

# The Effect of Minimum Wage on Consumer Bankruptcy\*

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## Abstract

We use cross-state differences in minimum wage (MW) and county-level consumer bankruptcy rates from 1991-2017 to estimate the effect of MW on consumer bankruptcy by exploiting policy discontinuities at the state borders. We find that Chapter 7 bankruptcy rates are significantly lower in counties belonging to states with higher MW compared to its neighboring county in the lower MW state (a 10% increase in MW decreases the bankruptcy rate by around 4.4%). However, for Chapter 13, we find no statistically significant relationship. Also, the data suggest that prior to the 2005 Bankruptcy Reform, the effect of MW on reducing bankruptcy was almost as twice as large than for the overall period.

**Keywords:** consumer bankruptcy, unsecured credit, minimum wage

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# 1 Introduction

The debate on Minimum Wages (MW) has received much attention recently with 29 States plus the District of Columbia, setting their MW rates higher than the federal minimum wage of \$7.25 per hour. Moreover, 18 of these States have scheduled annual adjustments for their MW that, in many cases, get to \$15 per hour. While most of the MW debate focuses on its labor market consequence (mostly employment and earnings), little or no attention has been given to its effects on credit markets and, in particular, on consumer bankruptcy.

The MW policy is primarily aimed at improving labor market conditions for young- to middle-aged or low-earning workers, which are also the main characteristics of many individuals filing for bankruptcy. Moreover, bankruptcy filers have strong labor market attachment in the sense that the employment rate among bankruptcy filers are slightly about the population counterpart ([Fisher \(2017\)](#)) and also the unemployment rate seems to be three times higher than the population ([Athreya and Simpson \(2006\)](#) and Bankruptcy Reports from the Institute of Financial Literacy).

Therefore, the potential consequences of MW changes on financially distressed households should be part of the policy debate if there is evidence of the effect of MW policy on consumer bankruptcy. This paper address this question by using cross-state differences in MW and county level consumer bankruptcy from 1991-2017 to estimate the effect of minimum wages on consumer bankruptcy by exploiting policy discontinuities at the state borders.

In principle, consumer bankruptcy can be seen as a form of implicit insurance in the sense that allows borrowers to eliminate or reduce the amount of debt payment in the event of sudden unforeseen contingencies. A natural question is then how bankruptcy interacts with other forms of insurance related to the different causes leading borrowers to bankruptcy. The literature have focused on this questions studying the interaction of bankruptcy with unemployment insurance ([Athreya \(2003\)](#), [Athreya and Simpson \(2006\)](#), and [Legal \(2019\)](#)) or health insurance ([Mahoney \(2015\)](#)).

Theoretically, a higher minimum wage can reduce the labor income risk face by working borrowers, which could improve their expected income reducing their bankruptcy risk for a given level of borrowing. However, it could increase borrowing ex-ante that can increase bankruptcies in the event of bad luck. We empirically evaluate which of these effects dominates. We find that Chapter 7 bankruptcy rates are lower in counties belonging to states with higher minimum wage compared to its neighboring county in the lower minimum wage state. However, for Chapter 13, we find no

statistically significant relationship, which suggests that the two effects are canceling each other. Also, the data indicate that before the 2005 Bankruptcy Reform, the effect of minimum wage on reducing bankruptcy was higher than after the reform.

A common concern in this methodology is the spillovers associated with the fact that the policy change in a given state can affect neighboring states' outcomes. For example, workers at the state borders can search more intensively for jobs in the neighbor state that raise the MW, firms in the state with lower MW could try to match compensations to retain workers, etc. The theoretical direction of the spillover effects is ambiguous. [Dube et al. \(2010\)](#) showed that the spillover effects of MW on employment and average earnings for the relevant workers are statistically insignificant (that is, the different effects cancel each other out). We perform several tests for spillovers effects of minimum wage changes on consumer bankruptcies and found no statistically significant effects. We conclude that spillovers are not a concern either for our results.

## 2 Minimum wages and consumer bankruptcy

Consumer bankruptcy filers tend to be relative low-to-middle income, young-to-middle age with strong labor market attachment if we consider that the employment rate among bankruptcy filers are slightly about the population counterpart ([Fisher \(2017\)](#)) and also the unemployment rate seems to be three times higher than the population ([Athreya and Simpson \(2006\)](#) and Bankruptcy Reports from the Institute of Financial Literacy). In this sense, we can expect that a labor market policy such as the minimum wage can affect bankruptcy decisions since it is particularly relevant to the same group of people for which borrowing and bankruptcy are relevant.

Using state-level data on consumer bankruptcy under chapters 7 and 13, [Figure 1](#) shows that states with higher minimum wages tend to have lower bankruptcy rates.

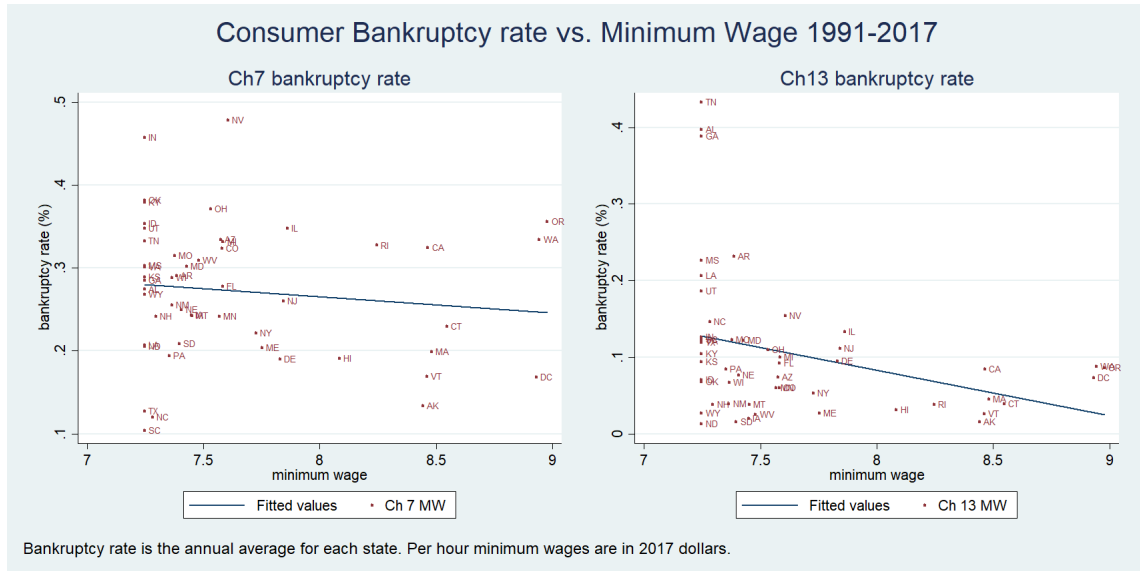


Figure 1: Average annual Ch7 and Ch13 consumer bankruptcy rate (in %) and real average hourly minimum wages (1991-2017).

