Changing Bankruptcy Law: The Impact on Small-Business Entry and Exit Behavior

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ABSTRACT

The Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA) effected significant changes to consumer bankruptcy that had many unintended consequences for debtors, creditors, and consumers. Since small businesses are often unincorporated, and therefore the financial assets and debts of the company cannot be separated from the owner, bankruptcy serves as a crucial form of partial wealth protection for self-employed individuals and small-business owners. This study focuses on how BAPCPA affected small businesses' entry and exit rates. I find that BAPCPA decreased the entry rate of small businesses by approximately 4.91 percent and increased the exit rate by 2.74 percent. These effects vary substantially across industries and cannot be explained through differences in homestead-exemption levels among states.

Introduction

Small businesses are often overlooked when analyzing the effects of reforms to bankruptcy protection during initial policy analysis of bankruptcy-code reform. Approximately 11 percent of US households have at least one self-employed individual, and 17 percent of personal bankruptcy filings in the United States include some amount of business debt (White 2006; White 2011). Since most small businesses are unincorporated their owners are not financially separate entities from the business and bankruptcy often serves as a form of wealth protection in times of market uncertainty (Lawless 2007, Lawless 2019). In the wake of proposed bankruptcy-regulation overhaul, I explore how the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCPA) affected the entry and exit rates of small businesses. Understanding the responses of small businesses to BAPCPA will provide insight into the short-term effects on entrepreneurship of bankruptcy-code amendments.

To observe the relationship between BAPCPA and the entry and exit rates of small businesses, I compare the opening and closing rates of small and large businesses prior to the approval of BAPCPA and in the year following the implementation of BAPCPA using a difference-in-difference model. I further determine whether differing levels of personal homestead exemptions (low or high asset protections in the event of bankruptcy) across states are correlated with different response rates of opening and closing of businesses using a triple-difference model.

This paper contributes to the literature by analyzing the relationship between small-business ownership and bankruptcy-protection shocks. To my knowledge, individual entry and exit behavior in this context has not been previously addressed. My methodology allows for analysis at the individual industry level.

I find that BAPCPA decreased the percentage of small businesses entering the market relative to large businesses by between 4.91 and 5.11 percent. This relationship varies greatly by industry. BAPCPA also increased the exit rates of small businesses by approximately 2.15 to 2.74 percent relative to large businesses. This effect is highly persistent as its direction was the same across all industries and statistically significant for fifteen of the twenty industries examined. This study fails to find evidence that the policy change had different effects on small-business entry rates in states with low versus high personal homestead exemptions, though there were significant exit-rate differences. Exit rates varied greatly among industries when accounting for homestead-exemption levels.

This paper proceeds as follows: Section 2 provides an overview of the relevant literature. Section 3 details the data. Section 4 develops the empirical methodology and specifications. Section 5 presents the empirical results. Section 6 concludes and discusses policy recommendations.

Literature Review

The Bankruptcy Reform Act of 1978 was the first comprehensive federal reform of bankruptcy practices and provided a structure for multiple forms of debt forgiveness, individual readjustments, and liquidation practices. This reform sought to encourage greater use of Chapter 7 and Chapter 13 bankruptcy while also maintaining that individual states have the right to select their own personal-exemption levels (White 1998). Personal bankruptcy provides two essential types of wealth protection: first, it protects future assets through the discharge of debt obligations, and second, it protects current assets through personal exemptions (White 2001; Fan & White 2003; Primo & Green 2011). The bankruptcy code was subject to major changes in both 1994 and 2005 with the more recent amendment being titled the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005. The purpose of BAPCPA was to make filing under Chapter 7 bankruptcy more difficult in order to prevent bankruptcy abuse and fraud while simultaneously encouraging debtors to restructure rather than liquidate their debts (Bak et al. 2008; Howard 2005). The most notable BAPCPA changes included incorporating a

means test for income levels to determine whether Chapter 7 is the appropriate bankruptcy form, a mandatory waiting period between filings, credit-counseling and debtor-education requirements, and a system of checks and limits on offloaded assets in the months prior to filing (Eisler 2006; White 2007).

