 or above \$88,800, corresponding to the bottom and top 5% of the income distribution in the sample. After applying these sample selection criteria, the final estimation sample comprises approximately 15,600 household heads.

Figure 2 plots the distribution of household debt burdens across key demographic and economic dimensions, disaggregated by union employment status. Panel A reveals a clear negative association between consumer debt (as a share of household income) and the age of the household head, a pattern consistent across households in unionized and non-unionized workplaces. However, at any given age, households with union employment consistently exhibit lower personal debt shares, suggesting a potential financial buffer associated with union membership. Panel B shows that consumer debt shares increase with educational attainment, likely reflecting the positive correlation between education and lifetime income, as well as the role of student loans. However, conditional on education level, unionized households carry a smaller debt burden. Panel C documents an inverse relationship between consumer debt shares and per capita household income. Notably, across the income distribution, unionized households maintain consistently lower consumer debt shares,

consistent with the interpretation that unionized employment provides financial advantages that reduce reliance on borrowing.

Figure 2: Consumer Debt Share by Age, Education and Income



Notes: The figures are binned scatter plots of consumer debt shares of household income (percent) over age (Panel A), years of completed education (Panel B), and per capita household income (Panel C). We separate household heads who are in a unionized workplace (red) from those who are not (blue). The dotted lines in each plot indicate the median household is 41 years old, with 13 years of completed education, and with around USD27,000 income per household member (in 2019 USD). In Panel B, household heads with 5 or fewer years of completed education are grouped together, as are those with 6 to 9 years, due to the small number of observations in these categories. In Panel C, the sample is restricted to households with per-capita income at or below USD80,000 (in 2019 USD) to avoid noise from the sparse upper tail of the income distribution.

Table 1 presents summary statistics of key variables for individuals in our estimation sample, disaggregated into the pre-BAPCPA period (columns 1 and 2) and post-BAPCPA period (columns 3 and 4). The distinction between the two periods is motivated by the need to contextualize post-2005 data within a shifting macroeconomic landscape. The 2008 Global Financial Crisis (GFC) followed shortly after the enactment of BAPCPA, introducing substantial economic dislocation marked by widespread defaults, bank failures, and credit market disruptions, particularly among households with subprime mortgages. The data reflect this deterioration in financial conditions. The average share of consumer debt relative to household income more than doubled in the post-BAPCPA period, rising from approximately 9–11% to 16–21%. Across both periods, households with non-unionized heads carry higher personal debt burdens than their unionized counterparts.

Table 1: Summary Statistics

	PSID pre-2005			PSID post-2005		
	Union Job (1)	Non-Union Job (2)	<i>p-value</i>	Union Job (3)	Non-Union Job (4)	<i>p-value</i>
Individual Characteristics						
Age	42.21	40.28	<0.0001	43.20	41.24	<0.0001
Male	0.79	0.77	0.0060	0.75	0.74	0.2510
White	0.53	0.62	<0.0001	0.51	0.61	<0.0001
High school	0.54	0.47	<0.0001	0.42	0.36	<0.0001
University	0.44	0.50	<0.0001	0.56	0.61	<0.0001
Weeks worked per year	48.34	49.05	<0.0001	48.56	49.13	<0.0001
Public sector	0.29	0.16	<0.0001	0.05	0.12	<0.0001
Labor income	60,885	54,773	<0.0001	60,512	55,011	<0.0001
Household Characteristics						
Household income	92,113	83,446	<0.0001	91,304	83,908	<0.0001
Per capita household income	32,925	30,849	<0.0001	34,539	31,777	<0.0001
Consumer debt income share (%)	9.09	10.77	<0.0001	16.46	20.84	<0.0001
Number of individuals	1,771	6,044	-	2,409	9,623	-

Notes: The table reports summary statistics for individuals in the estimation sample. Observations are separated into the pre-2005 period (columns 1 and 2) and the post-2005 period (columns 3 and 4), the year in which the Bankruptcy Abuse Prevention and Consumer Protection Act was enacted. Average characteristics of household heads in unionized employment are shown in odd-numbered columns; those of non-union household heads are shown in even-numbered columns. The public-sector indicator is a proxy measure, defined as reporting employment in transportation, communications, public utilities, or public administration. Source: PSID.

Demographic and labor market characteristics of household heads remain broadly similar across union and non-union groups over time. Age, educational attainment, weeks worked, and total labor income show only modest differences. Non-union workers are, on average, slightly more likely to be white and have marginally higher levels of formal education, consistent with existing evidence

on the demographic characteristics of union membership in the U.S. during this period. Moreover, the average labor income of non-union household heads is about 92% of that of their unionized counterparts, consistent with the documented wage premium associated with union jobs in the literature.

5. Conceptual Framework

5.1 Set Up

Consider a worker who decides whether to participate in a union, where the institutional setting determines what this decision involves. In non-RTW states, union security agreements tie membership and dues to the job itself, so the relevant choice is whether to take a union-covered job. In RTW states, workers may hold a union-covered job without joining, so participation separates into two margins: whether to take a union-covered job and, conditional on holding one, whether to remain a dues-paying member.