Figure 1 is motivating, but at the same time does not allow to draw strong conclusions about the effect of minimum wages on bankruptcy since states are different in many other aspects than just their minimum wage levels. To test more formally the effect of minimum wages on consumer bankruptcy, I use policy discontinuity at the state border in the next section.

### 3 Contiguous Counties

Comparing states can be misleading since they are very different in terms of observable/unobservable both in levels and in growth. State/county fixed effects to control for these heterogeneities as long as they are constant over time. However, since MW is determined at the state level, changes in underlying state conditions (shocks) can influence both MW changes as well as bankruptcy decisions. A regression using state-levels (or all counties within states) would erroneously attribute changes in bankruptcy to changes in MW because it omits to control for such underlying changes.

To control for changes in underlying state-level conditions that may drive both MW changes and bankruptcy, we examine the difference in MW generosity between neighboring counties that belong to different states with different levels of MW. We refer to such counties as county-pairs (see for example [Dube et al. \(2010\)](#) and [Hagedorn et al. \(2019\)](#)). The basic idea is that state-level changes in

underlying conditions do not stop at the border and affect neighboring counties symmetrically. Also, bordering counties are similar in terms of geography, climate, labor market conditions, routes, etc., so it is more plausible that unobserved heterogeneity between contiguous counties evolves similarly, making them a better control group. Then, the discontinuity of the MW policy at the border can be exploited by using a Difference-in-Difference (DID) type regression to identify if differences in MW across county-pairs are associated with differences in bankruptcy rates.

As explained in [Dube et al. \(2010\)](#), contiguous border counties represent good control groups if there are significant differences in treatment intensity within cross-state county-pairs. Also, bordering counties are more similar to each other than another randomly chosen county, so it is more plausible that unobserved heterogeneity between contiguous counties evolves similarly. Figure 2 shows that, for the period in consideration, the number of counties-pairs with minimum wage differentials ranges from 200 to 1,600, and the average minimum wage difference between pairs ranges from 4% to 18%.

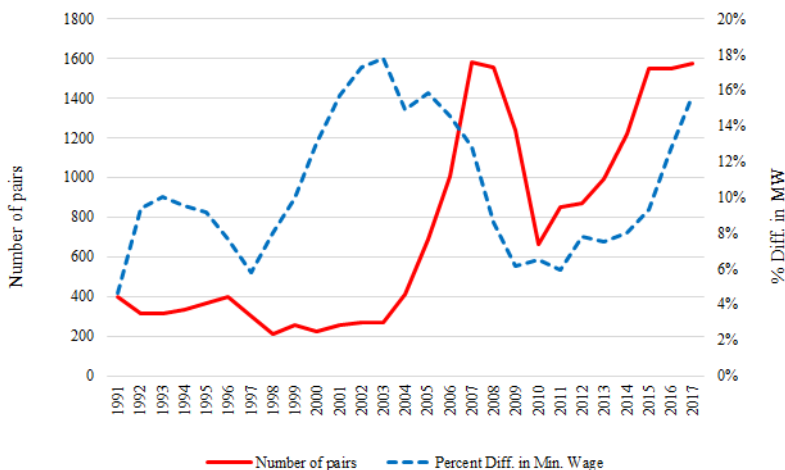


Figure 2: Number of county-pairs with difference in MW and average MW differentials from 1991-2017.

### 3.1 Data Sources

In the empirical analysis, we consider a sample of U.S. counties from 1991-2017 in annual frequency. In what follows, we describe the sources of the main variables used in the empirical analysis.

The data on annual county-level Chapter 7 bankruptcy rates comes from U.S. Courts records. We updated the data provided by [Keys \(2018\)](#). Data on minimum wages comes from [Dube et al.](#)

(2016), which we update it using the historical tables available at the U.S. Department of Labor website.<sup>1</sup>

The data for state-level UI comes from different issues of the "Significant Provisions of State UI Laws" of the US Department of Labor. These publications contain records on the maximum number of weeks and the maximum weekly benefit amount (WBA) that is available under the regular UI.<sup>2</sup> We follow Hsu et al. (2018) by defining UI generosity in a given state as the maximum amount of benefits available during an unemployment spell (i.e., the maximum number of weeks times maximum weekly benefit amount). These reports are available twice a year, for January and July. Since the data on bankruptcy is available at an annual frequency, we use the average to compute the UI values for a given year.

Data on state-level homestead exemption levels comes from Pattison (2018). The county unemployment rate comes from the Local Area Unemployment Statistics (LAUS) from the Bureau of Labor Statistics. County-level income comes from the Bureau of Economic Analysis (BEA) website.

**Comparative sample statistics.** The total number of bordering-counties used each year ranges from 1,099 to 1,117, which represents around 36% of the total number of counties in the mainland US and contains almost one-third of the population.<sup>3</sup>

A concern with the bordering-counties specification is that this sample may not contain the same information as the all-counties sample. Table 1 shows some statistics from both samples. Both samples are quite similar in terms of the variables of interest that are used, which mitigates the potential concern about the information cost of reducing the number of counties.

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<sup>1</sup>Available at <https://www.dol.gov/agencies/whd/state/minimum-wage/history>

<sup>2</sup>Available at <https://oui.doleta.gov/unemploy/statelaws.asp>

<sup>3</sup>Over the time, some counties disappeared and new ones were formed, etc.