In the two months prior to BAPCPA's implementation, there were an unprecedented 550,000 bankruptcy filings, which quickly fell to record lows of roughly 20,000 filings in the six weeks after implementation, though the numbers varied greatly by region (Borgo 2019; Bak et al. 2008; Flynn & Crewson 2008). The years following implementation have seen an increase in the cost of consumer bankruptcy filings, an increase in the number of cases dismissed as abusive, and a decrease in legal practitioners focused on bankruptcy law (Spurr & Ball 2013; Eisler 2006). Total debt for the average filer has increased, as have reliance on credit cards (at the expense of credit users), divorce rates, prime- and subprime-mortgage default rates, foreclosure rates, and revolving debt per household even after accounting for the recent financial crisis; filers are still experiencing increased financial distress more than ten years after filing (Price & Dalton 2007; Simkovic 2009; Traczynski 2011; Li et al. 2011; White 2007; Mitman 2016; Han & Li 2011).

Self-employment and small-business ownership can be inherently risky. Small businesses have high failure rates, especially in recessions or periods of macroeconomic hardship, yet the effects of bankruptcy reform on entrepreneurship have not been investigated. US bankruptcy law attempts to make self-employment and entrepreneurship attractive for individuals by providing a form of partial wealth insurance in the event of a business failure. As noted, approximately 11 percent of US households have at least one self-employed worker and 17 percent of all personal bankruptcy filings in the United States include business debt, which suggests the importance of bankruptcy for small businesses (White 2006). Since most small businesses are unincorporated and therefore their owners are not financially separate entities from their businesses, Chapter 7 is the most commonly utilized form of bankruptcy by small-business owners, which means that access to credit is crucial and often

dependent on bankruptcy filing status (Fan & White 2003; Berkowitz & White 2004; Han & Li 2011; Agarwal et al. 2005).

Lawless (2007) ascertains that many of the statutes within did not consider business owners, which could disproportionately harm small businesses relative to large businesses since many small businesses are unincorporated and therefore their owners are faced with personal liability for business debts in the event of business failure. Small businesses are common in all industries, and they often have shorter life expectancies than their larger counterparts (Geroski 1995; Hopenhayn 1992). When Rohlin and Ross (2014) examined turnover rates of firms located near state borders, they found that entry decisions are also partially driven by differences in wealth protection and that increases in wealth protection, mainly through the homestead exemption, can increase both the entry of new firms and the longevity of existing firms.

The short-term effects of BAPCPA were highly unexpected. The period saw a rush to file for bankruptcy and widespread mortgage defaults, as real estate is the most commonly used collateral for small-business loans (Bak et al. 2008; Mitman 2016; Spurr & Ball 2013). Recently, federal consumer-bankruptcy restructuring has again become an important topic for legislatures as the needs of financially constrained consumers have changed; student-loan debts have reached historic levels, the legal fees for initially filing bankruptcy have become too expensive for many households, and crowdfunding personal and business ventures has become more commonplace. In 2019 the Commission on Consumer Bankruptcy of the American Banking Institute released a final report to Congress detailing recommendations regarding legal changes for the next amendment to the Bankruptcy Act (Lawless 2019). As these sweeping federal changes are being discussed, understanding the impact of previous bankruptcy reform can act as a guide for understanding the effect of small-business entry and exit rates.

Data

Business Data

I collected historical establishment data through ReferenceUSA, a popular sales-lead company that maintains a database of businesses on an annual basis. These data are available for purchase for individual researchers or university libraries. I track businesses prior to and after the implementation of BAPCPA in 2005 and match establishments across years by a unique identifier. Each year of data is matched to the previous and following years to identify business openings and closures. For example, in 2004 a business is considered to have closed if it existed in 2004 and was not recorded in 2005. Likewise, a business is considered to have opened if it was observed in 2004 but not in 2003.

These observations are aggregated at the state level, and the data include the total number of establishments, number of small businesses, number of large businesses, and number of openings and closings for each establishment type. Observation statistics for all of these measures are available in table 1. An establishment is considered a small business if it has fewer than twenty employees. Maps depicting the entry and exit rates of businesses before and after the implementation of BAPCPA are found in figures 1 and 2, respectively.