Workers differ in their financial (debt) position. Throughout, $D \geq 0$ denotes unsecured consumer debt: credit card balances, medical debt, instalment loans, and similar obligations.⁴ We exclude mortgage debt for three reasons: unsecured debt bites hardest after job loss, with no sellable asset to offset it, whereas mortgage debt is secured and capped by housing equity; a large mortgage signals wealth as much as strain, making unsecured debt the cleaner measure of household fragility;⁵ bankruptcy law and hence the 2005 BAPCPA reform operate only on unsecured debt, leaving mortgages unchanged.

We summarise the bankruptcy regime by a parameter $\phi \geq 0$, capturing the cost of obtaining relief from unsecured debt; BAPCPA is modelled as a rise in ϕ . Unsecured consumer debt is therefore

⁴ Our consumer debt measure includes student loans. Federal student loans were already largely non-dischargeable before 2005, and BAPCPA extended non-dischargeability to private student loans, so both features of the regime push in the same direction as a rise in ϕ . Since exposure to the means test nonetheless varies across components of the consumer debt bundle, we verify in Section 6 that the results are not driven by any single component.

⁵ Homeownership also reduces geographic mobility independently of the balance sheet (Oswald 1996), which may affect workers' willingness to bear displacement risk. The individual fixed effects in our empirical specifications absorb time-invariant differences in housing tenure.

our focus: it is the component of household liabilities that both generates financial fragility in the displacement state and responds to the policy variation we exploit.

Working in a unionized establishment provides a benefit $B > 0$, reflecting higher wages, better working conditions, and voice in the workplace. Because the union is the exclusive bargaining agent, this benefit accrues to every worker in the bargaining unit, member or not. Unionization also raises the risk that the establishment closes or relocates. Relative to a non-union closure probability p_0 , a unionized establishment of organisational strength m carries an additional closure probability $\Delta p(m) \geq 0$, increasing in m , with $\Delta p(0) = 0$. Strength here is the union’s capacity to bargain and resist cost-cutting, which rises with the share of the workforce who are dues-paying members; a better-organised workplace wins more for its members but also provokes stronger employer responses.

This assumption is supported by recent empirical evidence. Successful union elections reduce establishment survival (Wang and Young 2024), depress firm equity value (Lee and Mas 2012), and raise workplace closure probabilities (Bryson 2004), even though earlier close-election designs found little effect (DiNardo and Lee 2004).⁶ That these survival effects are larger where organising is stronger motivates treating $\Delta p(m)$ as increasing in union strength.

Let W be the baseline payoff while the establishment remains open. If the establishment closes, the worker suffers a loss $\mathcal{A}(D; \phi)$, which is increasing in both arguments and with a positive cross-partial: higher consumer debt implies larger losses from default, arrears, and credit damage, and these losses are larger when debt relief is harder to obtain.

Union membership requires dues $c > 0$ and, in return, confers excludable benefits $e > 0$ such as grievance representation, legal services, and similar member-only protections that the union can withhold from those who do not pay. The two union benefits differ such that bargained benefit B is non-excludable within the bargaining unit: the negotiated wages and conditions cover every worker,

⁶ The perceived risk is also salient in recent high-profile episodes: in June 2026, Apple closed its Towson, Maryland store, the first unionized Apple location in the United States, prompting an unfair labor practice charge alleging retaliation, which Apple denies (Scheiber 2026).

member or not, so B is in effect a public good inside the unit. The member benefit e is excludable and conditional on payment, a club good available only to dues-payers. This is what makes membership a decision distinct from employment in RTW states, where the law does not bundle the two.

In non-RTW states, union security ties membership to the job, so a covered job bundles the unit-wide benefit B , the member benefit e , the dues, and the closure risk of a strongly organised establishment, whose compulsory membership places its strength at m_3 . The expected payoffs are

$$u(U) = W + B + e - c - [p_0 + \Delta p(m_3)] \mathcal{A}(D; \phi)$$

and

$$u(N) = W - p_0 \mathcal{A}(D; \phi),$$

so the worker takes the union-covered job if and only if $u(U) > u(N)$, or equivalently when

$$B + e > c + \Delta p(m_3) \mathcal{A}(D; \phi) \quad (1)$$

The closure term on the right-hand side rises with both D and ϕ through $\mathcal{A}$: an indebted worker, who would bear larger losses if a unionized establishment closed, is more deterred from entering union-covered employment, the more so when debt relief is costly.

In RTW states, the two margins separate. Taking a union-covered job requires no dues and confers only the unit-wide benefit B , while exposing the worker to the closure risk of a more weakly organised establishment, whose voluntary membership places its strength at $m_1 < m_3$. The entry condition is

$$B > \Delta p(m_1) \mathcal{A}(D; \phi) \quad (2)$$

Conditions (1) and (2) both set the benefit of the covered job against the closure loss, but that loss is far smaller in RTW states: a weakly organised workplace carries a low $\Delta p(m_1)$, so the closure risk a debt-burdened worker weighs on entry is correspondingly slight.