Table 1: Comparative sample statistics

All counties					
	Mean	Std. Dev.	25th perc.	Median	75th perc.
Chap. 7 BK rate (%)	0.24, 0.28*	0.16	0.12	0.20	0.32
Min. Wage (per hour)	5.86	1.35	4.88	5.15	7.25
Max. UI Benefits	8,685	2,992	6,500	8,112	10,530
Unemp. Rate (%)	6.24	2.88	4.20	5.64	7.66
Income	3,353,919	12,952,007	273,022	645,628	1,799,394
Bordering counties					
Chap. 7 BK rate (%)	0.24, 0.28*	0.16	0.12	0.21	0.32
Min. Wage (per hour)	5.86	1.36	4.88	5.15	7.25
Max. UI Benefits	8,725	3,120	6,422	8,203	10,647
Unemp. Rate (%)	6.21	2.86	4.16	5.63	7.68
Income	3,154,821	11,500,000	256,170	627,258	1,741,193

\*First value of mean is unweighted, the second is the population weighted mean. The data on annual county-level Chapter 7 bankruptcy rates comes from US Courts records. I updated the data provided by [Keys \(2018\)](#). Minimum wage data comes from [Dube et al. \(2016\)](#), which we update it using the historical tables available at the U.S. Department of Labor website. The data for state-level UI comes from different issues of the "Significant Provisions of State UI Laws" of the US Department of Labor. Data on state-level homestead exemption levels comes from [Pattison \(2018\)](#). The county unemployment rate comes from the Local Area Unemployment Statistics (LAUS) from the Bureau of Labor Statistics. County-level income comes from the Bureau of Economic Analysis (BEA) website.

## 3.2 Results

The sample period for this exercise is from 1991-2017 at an annual frequency. As a benchmark specification, I estimate the following Difference-in-Difference (DID) type regression:

$$BK_{cpt} = \alpha + \eta \log(MW_{s(c)t}) + \phi_c + \tau_{pt} + X_{ct} + \varepsilon_{cpt} \quad (1)$$

Here  $BK_{cpt}$  represents bankruptcy percentage rate (either Ch7 or Ch13) in county  $c$  belonging to pair  $p$  at time  $t$ .  $\log(MW_{s(c)t})$  is the natural logarithm of the real hourly minimum wage.<sup>4</sup> The term  $\phi_c$  represents a county fixed effect that controls for observables/unobservables characteristics that are constant over time. The variables  $\tau_{pt}$  is a pair-specific time fixed effect that controls for changes in state-level underlying conditions, which is a key element in the identifying assumption of this setup.<sup>5</sup> To control for time-varying differences that are observed,  $X_{ct}$  includes county-level

<sup>4</sup>All the results are robust if consider the nominal wage instead.

<sup>5</sup>More specifically, the comparison is between bordering counties at a given point in time in which county-level

unemployment rate and income as well as other relevant state policies such as state home exception and Unemployment Insurance generosity. Controlling for these policies are relevant to address potential simultaneous treatment effect that is a concern in DID specifications.

Standard errors are two-way clustered at the state level and the border segment.<sup>6</sup> First, MW is constant across counties within a state. Second, each county is repeated as many times as it can be paired with a neighboring county in the other state. As explained in [Dube et al. \(2010\)](#), the presence of a single county in more than one pair induces a mechanical correlation across county-pairs and potentially across the entire border segment. Also, all standard errors are corrected for heteroskedasticity.

The identifying assumption for this local specification is that  $E(\log(MW_{ct}), \varepsilon_{cpt}) = 0$ , that is, within pair differences in minimum wages are uncorrelated with differences in the residual bankruptcy rate in either county. [Table 2](#) shows the results

Table 2: The effect of Minimum Wage on consumer bankruptcy (1991-2017)

Sample period	Ch7 bankruptcy rate			Ch13 bankruptcy rate		
	1991-2017	1991-2004	2006-2017	1991-2017	1991-2004	2006-2017
$\log(MW_{it})$	-0.129*** (0.041)	-0.266*** (0.084)	-0.013 (0.03)	-0.013 (0.021)	-0.013 (0.038)	0.008 (0.018)
Covariates ( $X_{ct}$ )	Y	Y	Y	Y	Y	Y
County FE	Y	Y	Y	Y	Y	Y
Pair-specific time FE	Y	Y	Y	Y	Y	Y
N. Obs.	41,680	18,224	21,660			

Standard errors are in parenthesis. Significance levels: \*10%, \*\*5%, \*\*\*1%. Standard errors are two-way clustered at the state level and at the border segment.

Interestingly, in any of the specifications, the results were significant for Chapter 13. For Chapter 7, [Table 2](#) shows that for the sample 1991-2017, a 10% increase in minimum wages is associated with around 13 fewer Chapter 7 bankruptcy filings per 100,000 individuals in the population or, alternatively, a 10% increase in minimum wage decreases bankruptcy rate by about 4.4% (for an average bankruptcy rate of 0.28% in the population).

Note that the period in consideration contains the last mayor bankruptcy reform in 2005 (BAPCPA) that made bankruptcy most costly, as explained earlier. [Table 2](#) also shows the same estimation variables were demeaned by their average (and controlling for other observables in  $X_{ct}$ ).

<sup>6</sup>A border segment is defined as the set of all counties on both sides of a border between two states.



but for the sub-period of 1991-2004. The main result is that before BAPCPA, the effect of minimum wages on Chapter 7 was bigger. A 10% increase in minimum wages was associated with 27 fewer filings per 100,000 individuals in the population or, alternatively, a 10% increase in minimum wages decreases bankruptcy rate by around 8.2% (for an average bankruptcy rate of 0.31% in the population for that period).

Analyzing the effect of minimum wages on bankruptcy after 2005 is difficult since it contains another major event as the Great Recession. After the Recession, the dynamics of bankruptcy seem that were dominated by the striking rise in long-term unemployment. Still, Table 2 also reports the result for sub-period 2006-2017 and we do not find a significant effect of minimum wage on Chapter 7 bankruptcy. An alternative explanation is that, as the result of the 2005 reform, filing cost increased, reducing the insurance component of the bankruptcy legislation, particularly for relatively low-income borrowers (Albanesi and Nosal (2018)). The result here suggests that it also reduced the insurance component of the minimum wage for this group of relatively low-income borrowers.