Table 1 - Number of Businesses Included in Data

	2004	**2006**
Total Businesses Opened	1,674,543	2,027,303
Total Businesses Closed	1,242,278	1,623,054
Total Businesses	12,501,470	13,208,761
Small Businesses Opened	1,535,747	1,811,272
Small Businesses Closed	1,148,387	1,497,438
Total Small Businesses	11,161,052	11,727,987
Large Businesses Opened	138,796	216,031
Large Businesses Closed	93,891	125,616
Total Large Businesses	1,340,418	1,480,774

Figure 1 - Business-Entry Rate by State in 2004 and 2006

2004   2006
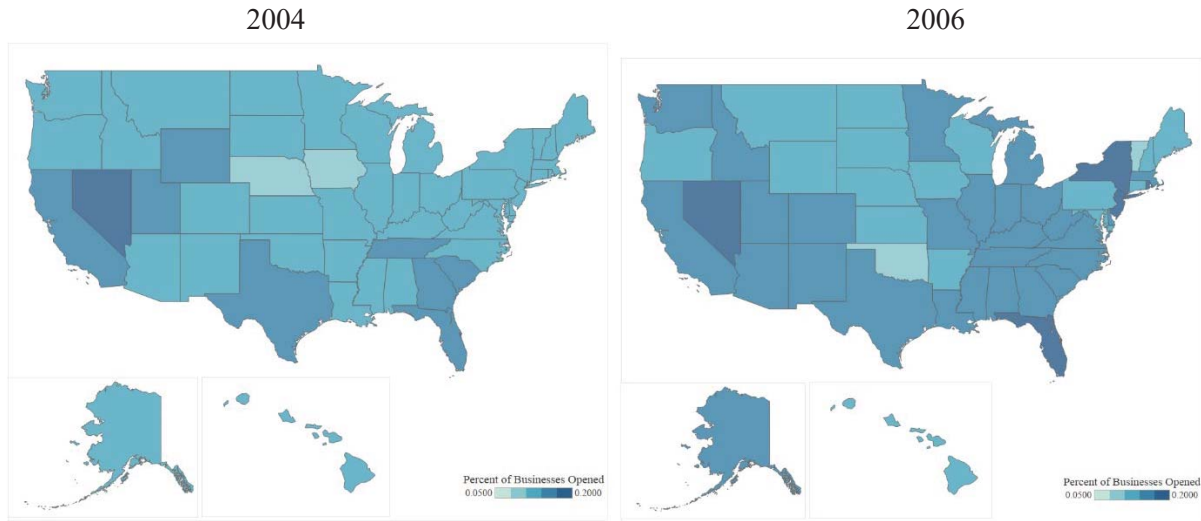
Figure 2 - Business-Exit Rate by State in 2004 and 2006