Conditional on holding a union-covered job in an RTW state, the worker chooses whether to join. She receives the unit-wide benefit B either way; paying dues buys the excludable benefit e ; and her own membership is a contribution to union strength, raising it from m_1 if she free-rides to $m_2 > m_1$ if she joins; and a stronger union is more exposed to closure.⁷ The payoff to joining is

$$W + B + e - c - [p_0 + \Delta p(m_2)]\mathcal{A}(D; \phi),$$

against a payoff to free-riding of

$$W + B - [p_0 + \Delta p(m_1)]\mathcal{A}(D; \phi).$$

The unit-wide benefit B and the baseline risk p_0 are common to both and cancel, so the worker remains a member if and only if

$$e > c + [\Delta p(m_2) - \Delta p(m_1)]\mathcal{A}(D; \phi) \quad (3)$$

Membership is worthwhile when its excludable benefit exceeds the dues plus the additional closure risk a stronger union brings. This closure term enters through $\mathcal{A}$, so it rises with debt and with ϕ : a financially fragile worker is less willing to join, precisely because joining strengthens the union and raises the closure risk she is least able to absorb.

5.2 Implications of BAPCPA

Within this framework, BAPCPA raised the cost of obtaining relief from unsecured debt (a rise in ϕ) and so raised $\mathcal{A}(D; \phi)$ at any given debt level. Because $\mathcal{A}$ multiplies a closure term in every condition, the reform tightens each margin through one channel: the displacement loss a worker would bear if a unionized establishment closed. The framework delivers four predictions that map onto the empirical design. In non-RTW states, exposure reduces entry into union-covered

⁷ For this margin to respond, the worker must treat her own membership as a non-negligible contribution to union strength, so that $\Delta p(m_2) - \Delta p(m_1)$ is appreciable. Under strict atomism, where each worker takes union strength as given, this gap would be of order $1/N$ and the closure term would vanish, leaving the classic free-rider comparison of e against c (Olson 1965; Kelly and Kelly 1994). We adopt the former reading, as befits a framework concerned with the determinants of collective participation.

employment, through condition (1), where the closure term $\Delta p(m_3)\ell$ is large. In RTW states, entry is largely insensitive, through condition (2), because a weakly organised establishment carries a small $\Delta p(m_1)$. In RTW states, exposure reduces the retention of formal membership among workers already in union-covered jobs, through condition (3). In non-RTW states, no separate membership margin exists, since membership is tied to the job itself. The asymmetry across institutional regimes is the organising prediction the empirical design was built to test. We set out the framework alongside the results rather than as a prior derivation, and its value lies in showing that a single mechanism (the displacement loss a financially fragile worker would bear if a unionized establishment closed) accounts for the full pattern of findings once it is switched onto different margins by state labour law and by how strongly each kind of workplace is organised.⁸

Two features of the framework deserve emphasis. First, a higher ϕ raises ℓ at any given debt level, lowering participation on every margin; but by tightening consumer credit the reform also reduces realised D , and since ℓ is increasing in D , this decline by itself pushes participation back up. A net decline in participation therefore requires the direct cost-of-relief channel to outweigh the offsetting effect of lower debt, an outcome the model permits but does not guarantee. Second, the exclusion of mortgage debt yields a testable restriction: because ℓ is defined over unsecured debt alone and the reform left secured claims essentially unchanged, the framework predicts that BAPCPA should move neither mortgage debt nor union participation through any mortgage channel. Any positive association between mortgage holding and union employment instead reflects selection, with the union wage premium facilitating homeownership, rather than mortgage debt encouraging union participation.

⁸ Adding a random utility component with a logistic distribution to each option converts conditions (1) to (3) into choice probabilities that decline smoothly in D and ϕ (Train 2009; Galanis et al. 2025), mapping directly to the linear probability specifications estimated in Section 6.

6. Empirical Strategy and Results

6.1 Reduced-Form Evidence

To quantify the relationship between individual indebtedness and the likelihood of being employed in a unionized workplace, we estimate the following specification:

$$Y_{ist} = \alpha + \beta Debt_{ist} + X_{ist}\delta + \gamma_i + v_s + \kappa_t + \varepsilon_{ist} \quad (4)$$

where Y_{it} is a binary indicator that equals one if individual i reports holding a unionized job in PSID wave t , and zero otherwise. We estimate a linear probability model (LPM) to facilitate interpretation of coefficient magnitudes, and we show that the results are robust to using a panel probit specification. Our key independent variable is the income share of consumer debt (e.g., credit card balances, student loans). The debt measure is expressed as the natural logarithm of their respective shares of household income, a transformation that mitigates the skewed distribution of debt shares and allows coefficients to be interpreted as approximate percentage changes. The vector X_{ist} includes time-varying individual-level controls: age, education, and per capita household income as a proxy for overall household economic well-being. All LPM regressions include individual (worker), state, and year fixed effects to account for unobserved heterogeneity and time trends. Standard errors are clustered at the worker level.

Table 2 reports these correlations. Columns 1 and 2 show that the consumer debt share is negatively associated with union employment. The LPM estimate (column 1) implies that a 10-percentage-point increase in the consumer debt share is associated with a 2.1 percentage-point decrease in the probability of holding a unionized job, and the panel probit (column 2) confirms this negative association. One interpretation is that more heavily indebted households avoid union jobs, which may be perceived as less secure given the risk of employer relocation or restructuring.