### 3.3 Spillovers

A common concern in this methodology is the spillovers associated with the fact that the policy change in a given state can affect neighboring states' outcomes. For example, workers at the state borders can search more intensively for jobs in the neighbor state that raise the MW, firms in the state with lower MW could try to match compensations to retain workers, etc. The theoretical direction of the spillover effects is ambiguous. Dube et al. (2010) showed that the spillover effects of MW on employment and average earnings for the relevant workers are statistically insignificant (that is, the different effects cancel each other out). In this section, we confirm that the spillover effects are not a concern for the case of consumer bankruptcy.

First, we perform the same exercise explained in Dube et al. (2010) in which we consider the outcomes in county-pairs relative to their values in the interior of the state (which are less likely to be affected by such spillovers). In particular, we estimate the following regression,

$$(BK_{cpt} - \bar{BK}_{st}) = \alpha + \eta \log(MW_{s(c)t}) + \phi_c + \tau_{pt} + (X_{ct} - \bar{X}_{ct}) + \varepsilon_{cpt} \quad (2)$$

Here,  $\bar{BK}_{st}$  is the average bankruptcy rate in the interior counties for state  $s$  at time  $t$  and serves as control for possible spillover effects.<sup>7</sup> Under this specification,  $\eta$  measures the effect of a change in the MW on one side of the border on the outcome relative to the state interior in relation to the relative outcome on the other side of the border.

Table 3 shows the result of testing for spillover effects under the specification in equation 2. Column (1) replicates the benchmark result from Table 2 and Column (2) show the estimates for equation 2. The estimate for  $\eta$  in Column (2) is not statistically significant, which implies that there is no evidence of spillover effects.

Table 3: Test of Cross-Border Spillover Effect from Minimum Wage Changes (1991-2017)

Sample period	Ch7 bankruptcy rate	
	$BK_{cpt}$	$(BK_{cpt} - BK_{st})$
$\log(MW_{it})$	-0.129*** (0.041)	-0.057 (0.032)
Covariates	Y	Y
County FE	Y	Y
Pair-specific time FE	Y	Y

Standard errors are in parenthesis. Significance levels: \*10%, \*\*5%, \*\*\*1%. Standard errors are two-way clustered at the state level and at the border segment.

Another way to test for spillovers is to divide the sample according to some geographic criteria. For example, as Figure 3 indicates, counties in the west part of the country tend to be larger, irregular in shape, and with a longer distance between bordering counties centroids. Table 4 shows the regression result for the whole country, for the subregions (West vs. East), and for bordering counties with centroid distances of more and less than 75 kilometers (as in Dube et al. (2016)).

<sup>7</sup>  $\bar{X}_{ct}$  is similarly defined for the other control variables.

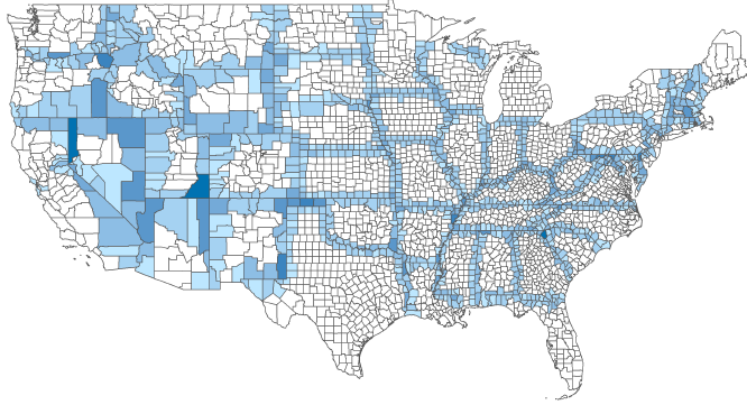


Figure 3: Longer distance among bordering-counties in the west half. Potentially lower spillovers.

We can expect that the commuting cost associated with working in the neighboring-county to be higher for the west than for the east half of the states. In this sense, the spillover effect would be lower for states in the west part. As we can see, the effect of spillover tends to have an attenuating bias since the coefficient for the western counties is more negative (a similar result is found for counties with centroids distance of more than 75 kilometers).

Table 4: Test of Cross-Border Spillover Effect based on Geographic Distance (1991-2017)

Sample period	Ch7 bankruptcy rate				
	U.S.	West	East	> 75 km	< 75 km
$\log(MW_{it})$	-0.129*** (0.041)	-0.282*** (0.0795)	-0.083** (0.037)	-0.327*** (0.088)	-0.071** (0.035)
Covariates ( $X_{ct}$ )	Y	Y	Y	Y	Y
County FE	Y	Y	Y	Y	Y
Pair-specific time FE	Y	Y	Y	Y	Y
N. Obs.	41,680	9,200	28,542	6,594	35,086

Standard errors are in parenthesis. Significance levels: \*10%, \*\*5%, \*\*\*1%. Standard errors are two-way clustered at the state level and at the border segment.  $X_{ct}$  includes county-level unemployment rate, housing prices, and income as well as other relevant state policies such as state home exception and Unemployment Insurance generosity.

## 4 Conclusion

Labor income is the main source of income for most households, which makes labor-market risks the primary source of income risk. MW policy is aimed at improving labor market conditions for young-to middle-aged or low-earning workers, which are also the main characteristics of many individuals filing for bankruptcy. In this paper, we argue that the potential consequences of MW changes

on financially distressed households should be part of the policy debate. We find that Chapter 7 bankruptcy rates are lower in counties belonging to states with higher minimum wage compared to its neighboring county in the lower minimum wage state. However, for Chapter 13, we find no statistically significant relationship, which suggests that the two effects are canceling each other.

Also, the data suggest that before the 2005 Bankruptcy Reform, the effect of minimum wage on reducing bankruptcy was higher than after the reform. Analyzing the effect of minimum wages on bankruptcy after 2005 is difficult since it contains another major event as the Great Recession. After the Recession, the dynamics of bankruptcy seem that were dominated by the striking rise in long-term unemployment. An alternative explanation is that, as the result of the 2005 reform, filing cost increased, reducing the insurance component of the bankruptcy legislation, particularly for relatively low-income borrowers ([Albanesi and Nosal \(2018\)](#)). The result here suggests that it also reduced the insurance component of the minimum wage for this group of relatively low-income borrowers. So the bankruptcy policy is also important for the effectiveness of labor market policies such as MW in helping middle- to low-income workers coping with labor income risks.