2004   2006
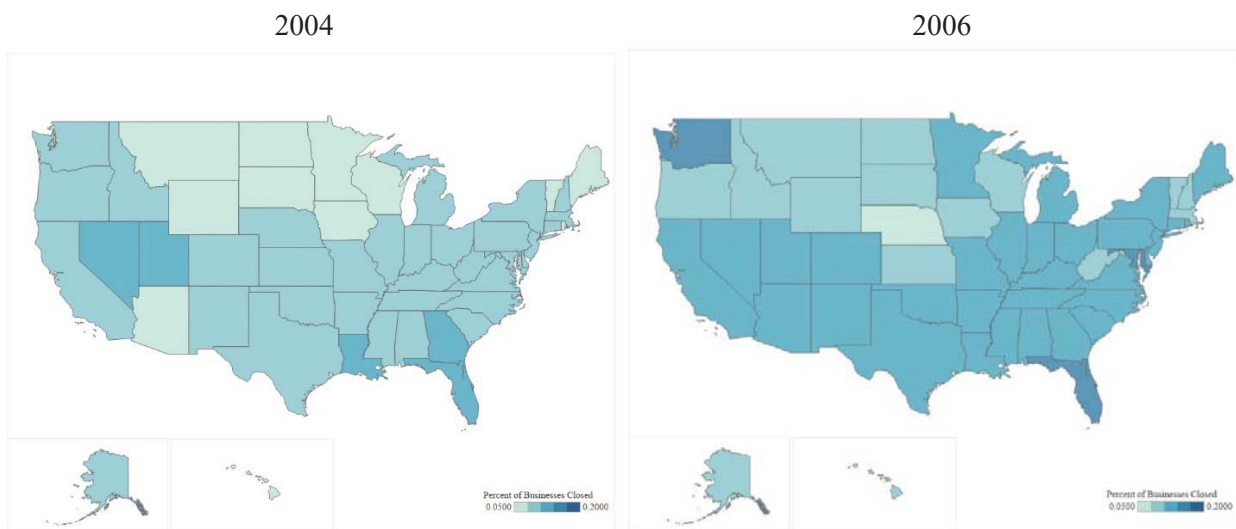
Homestead Exemptions

Small businesses are often unincorporated, in which case their assets cannot be separated from their owners. In the event of financial insolvency, business owners may declare Chapter 7 bankruptcy, which can lead to the liquidation of both business and personal assets if the business is unincorporated. The largest category of retained assets for individuals declaring Chapter 7 bankruptcy is called the personal homestead exemption. These exemptions, or the total value in assets a person can keep in the event of bankruptcy, differ widely across states. Some states are generous while other states allow people to retain few to no assets. I collected information on the consumer-bankruptcy environment for each state to determine whether that state has an above-average or below-average homestead-exemption level.

Homestead-exemption levels were recorded both before and after the implementation of BAPCPA. Table 2 contains the personal homestead-exemption level, by state, in 2004 and 2006. These data were first recorded by Rohlin and Ross (2014) and were confirmed by Elias et al. (2011). Since the marital status of the business owners is unknown, the recorded exemption levels are for married individuals under the age of sixty-five. In the empirical analysis, a state is considered to have a low exemption level if the amount of assets that can be retained in the event of bankruptcy is below $50,000.

Table 2 - State Homestead Exemption levels

State	2004 Homestead Exemption	2006 Homestead Exemption
Alabama	10,000	10,000
Alaska	54,800	67,500
Arizona	100,000	150,000
Arkansas	Unlimited	Unlimited
California	75,000	75,000
Colorado	90,000	90,000
Connecticut	150,000	150,000
Delaware	0	50,000
District of Columbia	Unlimited	Unlimited
Florida	Unlimited	Unlimited
Georgia	20,000	20,000
Hawaii	20,000	20,000
Idaho	50,000	50,000
Illinois	15,000	30,000
Indiana	15,000	30,000
Iowa	Unlimited	Unlimited
Kansas	Unlimited	Unlimited
Kentucky	10,000	10,000
Louisiana	25,000	25,000
Maine	70,000	70,000
Maryland	0	0
Massachusetts	300,000	500,000
Michigan	18,450	31,900
Minnesota	200,000	200,000
Mississippi	150,000	150,000
Missouri	15,000	15,000
Montana	200,000	100,000
Nebraska	12,500	12,500
Nevada	200,000	350,000
New Hampshire	200,000	200,000
New Jersey	18,450	18,450
New Mexico	60,000	60,000
New York	20,000	100,000
North Carolina	20,000	37,000
North Dakota	80,000	80,000
Ohio	10,000	10,000
Oklahoma	Unlimited	Unlimited
Oregon	33,000	39,600
Pennsylvania	18,450	18,450
Rhode Island	150,000	200,000
South Carolina	10,000	10,000
South Dakota	Unlimited	Unlimited
Tennessee	7,500	7,500
Texas	Unlimited	Unlimited
Utah	40,000	40,000
Vermont	150,000	150,000
Virginia	10,000	10,000
Washington	40,000	40,000
West Virginia	50,000	50,000
Wisconsin	40,000	40,000
Wyoming	20,000	20,000

Empirical Methodology

Small businesses are often unincorporated, meaning that the assets of the business and the business owner cannot be easily disentangled. Personal bankruptcy is a crucial form of wealth protection for entrepreneurs that influences many business decisions. Small businesses, which are inherently risky, rely on personal bankruptcy protection to protect their owners' assets. Since personal bankruptcy is only an option for unincorporated businesses, large businesses are relatively unaffected by changes in personal bankruptcy protection while small businesses may decide to change their entry or exit strategy.