Table 2: Correlations between Indebtedness and Union Jobs

Dep. Var.	Pr(Union Job)	
	LPM	Probit
	(1)	(2)
Consumer Debt Share	-0.00212* (0.00120)	-0.0318*** (0.0113)
Mean of dep. var.	.188	.186
Observations	45,956	50,257
R-squared	0.755	

Notes: The table reports estimated correlations between income shares of debt and the probability of holding a unionized job, using a linear probability model (column 1) and a probit model (column 2). Debt-share variables are log-transformed. The linear probability specification includes year, worker, and state fixed effects. In the probit model, the same sets of year and state dummies are included. All specifications control for age, age squared, educational attainment (elementary, secondary, tertiary), and per-capita household income. Standard errors are clustered at the worker level. *** p<0.01, ** p<0.05, * p<0.1.

6.2 The 2005 Bankruptcy Reform as a Natural Experiment

6.2.1 Effects on Debt

A potential concern with the preceding analysis is that the observed negative correlation between consumer debt burden and unionized employment may be driven by reverse causality. Specifically, rather than indebted workers avoiding union jobs, it is possible that individuals employed in unionized workplaces accumulate less personal debt due to higher and more stable earnings. Under this interpretation, the negative association would reflect selection into lower debt levels because of union employment, rather than debt inducing sorting away from union jobs.

To overcome this endogeneity challenge, we leverage the plausibly exogenous variation in consumer debt generated by the 2005 BAPCPA reform. We estimate the following event-study difference-in-differences approach that specification:

$$Debt_{ist} = \gamma_i + v_s + \kappa_t + \beta_t Treatment_i \times Post_t + X_{ist} \delta + \varepsilon_{ist} \quad (5)$$

where the dependent variable *Debt* denotes the income share of consumer debt for individual i in state s in year t . We include individual fixed effects, γ_i , state fixed effects, ν_s , and year fixed effects, κ_t . The coefficient of interest, β_t , is attached to interactions between the treatment indicator and year dummies, with 2003 as the omitted baseline year. The vector X_{ist} contains time-varying individual controls (age, age squared, marital status, and education indicators) as well as per capita household income, which absorbs differential exposure to the early-2000s credit expansion across income groups. Standard errors are clustered at the individual level.

A central feature of the BAPCPA reform is the means test, which restricts access to Chapter 7 bankruptcy and the immediate debt discharge of unsecured consumer debt that it provides for households whose income exceeds their state median.⁹ Following the reform, households above the threshold are required to file under Chapter 13, a multi-year, supervised repayment plan that is more costly and results in lower debt relief. We leverage the characteristics of the means test to define a household as treated if its gross income in 2003, the last pre-reform PSID wave, exceeded the applicable state-family-size median income threshold published by the U.S. Trustee Program (UST), the federal body responsible for administering the means test. These thresholds vary by state and household size, are expressed in 2004 dollars, and are deflated to 2003 dollars before comparison with household income. Treatment status is assigned once, using the 2003 cross-section, and held fixed throughout the panel.

To ensure comparability between treated and control households, we restrict the estimation sample to households whose 2003 income falls within 90 percent of their applicable threshold. This bandwidth restriction excludes households at the extreme tails of the income distribution for whom the means test is either clearly irrelevant or never realistically binding. The resulting sample comprises 4,295 households (42 percent treated, 58 percent control), with treated households averaging approximately \$74,000 in gross income against a mean threshold of \$54,000, and control households averaging approximately \$34,000 against a mean threshold of \$55,000.

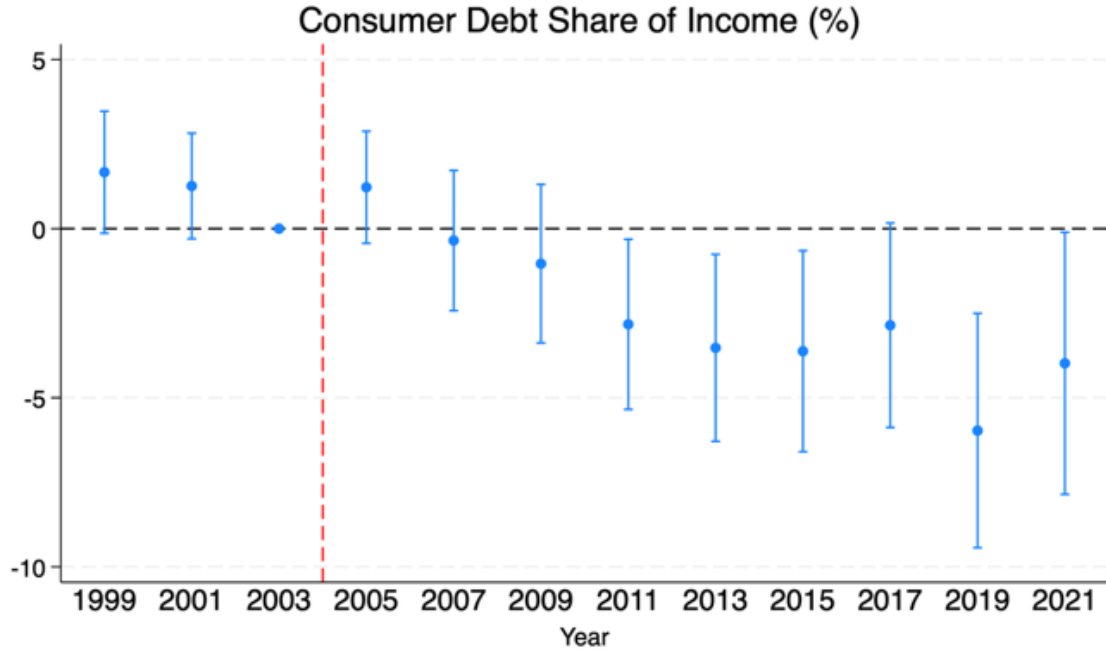
⁹ This measure is family size adjusted.