## 5 Appendix

### 6 Overview of Consumer Bankruptcy and Minimum Wage

#### 6.1 Consumer Bankruptcy

Consumer bankruptcy is a legal procedure through which borrowers can formally default on their unsecured debts. In the US, consumer bankruptcies almost entirely fall under Chapter 7 or Chapter 13 of the US Bankruptcy Code.

Chapter 7 represents around 70% of all consumer bankruptcies. Debtors obtain the full discharge of their total qualifying unsecured debts and their current and future earnings are protected from any debt collection action.<sup>8</sup> This chapter is a liquidation-type of bankruptcy since it requires the liquidation of all nonexempt assets to repay lenders. However, only 5% of Chapter 7 cases yield assets that could be liquidated to repay creditors, [Livshits et al. \(2007\)](#). Chapter 13 is a reorganization-type of bankruptcy. Debtors keep their assets and pay back all or a fraction of their debts through a repayment plan. The final amount paid back to lenders will depend on the debtor's income, expenses, and type of debt.

The Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA), sometimes referred to as the *New Bankruptcy Law*, was the last major change to the US Bankruptcy Code. BAPCPA increases the barriers for individuals to file for bankruptcy by (i) introducing Mean-tests for Chapter 7, (ii) adding more complicated paperwork requirements that resulted in higher court and legal fees (50% increase from \$921 to \$1,377 ([U.S.GAO \(2008\)](#))), (iii) requiring mandatory credit counseling, (iv) adding a two-year residency requirement, (v) increasing the waiting period to file again for Chapter 7 from 6 to 8 years (if received discharge the first time) (vi) adding a cap in state homestead exemption by requiring that to fully take advantage of the state homestead exemption (if any), the filer should have bought her/his home within 1,215 days (3.3 years) before filing otherwise a cap of around \$160,000 is applied.<sup>9</sup>

**Bankruptcy Exemptions.** Exemptions are State and Federal laws specifying types and amounts of assets that are protected from liquidation to pay creditors. In Chapter 7 bankruptcy,

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<sup>8</sup>Some debts like alimony, student loans, and most tax debts cannot be discharged.

<sup>9</sup>In order to qualify directly for Chapter 7, filers' income should be below their state median income for a household of their size. If no, the mean-test requires the filer's disposable income to be calculated. A bankruptcy filer will not pass the mean-test if its disposable income is beyond a certain threshold. Using administrative data from the US Court (2007), I find that 99% pass the mean-test.

exemptions are used to determine how much property filers are allowed to keep. In Chapter 13 bankruptcy, debtors keep all property but must pay unsecured creditors an amount equal to the value of nonexempt assets, so exemptions help keep debtors plan payments low.

Exemptions include homestead, personal property, retirement accounts, public benefits (social security benefits, unemployment benefits, veteran's benefits, public assistance, and disability or illness benefits.), among others. In wildcard, exemptions can be applied to any property. The amount of exempt assets varies widely across states. Table 5 in the appendix shows different exemptions levels for assets in 2007. For example, some states are very generous, providing unlimited homestead exemptions while others did not have it. Also, some states allow filers to choose between state or federal exemptions.

States update their exemptions levels form time to time. Table 6 in the appendix shows homestead exemptions levels for 1989 and 2017 and the years when they were updated.

## 6.2 Minimum wages

The federal minimum wage was created by the Fair Labor Standards Act of 1938 during the administration of Franklin D. Roosevelt.<sup>10</sup> In addition to establishing a minimum wage of 25 cents per hour, the Fair Labor Standards Act of 1938 mandated a 44-hour workweek, scheduled to decrease to 40 hours in three years, with time-and-a-half overtime wages (Atkas. (2015)).

The last revision of the Fair Labor Standards Act was in 2009 in which the federal minimum wage was increased to \$7.25 per hour. Many states have set their minimum wages above the federal level. As of October 2018, 29 states plus DC have minimum wages above the state level, 14 equal to the federal, two below the federal level, and 5 have no minimum wage requirement. For those states without minimum wage or with a minimum wage below the federal level, the federal applies.

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<sup>10</sup>Massachusetts was the first state in 1912 to pass a minimum wage law as a way to protect women and child laborers from discrimination. Thirteen more states, along with DC and Puerto Rico, followed in the next 11 years (Atkas. (2015)).

### 6.3 Graphs

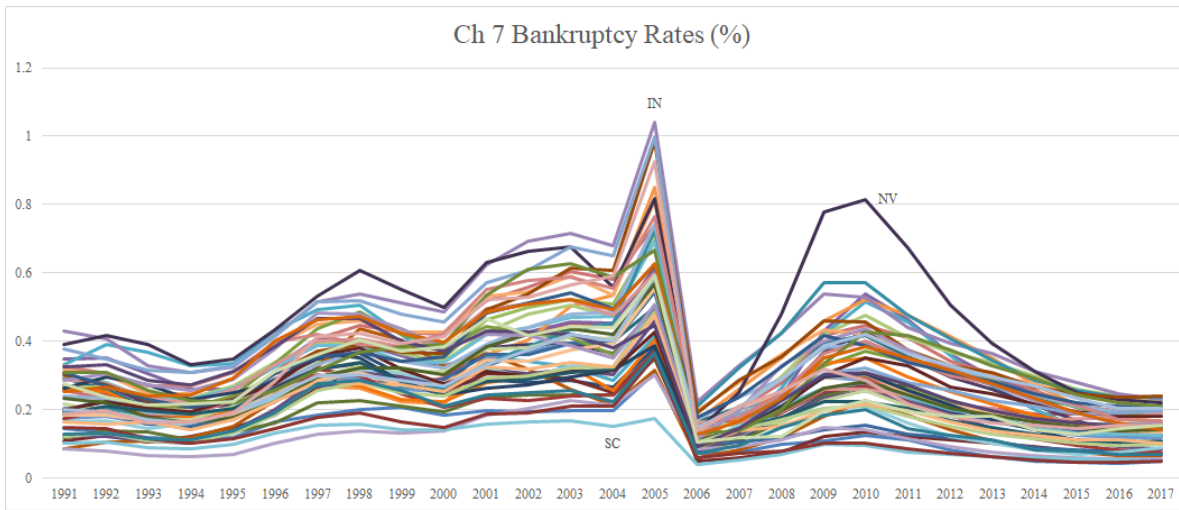


Figure 4: Average annual Chapter 7 consumer bankruptcy rate (in %) for each state from 1991-2017.