To determine whether changes to BAPCPA disproportionately affected small businesses, I use a difference-in-difference model to compare small and large businesses before and after the policy implementation. I use this methodology to analyze both the entry and exit patterns. Because of the nature of the data and computational limitations, I cannot examine the data at the business level; therefore, I aggregate the entry and exit statistics at the state level. The model takes the following form:

$$Entry_{st} = \alpha_0 + \beta_1 Small_s + \beta_2 Post_t + \delta_1(Small*After_{st}) + \varepsilon_{st} \ (1)$$

$Entry_{st}$ is the percentage of businesses that entered the market in a given industry, state, and year. $Small_s$ is equal to 1 if the dependent variable concerns small businesses. $After_t$ is a binary variable equal to 1 if the observation is recorded after the policy change. $(Small*After)_{st}$ is a treatment variable equal to 1 if the observation concerns small businesses after the policy change. δ_1 is the coefficient of interest; it explains additional variation in the entry rates of small businesses after BAPCPA implementation that is not accounted for by the individual coefficient estimations. This specification is repeated for the exit rate of businesses, $Exit_{st}$.

The change in personal bankruptcy protection differed with the states' levels of homestead exemptions. The previous specification determines whether BAPCPA had an additional impact on small businesses relative to larger businesses. Given the structure of homestead-exemption levels, there may be additional variation between small businesses located in states with very generous asset protections and states without these protections. For example, a small-business owner in a state where she is able to retain $500,000 in assets in the event of bankruptcy might not change her entry and exit decisions with the implementation of BAPCPA in the same way as a small-business owner who can only retain $10,500 in the event of business failure.

To account for the concern that business owners' reactions to BAPCPA might differ based on the level of state exemptions, I use a triple-differencing method, which accounts for additional variation between low and high exemption-level states. Triple-differencing is commonly used to determine whether there is additional variation within subset groups, in this case within the group of small businesses (Banzhaf et al. 2019; St. Clair & Cook 2015). I repeat this analysis for both entry and exit decisions. The model takes the following form:

$$Entry_{st} = \alpha_0 + \beta_1 Small_s + \beta_2 After_t + \beta_3 Low_s + \delta_1(Small*After)_{st} + \delta_2(After*Low)_{st} +$$
$$\delta_3(Small*Low)_s + \lambda_1(Small*After*Low)_{st} + \varepsilon_{st} \,(2)$$

$Entry_{st}$ is the percentage of businesses that entered the market for each state and year. $Small_s$ is a binary variable equal to 1 if the dependent variable covers small businesses. $After_t$ is equal to 1 if the observation is recorded after the policy change. Low_s is equal to 1 if the observation comes from a low homestead-exemption state. $(Small*After)_{st}$ is a treatment variable equal to 1 if the observation covers small businesses after the policy change. $(After*Low)_{st}$ is a treatment variable equal to 1 if the dependent variable comes from a low-exemption state and is observed after the policy change.

(Small*Low)$_s$ is equal to 1 if the observation covers small businesses within a low-homestead-exemption state. λ_1 is the coefficient of interest in the triple-difference estimation; it estimates the variation in the entry or exit rates of small businesses after the policy change in low-exemption states that is not explained by the individual coefficient estimates. *(Small*After*Low)$_{st}$* is a treatment variable equal to 1 if the observation covers small businesses in low-exemption states after the policy change. The purpose of this variable is to understand whether small businesses in areas that did not allow the business owner to retain many assets in the event of business failure responded more to the implementation of BAPCPA relative to their peers. The specification is the same for exits with the appropriate outcome variable, *Exit$_{st}$*.

Finally, the analyses for equations (1) and (2) may both vary greatly by industry. A personal-bankruptcy-reform act might not affect, for example, businesses in the agricultural sector in the same way it affects the information sector. Since these sector differences may persist, I also conduct the difference-in-difference and triple-difference models for each major industry classification. The breakdown of industry subsectors by two-digit NAICS codes, which represent classifications of industry type, is given in table 3.

Table 3 - Major Industry Designations

2-Digit NAICS	Subsector
11	Agriculture, Forestry, Fishing and Hunting
21	Mining, Quarrying, and Oil and Gas Extraction
22	Utilities
23	Construction
31–33	Manufacturing
42	Wholesale Trade
44–45	Retail Trade
48–49	Transportation and Warehousing
51	Information
52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Food Services
81	Other Services (except Public Administration)
92	Public Administration