For our identification to hold, three conditions must be satisfied. First, in the absence of BAPCPA, consumer debt trajectories for households above and below the state median income threshold would have followed parallel trends. Second, the income threshold used to assign treatment is not confounded by pre-existing differences in debt accumulation patterns across income groups. We absorb the principal channel through which such confounding could operate, namely the differential exposure to the early-2000s credit expansion, by controlling for per capita income. Third, BAPCPA affects union participation only through its impact on household indebtedness, consistent with the fact that the reform targeted bankruptcy access rather than labor market regulation.

Figure 3 plots the event-study coefficients from Equation (6) for consumer debt. The pre-reform coefficients on consumer debt for 1999 and 2001 are small, positive, and statistically indistinguishable from zero. A joint test fails to reject the null of parallel pre-trends ($F(2, 3611) = 1.62, p = 0.198$). Following the reform, post-2005 coefficients on consumer debt turn negative and grow in magnitude over time, reaching approximately -3 to -4 percentage points by 2011 to 2015 and persisting through 2021. The gradual rather than immediate decline is consistent with anticipatory behavioral adjustment: BAPCPA was introduced in Congress in 2001 and debated extensively before its April 2005 passage, and prior research documents both a pre-reform filing rush and anticipatory tightening of credit standards by lenders.¹⁰

¹⁰ We find no systematic differences in the mortgage share of income between treated and control households after BAPCPA (Figure A1), confirming that BAPCPA operated specifically through the consumer credit channel, the form of debt directly targeted by the means test rather than through broader household borrowing behavior.

Figure 3: Event Study of the BAPCPA's Effects on Consumer Debt – 2001-2021



Notes: Event-study estimates based on Equation (5) of the impact of the 2005 BAPCPA reform on consumer debt as a share of income. Treatment is defined based on whether the household's gross income in 2003 exceeded the applicable state-family-size median income threshold published by the U.S. Trustee Program, which determines eligibility under the BAPCPA means test. The estimation sample is restricted to households whose 2003 income falls within 90 percent of their applicable threshold, excluding those at the extreme tails of the income distribution. The red vertical dashed line marks 2004, between the 2003 baseline year and the 2005 enactment of BAPCPA. Blue whiskers denote 95 percent confidence intervals. The specification includes individual, state, and year fixed effects and control for age, age squared, marital status, education, and per capita household income. Standard errors are clustered at the individual level. (Source: PSID; U.S. Trustee Program median income tables)

6.2.2 Effects on Union Participation

Having established that the 2005 BAPCPA restricted bankruptcy access for above-median income households, whose debt shares of income declined over time, we now examine whether this reform translated into changes in union participation. We approach the question from two angles.

First, Table 3 documents wave-to-wave transition rates into and out of union jobs and union membership, separately for Right-to-Work (RTW) and non-Right-to-Work (non-RTW) states. Panel A reports transitions in union job coverage and Panel B reports transitions in union membership, which is conditional on the worker holding a union job in both the previous and current waves. Two patterns are worth noting. First, union dynamics weakened markedly after 2005.

The probability of entering a union-covered job fell from 5.4 to 3.3 percent per wave in non-RTW states, and from 3.6 to 2.1 percent in RTW states. The probability of becoming a union member among workers in union jobs fell even more sharply: from 48.7 to 17.3 percent in non-RTW states, and from 27.4 to 11.8 percent in RTW states. While these unconditional rates pool treated and control households and therefore cannot themselves identify the effect of BAPCPA, they illustrate the broader weakening of the unionization pipeline over the period.

Table 3: Union Entry and Exit Rates by Right to Work Status

	Non-RTW states		RTW states	
	Pre-2005	Post-2005	Pre-2005	Post-2005
<i>Panel A: Union job transitions</i>				
Switch INTO union job (%)	5.41	3.31	3.55	2.13
N	3,214	11,083	3,550	12,883
Switch OUT of union job (%)	12.94	9.58	19.28	18.79
N	1,213	3,456	581	1,623
<i>Panel B: Union membership transitions (conditional on holding union job in both waves)</i>				
Switch INTO membership (%)	48.65	17.32	27.42	11.84
N	74	179	62	228
Switch OUT of membership (%)	1.84	1.34	3.57	1.84
N	926	2,770	364	978

Notes: Wave-to-wave transition rates between PSID waves (biennial from 1999). Union job transitions are defined conditional on the previous wave's union job status. Union membership transitions are defined conditional on the worker holding a union job in both the previous and current wave. States that switched RTW status during the sample period are excluded. Source: PSID 1999–2021.