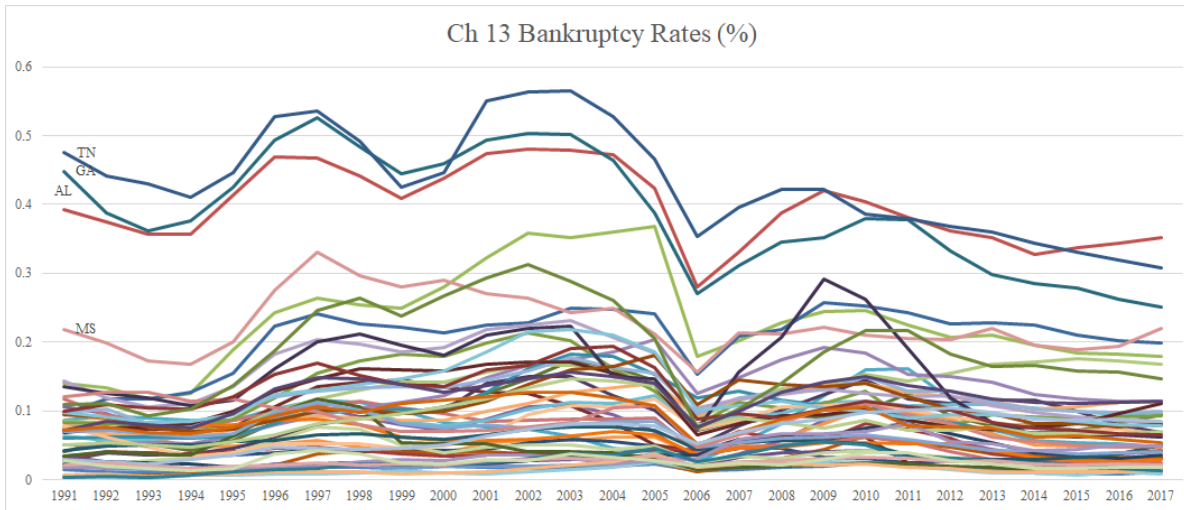


Figure 5: Average annual Chapter 13 consumer bankruptcy rate (in %) for each state from 1991-2017.

## 6.4 Tables

Table 5: Asset Exemptions (2007)

State	Homestead	Vehicle	Retirement	Other Financial Assets	Wildcard	Federal Available
Alabama	10,000	0	Unlimited	0	6,000	No
Alaska	67,500	7,500	Unlimited	3,500	0	No
Arizona	150,000	10,000	Unlimited	300	0	No
Arkansas	Unlimited	2,400	40,000	0	500	Yes
California, system 1	75,000	4,600	Unlimited	1,825	0	No
California, system 2	0	2,975	Unlimited	0	19,675	No
Colorado	90,000	6,000	Unlimited	0	0	No
Connecticut	150,000	3,000	Unlimited	0	2,000	Yes
Delaware	0	0	Unlimited	0	500	No
District of Columbia	Unlimited	5,150	Unlimited	0	17,850	Yes
Florida	Unlimited	2,000	Unlimited	0	2,000	No
Georgia	10,000	7,000	Unlimited	0	11,200	No
Hawaii	40,000	5,150	Unlimited	0	0	Yes
Idaho	50,000	6,000	Unlimited	0	1,600	No
Illinois	15,000	2,400	Unlimited	0	4,000	No
Indiana	0	0	Unlimited	0	20,000	No
Iowa	Unlimited	1,000	Unlimited	0	200	No
Kansas	Unlimited	40,000	Unlimited	0	0	No
Kentucky	10,000	5,000	Unlimited	0	2,000	No
Louisiana	25,000	0	Unlimited	0	0	No
Maine	70,000	10,000	Unlimited	0	12,800	No
Maryland	0	0	Unlimited	0	22,000	No
Massachusetts	1,000,000	1,400	Unlimited	1,250	0	Yes
Michigan	7,000	0	Unlimited	0	0	No
Minnesota	200,000	7,600	Unlimited	0	0	Yes
Mississippi	150,000	0	Unlimited	0	10,000	No
Missouri	15,000	6,000	Unlimited	0	1,250	No
Montana	200,000	5,000	Unlimited	0	0	No
Nebraska	12,500	0	Unlimited	0	0	No
Nevada	400,000	30,000	1,000,000	0	0	No
New Hampshire	200,000	8,000	Unlimited	0	8,000	Yes
New Jersey	0	0	Unlimited	0	2,000	Yes
New Mexico	60,000	8,000	Unlimited	0	1,000	Yes
New York	20,000	0	Unlimited	0	10,000	No
North Carolina	13,000	3,000	Unlimited	0	8,000	No
North Dakota	80,000	2,400	200,000	0	0	No
Ohio	10,000	2,000	Unlimited	800	800	No
Oklahoma	Unlimited	6,000	Unlimited	0	0	No
Oregon	33,000	3,400	15,000	15,000	800	No
Pennsylvania	0	0	Unlimited	0	600	Yes
Rhode Island	200,000	20,000	Unlimited	0	0	Yes
South Carolina	10,000	2,400	Unlimited	0	0	No
South Dakota	Unlimited	0	500,000	0	4,000	No
Tennessee	7,500	0	Unlimited	0	8,000	No
Texas	Unlimited	0	Unlimited	0	60,000	Yes
Utah	40,000	5,000	Unlimited	0	0	No
Vermont	150,000	5,000	Unlimited	1,400	8,400	Yes
Virginia	0	4,000	35,000	0	32,000	No
Washington	40,000	5,000	Unlimited	0	4,000	Yes
West Virginia	0	4,800	Unlimited	0	51,600	No
Wisconsin	40,000	0	Unlimited	2,000	10,000	Yes
Wyoming	20,000	4,800	Unlimited	0	0	No
Federal	18,500	5,900	Unlimited	0	20,450	n/a
Averages*	58,821	4,884	298,333	501	6,592	0

Source: Mahoney (2015). Note: Contemporaneous exemptions for couples filing jointly from Elias (2007). Under contemporaneous law, California residents can choose between system 1 and 2, and residents can choose federal exemptions in states where federal exemptions are available. States that did not have homestead exemptions are assigned a value of zero.