Empirical Results

Table 4 presents the difference-in-difference results. Specifications (1) and (2) analyze the rate of business entry. Specification (1) analyzes the overall state-level rate of entry while specification (2) includes controls for industry-specific trends. There is a persistent, statistically significant treatment effect of −0.0491. This means after the implementation of BAPCPA, small-business entry increased by an additional 4.91 percent after accounting for business size. Specifications (3) and (4) instead focus on the exit rate of businesses in the pre- and post-implementation period. As with the entry decision, specification (3) analyzes the overall state-level rate of exit while specification (4) includes industry-specific controls. I find a 2.74 percent increase in business exit for small businesses that is not accounted for by the individual coefficients. BAPCPA had a disproportionately large effect on small businesses, which are more likely than large businesses to be subject to personal bankruptcy in the event of failure. This bankruptcy reform overall led to both fewer small businesses entering the market and more small businesses deciding to close. With approximately twelve million small businesses in the United States at

the time of this policy change, a decrease in entry of 4.91 percent and an increase in exit of 2.74 percent are associated with hundreds of thousands of jobs and tax revenue.

Table 4 - Difference-in-Difference

	Entry		Exit	
	(1)	**(2)**	**(3)**	**(4)**
Small Business	0.7717***	0.7717***	0.7230***	0.7230***
	(0.0084)	(0.0085)	(0.0079)	(0.0080)
After Policy Change	0.0245***	0.0245***	-0.0137*	-0.0137*
	(0.0084)	(0.0084)	(0.0079)	(0.0080)
(Small*After)	-0.0491***	-0.0491***	0.0274**	0.0274**
	(0.0119)	(0.0120)	(0.0112)	(0.0112)
Industry FE	No	Yes	No	Yes
Adjusted R^2	0.755	0.753	0.773	0.771
Observations	5,090	5,090	5,086	5,086

Note: This table reports the estimated coefficients for the difference-in-difference analysis. The dependent variable for specifications (1) and (2) is the percentage of businesses entering the market within each state. Specification (2) includes industry fixed effects to account for potential differences in the entry rates of different industry types. The dependent variable of interest for specifications (3) and (4) is the percentage of businesses exiting the market within a given state. Specification (4) includes industry fixed effects.

Table 5 - Difference-in-Difference by Industry

	Entry			Exit		
Industry	**Small Business**	**After Policy Change**	**(After*Small)**	**Small Business**	**After Policy Change**	**(After*Small)**
11	+***	− ***	+ ***	+***	−	+*
21	+***	+	−	+***	−*	+**
22	+***	− *	+ **	+***	−**	+***
23	+***	−	+***	+***	−***	+***
31–33	+***	+***	−***	+***	−***	+***
42	+***	+*	−***	+***	−***	+***
44–45	+***	+***	−***	+***	+	−
48–49	+***	−***	+***	+***	−***	+***
51	+***	−	+*	+***	−	+
52	+***	+***	−***	+***	−***	+***
53	+***	+	−	+***	−	+
54	+***	+***	−***	+***	−**	+***
55	+***	+***	−***	+***	−**	+***
56	+***	−	+	+***	−***	+***
61	+***	+***	−***	+***	+***	−***
62	+***	−**	+***	+***	+	−
71	+***	−*	+***	+***	−	+
72	+***	−	+	+***	−***	+***
81	+***	+	−*	+***	−**	+***
92	−***	+***	−***	−***	−***	+***

Note: Each row contains the direction and significance of the coefficient estimates for the difference-in-difference methodology for each industry. Industry NAICS codes are defined in table 3.

The effect of BAPCPA on entry and exit does differ across industries. Table 6 contains the significance and direction of the coefficient estimates on business entry and exit. Segmenting the results by industry allows us to visualize the heterogeneity of bankruptcy policy effects across business sizes. I find that the estimate of the treatment effect varies greatly across industries and does not maintain a cohesive pattern in the direction of the treatment effect for the percentage of small businesses entering the market in the post-implementation period. Seven industries saw an increase in the entry of small businesses in the post-implementation period while nine industries saw decreases.