Second, the pre-reform institutional contrast between RTW and non-RTW states is visible in the raw data. Workers in RTW states were considerably more likely to drop formal membership while remaining in a union job (3.6 percent per wave pre-2005, compared with 1.8 percent in non-RTW states), consistent with the legal arrangement under which RTW workers can free-ride on collective bargaining without paying dues. In what follows, we use the 2005 BAPCPA reform to

isolate how exogenous variation in consumer debt contributes to these declining transition rates and how the effect varies across institutional settings.

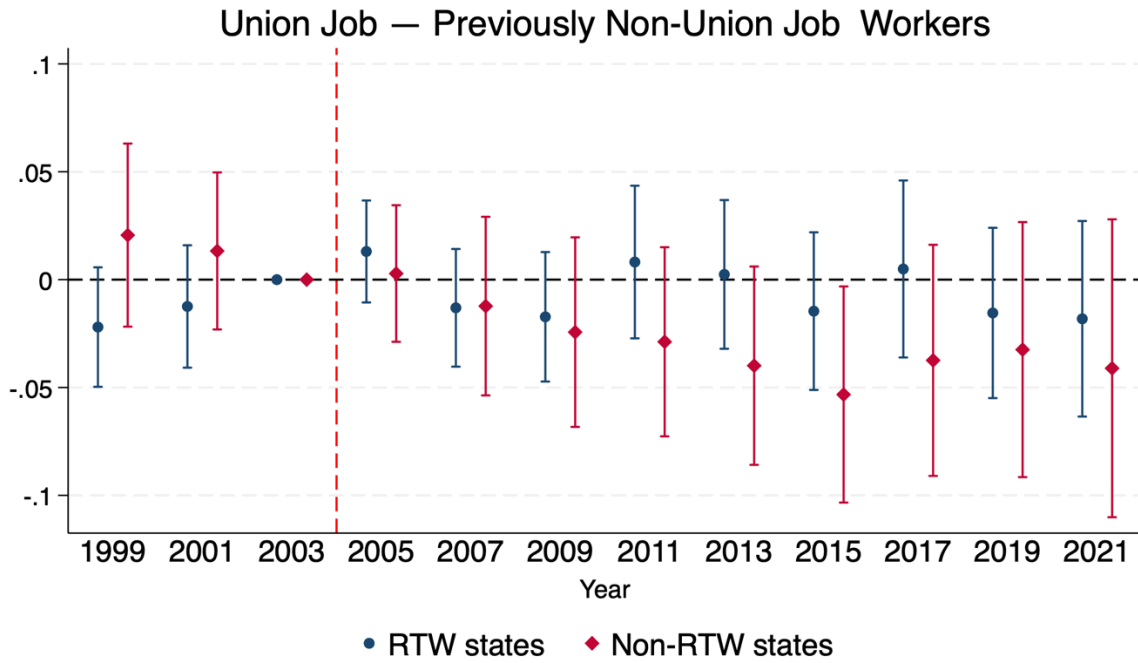
Extensive Margin Effects

Figure 4 plots the event-study coefficients from Equation (6) with union job coverage as the dependent variable, separately for workers in Right-to-Work (RTW) states and non-Right-to-Work (non-RTW) states. We restrict the sample to workers who were not in a union-covered job prior to the reform, capturing the extensive margin of entry into union employment. In RTW states, the coefficients are small and statistically indistinguishable from zero throughout the sample period. This null result is theoretically expected: in RTW states, workers cannot be required to join a union or pay dues as a condition of employment, so the financial stakes of holding a union-covered job are low, and the decision is unlikely to respond to household financial conditions.

In non-RTW states, the pattern is markedly different. The pre-reform coefficients are close to zero, supporting the parallel trends assumption. From 2007 onwards, they turn persistently negative, reaching approximately -4 to -5 percentage points between 2013 and 2021. In states where union security agreements make membership and dues effectively compulsory in unionized workplaces, BAPCPA exposure reduces the probability that previously non-union workers enter union-covered employment.

The contrast between RTW and non-RTW states is consistent with a financial-risk channel: by restricting access to Chapter 7 bankruptcy for above-median income households, BAPCPA increased financial fragility and reduced workers' willingness to take on the financial commitment of union-covered employment, but only where that commitment is legally binding.