\*Excludes states with unlimited or n/a exemptions.



Table 6: Homestead exemptions 1989 and 2017

State	1989	2007	Years of change
Alabama	5000	15000	2015
Alaska	54000	72900	1992, 1999, 2004, 2008, 2012
Arizona	100000	150000	2004
Arkansas	999999	999999	
California	30000	75000	1990, 2010
Colorado	20000	60000	1991, 2000, 2007
Connecticut	0	75000	1993
Delaware	0	125000	2006, 2010, 2011, 2012
Florida	999999	999999	
Georgia	5000	21500	2001, 2012
Hawaii	20000	20000	
Idaho	30000	100000	1992, 2006
Illinois	7500	15000	2006
Indiana	7500	17600	2005, 2010
Iowa	999999	999999	
Kansas	999999	999999	
Kentucky	5000	5000	
Louisiana	15000	35000	2000, 2009
Maine	7500	47500	1991, 2001, 2003, 2008
Maryland	0	23675	2011, 2013, 2016
Massachusetts	100000	500000	2000, 2004
Michigan	3500	38225	2005, 2008, 2011, 2017
Minnesota	999999	390000	1993, 2007, 2010, 2012
Mississippi	30000	75000	1991
Missouri	8000	15000	2003
Montana	40000	250000	1997, 2001, 2007
Nebraska	10000	60000	1997, 2007
Nevada	95000	550000	1995, 2003, 2005, 2007
New Hampshire	5000	100000	1992, 2002, 2004
New Jersey	0	0	
New Mexico	20000	60000	1993, 2007
New York	10000	75000	2005, 2011
North Carolina	7500	35000	1991, 2006, 2009
North Dakota	80000	100000	2009
Ohio	5000	132900	2008, 2010, 2013
Oklahoma	999999	999999	
Oregon	15000	40000	1993, 2006, 2009
Pennsylvania	0	0	
Rhode Island	0	500000	1999, 2001, 2004, 2006, 2012
South Carolina	5000	59100	2006, 2010, 2012, 2016
South Dakota	999999	999999	
Tennessee	5000	5000	
Texas	999999	999999	
Utah	8000	30000	1997, 1999, 2013
Vermont	30000	125000	1997, 2009
Virginia	5000	5000	
Washington	30000	125000	1999, 2007
West Virginia	7500	25000	1996, 2002
Wisconsin	40000	75000	2009
Wyoming	10000	20000	2012

Source: Pattison (2018) constructed from Elias, Renauer and Leonard "How to File for Bankruptcy" (1989-2013) and state statutes.

Table 7: Annual Bankruptcy Rates by States 1991-2017

state	Chapter 7				Chapter 13				N. Obs.
	mean	sd	min	max	mean	sd	min	max	
Alabama	0.274	0.107	0.141	0.614	0.398	0.055	0.280	0.481	27
Alaska	0.133	0.065	0.043	0.309	0.016	0.004	0.009	0.025	27
Arizona	0.334	0.121	0.102	0.609	0.073	0.027	0.022	0.109	27
Arkansas	0.290	0.147	0.146	0.716	0.231	0.073	0.117	0.368	27
California	0.324	0.122	0.076	0.515	0.084	0.033	0.027	0.161	27
Colorado	0.323	0.158	0.166	0.849	0.060	0.017	0.036	0.102	27
Connecticut	0.229	0.078	0.101	0.382	0.039	0.009	0.025	0.060	27
DC	0.168	0.098	0.049	0.369	0.073	0.042	0.016	0.145	27
Delaware	0.190	0.062	0.077	0.348	0.095	0.034	0.041	0.173	27
Florida	0.277	0.101	0.087	0.494	0.092	0.036	0.035	0.150	27
Georgia	0.285	0.088	0.163	0.500	0.389	0.085	0.250	0.525	27
Hawaii	0.191	0.115	0.060	0.436	0.031	0.015	0.006	0.063	27
Idaho	0.353	0.153	0.157	0.738	0.070	0.030	0.024	0.117	27
Illinois	0.347	0.118	0.146	0.697	0.133	0.034	0.071	0.176	27
Indiana	0.457	0.182	0.224	1.042	0.126	0.046	0.050	0.203	27
Iowa	0.243	0.109	0.117	0.585	0.020	0.004	0.014	0.030	27
Kansas	0.289	0.133	0.126	0.692	0.094	0.018	0.057	0.123	27
Kentucky	0.379	0.140	0.196	0.812	0.104	0.024	0.060	0.141	27
Louisiana	0.207	0.121	0.080	0.545	0.206	0.046	0.096	0.257	27
Maine	0.204	0.099	0.074	0.461	0.026	0.008	0.016	0.042	27
Maryland	0.302	0.114	0.084	0.489	0.122	0.044	0.076	0.214	27
Massachusetts	0.198	0.073	0.076	0.366	0.045	0.013	0.029	0.083	27
Michigan	0.332	0.139	0.160	0.725	0.100	0.037	0.060	0.183	27
Minnesota	0.241	0.070	0.111	0.405	0.060	0.020	0.027	0.096	27
Mississippi	0.303	0.131	0.140	0.596	0.226	0.043	0.157	0.330	27
Missouri	0.314	0.126	0.170	0.743	0.122	0.026	0.076	0.178	27
Montana	0.242	0.114	0.101	0.565	0.038	0.016	0.017	0.077	27
Nebraska	0.249	0.097	0.135	0.554	0.076	0.025	0.035	0.117	27
Nevada	0.478	0.189	0.138	0.816	0.154	0.064	0.062	0.291	27
New Hampshire	0.241	0.084	0.095	0.387	0.038	0.018	0.018	0.081	27
New Jersey	0.260	0.078	0.091	0.426	0.111	0.037	0.066	0.172	27
New Mexico	0.255	0.113	0.109	0.567	0.039	0.028	0.013	0.117	27
New York	0.221	0.089	0.106	0.489	0.053	0.014	0.029	0.077	27
North Carolina	0.120	0.062	0.057	0.302	0.146	0.047	0.080	0.232	27
North Dakota	0.205	0.105	0.069	0.508	0.013	0.007	0.002	0.027	27
Ohio	0.371	0.169	0.191	0.984	0.110	0.031	0.070	0.181	27
Oklahoma	0.382	0.197	0.145	0.999	0.067	0.020	0.038	0.113	27
Oregon	0.356	0.149	0.157	0.764	0.086	0.026	0.048	0.127	27
Pennsylvania	0.194	0.095	0.095	0.485	0.085	0.029	0.048	0.147	27
Rhode Island	0.327	0.107	0.117	0.506	0.038	0.019	0.016	0.082	27
South Carolina	0.104	0.044	0.038	0.173	0.122	0.044	0.079	0.219	27
South Dakota	0.208	0.092	0.097	0.475	0.015	0.007	0.005	0.038	27
Tennessee	0.333	0.116	0.177	0.623	0.433	0.077	0.308	0.565	27
Texas	0.127	0.070	0.045	0.353	0.119	0.038	0.065	0.194	27
Utah	0.347	0.148	0.132	0.667	0.186	0.068	0.075	0.314	27
Vermont	0.169	0.079	0.067	0.363	0.026	0.014	0.003	0.055	27
Virginia	0.301	0.112	0.092	0.468	0.121	0.026	0.072	0.156	27
Washington	0.334	0.135	0.128	0.629	0.088	0.024	0.053	0.128	27
West Virginia	0.309	0.189	0.139	0.925	0.025	0.005	0.017	0.034	27
Wisconsin	0.288	0.102	0.148	0.595	0.067	0.026	0.023	0.104	27
Wyoming	0.268	0.132	0.104	0.590	0.026	0.009	0.013	0.042	27
Total	0.272	0.142	0.038	1.042	0.104	0.099	0.002	0.565	1377