Table 6 - Triple-Difference

	Entry		Exit	
	(1)	**(2)**	**(3)**	**(4)**
Small Business	0.7758***	0.7758***	0.7348***	0.7348***
	(0.0121)	(0.0121)	(0.0113)	(0.0114)
After Policy Change	0.0256**	0.0256**	-0.0107	-0.0170
	(0.0121)	(0.0121)	(0.0113)	(0.0114)
Low Exemption	0.0040	0.0040	0.0115	0.0115
State	(0.0119)	(0.0320)	(0.0112)	(0.0301)
(Small*After)	-0.0511***	-0.0511***	0.0215	0.0215
	(0.0171)	(0.0171)	(0.0161)	(0.0161)
(Small*Low)	-0.0079	-0.0079	-0.0231	-0.0231
	(0.0169)	(0.0170)	(0.0158)	(0.0159)
(After*Low)	-0.0002	-0.0020	-0.0058	-0.0058
	(0.0169)	(0.0170)	(0.0159)	(0.0159)
(Small*After*Low)	0.0041	0.0041	0.0116	0.0116
	(0.0239)	(0.0240)	(0.0225)	(0.0226)
Industry FE	No	Yes	No	Yes
Adjusted R^2	0.755	0.753	0.773	0.770
Observations	5,090	5,090	5,086	5,086

Note: This table reports the estimated coefficient for the triple-difference analysis. The dependent variable for specifications (1) and (2) is the percentage of businesses entering the market within each state. Specification (2) includes industry fixed effects to account for potential differences in the entry rates of different industry types. The dependent variable of interest for specifications (3) and (4) is the percentage of businesses exiting the market within a given state. Specification (4) includes industry fixed effects.

The market-exit results in table 6 are much less ambiguous in their direction. Nearly every industry saw a significant increase in exit among small businesses in the post-BAPCPA period that is not accounted for through individual estimations. Notable exceptions to this pattern are the five industries with insignificant treatment effects and a significant decrease in exit rates of businesses in the educational-services sector in the post-implementation period. These industry results highlight the importance of analyzing industry effects before making policy prescriptions concerning bankruptcy.

Personal homestead exemptions are determined at the state level and vary from $0.00 to unlimited asset protection. Since these exemptions are only used in the case of personal bankruptcy and the assets of the business and business owner cannot be disentangled, only businesses that are unincorporated are subject to these limitations. This difference across states may affect the responsiveness of small-business owners to bankruptcy-law changes. Table 6 uses a triple-difference model to incorporate the variable of whether a state maintains high or low homestead-exemption levels to determine whether BAPCPA had any additional effects on small businesses located in states with low asset protection in the event of bankruptcy, relative to their peers.

The dependent variable for specifications (1) and (2) in table 6 is business entry rates, with specification (2) containing additional industry-level fixed effects. Specifications (3) and (4) likewise estimate the effects on business exit rates. I do not find evidence that small businesses located in a low-exemption state behaved any differently in their market entry or exit decisions after implementation than businesses residing in high-asset-protection states. Similar to earlier models, I find a significant decrease of 5.11 percent in small-business entry in the post-implementation period relative to large businesses. Small-business exit also decreases 2.15 percent in the post-implementation period, though this effect is no longer statistically significant after accounting for homestead-exemption levels.

When the data are segmented by industry (table 7), I find no evidence of a statistically significant difference between low- and high-exemption states in their entry rates after policy implementation that is not explained by the individual treatment effects. Though these results are not significant, they are positive in fifteen out of twenty industries. In the same fifteen industries there is a positive, yet insignificant, interaction of entry rates in low-exemption states in the post-implementation period. These two results indicate that low-exemption states may have greater business entry in the post-implementation period compared to high-exemption states but that the differences by business size are ambiguous in direction.

Table 7 - Triple-Difference by Industry: Entry

Industry	After Policy	Small Business	Low Exemption	(After* Small)	(After* Low)	(Small* Low)	(Small* After*Low)
11	−***	+***	−	+***	+	+	−
21	+	+***	−	−	−	+	+
22	−	+***	+	+	−	−	+
23	−**	+***	+	+***	+	−	−
31–33	+***	+***	+***	−***	−	−***	+
42	+	+***	+	−**	+	−*	−
44–45	+***	+***	+	−***	+	−	−
48–49	−***	+***	+	+***	+	−	−
51	−	+***	−	+*	+	+*	−
52	+**	+***	−	−***	+	+	−
53	+	+***	+	−	+	−	−
54	+***	+***	+	−***	−	−	+
55	+***	+***	+	−***	−	−	+
56	−	+***	−	+	+	+	−
61	+***	+***	−	−***	+	+	−
62	−	+***	−	+**	+	+	−
71	−*	+***	−	+**	+	+	−
72	−	+***	−	+*	+	+	−
81	+	+***	−	−	+	+	−
92	+***	+**	−	−***	+	+	−

Note: Each row contains the direction and significance of the coefficient estimates for the triple-difference for each industry. The dependent variable is the percentage of business entry within each state. Industry NAICS codes are defined in table 3.