Figure 4: Event Study of the BAPCPA's Effects on Unionized Employment



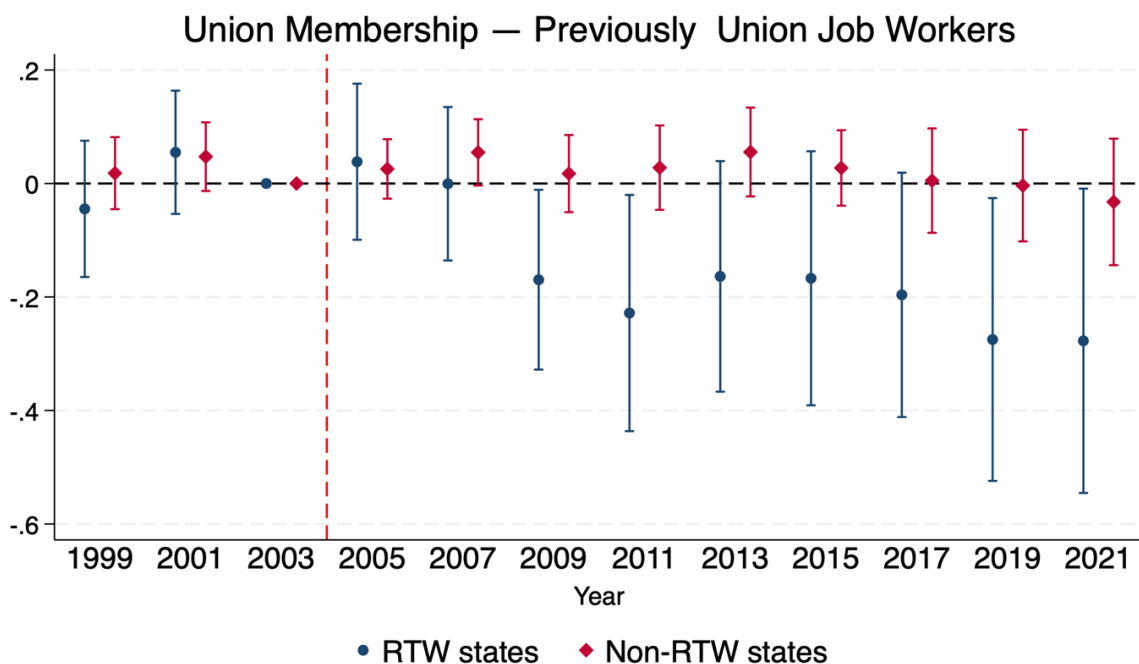
Notes: Event-study estimates based on Equation (5) of the impact of the 2005 BAPCPA reform on the probability of holding a union-covered job. The sample is restricted to workers who were not in a union-covered job prior to the reform, capturing the extensive margin of entry into union employment. Blue circles denote estimates for workers in Right-to-Work (RTW) states, where workers cannot be required to join a union or pay dues as a condition of employment. Red diamonds denote estimates for workers in non-Right-to-Work (non-RTW) states, where union security agreements make membership and dues effectively compulsory in unionized workplaces. Treatment is defined based on whether the household's gross income in 2003 exceeded the applicable state-family-size median income threshold published by the U.S. Trustee Program, which determines eligibility under the BAPCPA means test. The estimation sample is restricted to households whose 2003 income falls within 90 percent of their applicable threshold. The red vertical dashed line marks 2004, between the 2003 baseline year and the 2005 enactment of BAPCPA. Whiskers denote 95 percent confidence intervals. All specifications include individual, state, and year fixed effects and control for age, age squared, marital status, education, and per capita household income. Standard errors are clustered at the individual level. A joint test of pre-reform coefficients (1999 and 2001) yields $F(2, 991) = 0.12$, $p = 0.883$ for the non-RTW sample, supporting the parallel trends assumption. Source: PSID; U.S. Trustee Program median income tables.

Intensive Margin Effects

Figure 5 plots the event-study coefficients from Equation (6) with union membership as the dependent variable, separately for workers in Right-to-Work (RTW) states and non-Right-to-Work (non-RTW) states. We restrict the sample to workers who were in a union-covered job prior to the reform, capturing the intensive margin of union participation.

In non-RTW states where union membership and dues are effectively compulsory in unionized workplaces, the coefficients are small and statistically indistinguishable from zero throughout the sample period. Workers in these states cannot easily exit membership without leaving their union job altogether, so the intensive margin is not where the financial-risk channel operates. In RTW states, however, the pattern is markedly different. The pre-reform coefficients are close to zero, supporting the parallel trends assumption. From 2009 onwards, they turn persistently negative, reaching approximately 20 to 28 percentage points below baseline by 2011 to 2021. In states where workers can hold union-covered jobs without paying dues or joining the union, BAPCPA exposure substantially reduces the probability that previously unionized workers retain formal membership.

Figure 5: Event Study of the BAPCPA's Effects on Union Membership



Notes: Event-study estimates based on Equation (5) of the impact of the 2005 BAPCPA reform on the probability of union membership. The sample is restricted to workers who were in a union-covered job prior to the reform, capturing the intensive margin of union participation. Blue circles denote estimates for workers in Right-to-Work (RTW) states, where workers can hold union-covered jobs without paying dues or joining the union. Red diamonds denote estimates for workers in non-Right-to-Work (non-RTW) states, where union security agreements make membership and dues effectively compulsory in unionized workplaces. Treatment is defined based on whether the household's gross income in 2003 exceeded the applicable state-family-size median income threshold published by the U.S. Trustee Program, which determines eligibility under the BAPCPA means test. The estimation sample is restricted to households whose 2003 income falls within 90 percent of their applicable threshold. The red vertical dashed line marks 2004, between the 2003 baseline year and the 2005 enactment of BAPCPA. Whiskers denote 95 percent confidence intervals. All specifications include individual, state, and year fixed effects and control for age, age squared, marital status, education, and per capita household income. Standard errors are clustered at the individual level. Source: PSID; U.S. Trustee Program median income tables.

These results also bear on the two offsetting forces identified in the conceptual framework. Because the displacement loss is increasing in debt, a higher cost of relief lowers participation while the accompanying contraction in consumer credit, by reducing realised debt, works in the opposite direction; that the participation effects are negative and grow over the post-reform period indicates that the cost-of-relief channel dominates. Consistent with the framework's restriction to unsecured debt, the reform has no detectable effect on mortgage shares (Figure A1), a placebo confirming that it operated through the unsecured-credit channel rather than through household borrowing in general.