Summary statistics for Consumer Bankruptcy by States constructed using bankruptcy filings data from the US Courts and population data from Census.

Table 8: Unemployment Insurance statistics 1991-2017

state	Regular number of weeks				Maximum weekly benefit amount				N. Obs.
	mean	sd	min	max	mean	sd	min	max	
Alabama	26	0	26	26	217.22	39.69	150	265	27
Alaska	26	0	26	26	352.67	65.90	284	442	27
Arizona	26	0	26	26	215.83	25.69	170	240	27
Arkansas	25.33	1.62	20	26	357.50	81.65	225	454	27
California	26	0	26	26	350.74	107.06	210	450	27
Colorado	26	0	26	26	400.65	107.90	234	570.5	27
Connecticut	26	0	26	26	512.48	118.54	320	691	27
DC	25.93	0.38	24	26	341.07	28.19	293	425	27
Delaware	26	0	26	26	309.72	31.01	225	330	27
Florida	23.85	4.47	12	26	266.67	15.50	225	275	27
Georgia	23.93	4.22	14	26	278.43	55.93	185	330	27
Hawaii	25.89	0.58	23	26	438.54	97.79	275	592	27
Idaho	25.74	1.29	21	28	311.30	58.30	210.5	410	27
Illinois	25.78	0.42	25	26	443.39	106.81	270	613	27
Indiana	26	0	26	26	314.41	85.82	166	390	27
Iowa	26	0	26	26	381.30	99.52	233	553.5	27
Kansas	24.81	3.00	16	26	358.41	85.77	226.5	474	27
Kentucky	26	0	26	26	338.63	80.28	204	431.5	27
Louisiana	26	0	26	26	233.70	33.10	181	284	27
Maine	26	0	26	26	439.41	112.62	288	621	27
Maryland	26	0	26	26	323.13	81.79	219	430	27
Massachusetts	28.90	1.71	26	30	762.70	218.40	423	1103	27
Michigan	24.69	2.51	20	26	333.17	33.94	276	362	27
Minnesota	26	0	26	26	470.02	135.37	262.5	683	27
Mississippi	26	0	26	26	204.81	26.93	155	235	27
Missouri	24.52	2.58	20	26	254.56	59.96	170	320	27
Montana	27.09	1.00	26	28	334.91	103.16	197	514	27
Nebraska	26	0	26	26	267.39	81.76	144.5	400	27
Nevada	26	0	26	26	324.17	74.52	206.5	432.5	27
New Hampshire	26	0	26	26	336.54	94.26	173.5	427	27
New Jersey	26	0	26	26	489.00	120.10	291	677	27
New Mexico	26	0	26	26	336.09	116.74	177	503	27
New York	26	0	26	26	371.48	52.44	270	427.5	27
North Carolina	24	4.62	12	26	379.22	83.37	245	522	27
North Dakota	26	0	26	26	365.52	136.19	202	631.5	27
Ohio	26	0	26	26	437.96	97.53	291	592.5	27
Oklahoma	26	0	26	26	328.50	89.76	204.5	510	27
Oregon	26	0	26	26	416.57	102.31	253	597	27
Pennsylvania	26	0	26	26	466.74	100.69	299	581	27
Rhode Island	26	0	26	26	556.48	129.36	345	707	27
South Carolina	24.56	2.55	20	26	274.44	51.70	180.5	326	27
South Dakota	26	0	26	26	256.89	72.24	147	385	27
Tennessee	26	0	26	26	256.39	45.32	165	325	27
Texas	26	0	26	26	342.24	82.84	224	493	27
Utah	26	0	26	26	369.35	96.52	221	524	27
Vermont	26	0	26	26	337.76	95.65	187	462	27
Virginia	26	0	26	26	302.44	73.56	198	378	27
Washington	27.33	1.92	26	30	483.48	123.68	257	697	27
West Virginia	26	0	26	26	357.87	60.87	257	424	27
Wisconsin	26	0	26	26	319.30	47.41	225	370	27
Wyoming	26	0	26	26	335.28	102.42	200	490	27
Total	25.85	1.58	12	30	357.97	131.32	144.5	1103	1377

Summary statistics for UI. Data comes from [Farber et al. \(2015\)](#) and US Department of Labor.

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