However, there are mixed directional effects of BAPCPA on the exit rates of businesses in some industries (table 8). There are positive and significant interactions in the information sector and positive and insignificant estimates for thirteen of the nineteen remaining industries. These results imply an increased percentage of small-business exits within low-exemption states in the post-implementation period. Three industries have significant negative effects, and three have insignificant negative effects. Even after accounting for differences in the exemption levels across states, there is a generally positive and significant treatment effect of BAPCPA on small businesses in most industries.

Table 8 - Triple-Difference by Industry: Exit

Industry	After Policy	Small Business	Low Exemption	(After* Small)	(After* Low)	(Small* Low)	(Small* After*Low)
11	−**	+***	−	+***	+**	+**	−***
21	−	+***	+**	+	−	−***	+
22	−	+***	+	+	−	−*	+
23	−***	+***	+	+***	−	−	+
31–33	−***	+***	+***	+***	−	−***	+
42	−***	+***	+*	+***	−	−***	+
44–45	+	+***	+	−	−	−**	+
48–49	−	+***	+**	+**	−	−***	+
51	+	+***	−	−	−	+	+*
52	−**	+***	+	+***	+	−	−
53	−	+***	+	+	−	−	+
54	−	+***	+	+	−	−*	+
55	−	+***	−	+**	+	+	−
56	−**	+***	−	+***	+	+	−
61	+**	+***	+	−***	−	−	+
62	+	+***	+	−*	−	−	+
71	−*	+***	−	+**	+	+	−*
72	−**	+***	+**	+***	−	−**	+
81	−**	+***	−	+***	+	+*	−*
92	−**	−***	+***	+	−	−	+

Note: Each row contains the direction and significance of the coefficient estimates for the triple-difference for each industry. The dependent variable is the percentage of business exit within each state. Industry NAICS codes are defined in table 3.

Conclusion and Discussion

The purpose of this study is to determine whether BAPCPA disproportionately affected the entry and exit rates of small businesses. I find that small businesses saw an additional reduction in their entry rates by 4.91 percent after the policy change. This effect is ambiguous at the industry level, as individual industries vary substantially in the percentage of small businesses entering the market in the post-implementation period. Though the industry-level effects on entry are ambiguous, the relationship between BAPCPA and small-business exit patterns is more clear. BAPCPA increased the percentage of small businesses exiting the market by an additional 2.74 percent. At the industry level, fifteen of the twenty major industries show evidence of a similar increase in the exit rate of small businesses.

To address concerns that there may be inherent differences within small businesses, I determine whether BAPCPA had any additional effects on small businesses located in states with low asset protection in the event of bankruptcy relative to states with generous asset protection. I fail to find significant evidence that the entry rates of small businesses in the post-implementation period differed substantially between states with different levels of homestead exemptions. For the exit decisions, I find evidence of a negative and statistically significant effect of low homestead exemptions interacting with the general treatment effect of the policy, which shows that the exit rate is smaller within states with limited asset protection.

These results have important implications for future policy. They show that changes in consumer bankruptcy can affect the business decisions of small, often unincorporated, businesses. In designing future bankruptcy reform, policy makers should address the effect on entrepreneurship and business ownership and help to develop transitional programs or protections. Also, the implementation of future bankruptcy reform should be spread over a longer period. BAPCPA was unexpected and acted as a shock for small-business owners. A longer implementation period would give them more options to adjust to these policy changes.

This study is subject to various limitations. First, though this novel dataset is robust, publicly available data are not able to identify the incorporation status or self-employment status of each business, only whether the business is public, private, or a branch location. These data are also unable to capture whether a business owner has filed for bankruptcy or is financially insolvent. Future research would benefit from individual and business tax records to get a more accurate perspective on the financial health of entering or exiting businesses. This project is also currently restricted by limits in computational resources for using individual-business-level data across time; instead the data had to be aggregated to the state level, causing it to lose much of the empirical rigor that would be available with specific business attributes.

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