7. Conclusions

Using individual-level data from the PSID and the 2005 BAPCPA reform as a natural experiment, we show that tightened bankruptcy access increased household financial fragility and constrained union participation. In non-RTW states, financially constrained workers respond on the extensive margin, avoiding entry into union-covered employment; in RTW states, they respond on the intensive margin, exiting formal membership. Our findings extend scholarship on union decline by identifying household balance sheet pressures as an additional mechanism shaping labor market choices, complementing existing explanations centered on employer opposition, globalization, shifts in production, and institutional change. Although union jobs typically offer higher wages and greater employment protections, financially constrained workers appear to prioritize income continuity and perceived job stability over potential wage gains. These results highlight the importance of integrating household financial conditions into theoretical accounts of collective action, worker power, and industrial relations institutions.

Our results carry implications for how unions and policymakers understand barriers to union participation. If debt-burdened workers face greater perceived employment risks in unionized workplaces, then institutional environments that insulate workers from plant closures and outsourcing may be increasingly important for recruitment and retention. Policy measures that

reduce household exposure to financial shocks, including expanded bankruptcy relief or more comprehensive public provision of essential goods, may indirectly strengthen the environment in which collective bargaining occurs. For unions, strategies that foreground job security and limit employer discretion during restructuring may be particularly salient for financially vulnerable workers.

Future research should assess whether similar mechanisms operate in institutional settings where bargaining coverage is decoupled from individual workplace choice, including systems with sectoral or coordinated bargaining, Ghent arrangements, multi-employer agreements, or stronger employment protection legislation. Cross-national evidence is particularly valuable for assessing whether household indebtedness plays a comparable role in labor markets where union participation is less tied to individual workplace choice. Further inquiry is also needed on how different forms of debt, including student, medical, and mortgage debt, shape preferences for workplace voice, non-wage benefits, and collective representation. Together, these avenues would provide a more comprehensive understanding of how household financial constraints interact with industrial relations institutions to shape labor market behavior in a causal manner.

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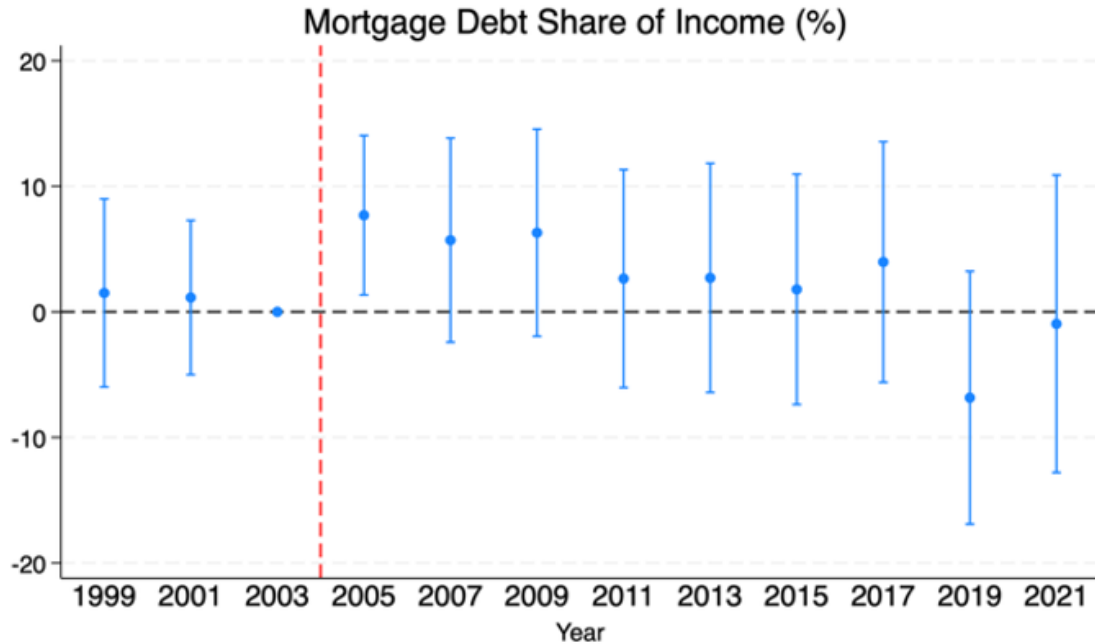
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Appendix

Figure A1: Event Study of the BAPCPA's Effects on Mortgage – 2001-2021



Notes: Event-study estimates based on Equation (5) of the impact of the 2005 BAPCPA reform on mortgage debt as a share of income. Treatment is defined based on whether the household's gross income in 2003 exceeded the applicable state-family-size median income threshold published by the U.S. Trustee Program, which determines eligibility under the BAPCPA means test. The estimation sample is restricted to households whose 2003 income falls within 90 percent of their applicable threshold, excluding those at the extreme tails of the income distribution. The red vertical dashed line marks 2004, between the 2003 baseline year and the 2005 enactment of BAPCPA. Blue whiskers denote 95 percent confidence intervals. The specification includes individual, state, and year fixed effects and control for age, age squared, marital status, education, and per capita household income. Standard errors are clustered at the individual level. (Source: PSID; U.S. Trustee Program median income tables)