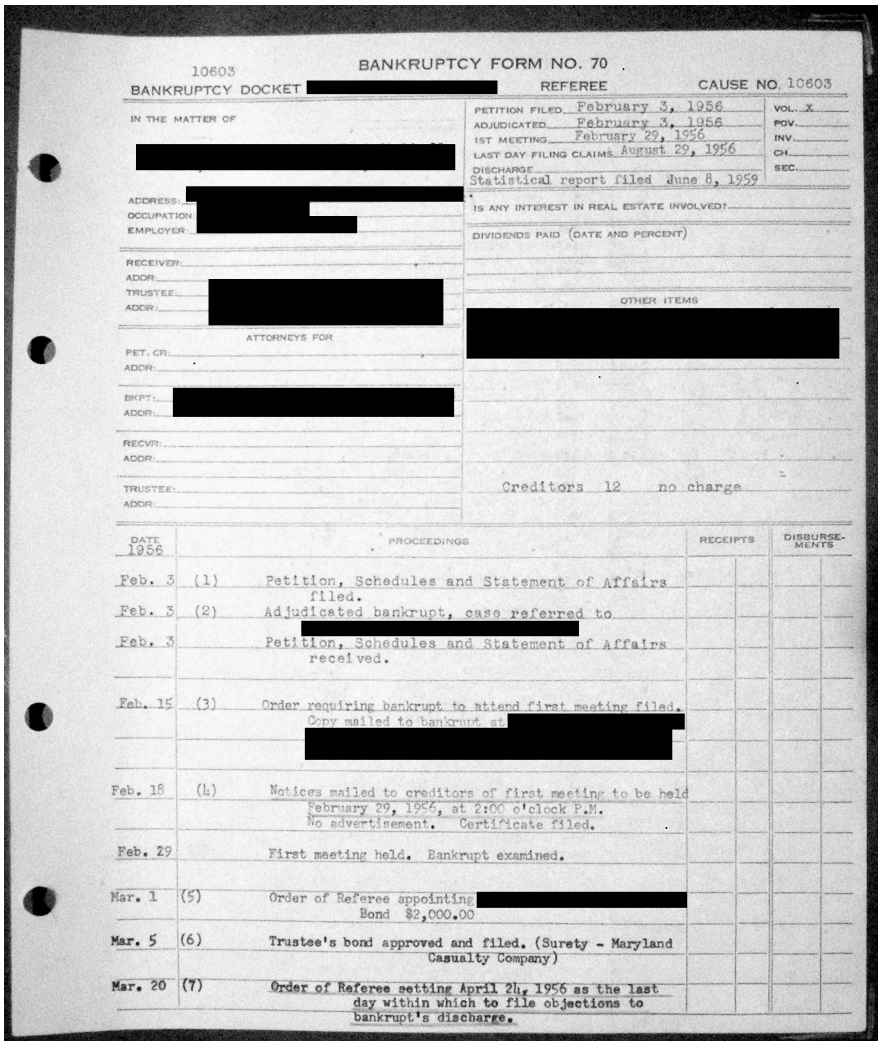
Online Appendices

Appendix A summarizes collection and processing of the data from the bankruptcy dockets, including geocoding. Appendix B provides supplementary information about the variables constructed from the docket sheet data and other sources. Appendix C shows robustness checks.

A Bankruptcy Docket Data

We photographed all docket sheets for bankruptcy cases filed in Maryland at the National Archives in Philadelphia. There are 6192 cases, including both business and personal bankruptcies. Figure A1 shows a sample docket sheet.



10603

BANKRUPTCY FORM NO. 70

BANKRUPTCY DOCKET [redacted] REFEREE CAUSE NO. 10603

IN THE MATTER OF [redacted]

ADDRESS: [redacted]
OCCUPATION
EMPLOYER [redacted]

RECEIVER:
ADDR:
TRUSTEE:
ADDR: [redacted]

ATTORNEYS FOR
PET. CR:
ADDR:
BKPT: [redacted]
ADDR:
RECVR:
ADDR:
TRUSTEE:
ADDR:

PETITION FILED February 3, 1956
ADJUDICATED February 3, 1956
1ST MEETING February 29, 1956
LAST DAY FILING CLAIMS August 29, 1956
DISCHARGE
Statistical report filed June 8, 1959

VOL. X
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SEC.

IS ANY INTEREST IN REAL ESTATE INVOLVED?

DIVIDENDS PAID (DATE AND PERCENT)

OTHER ITEMS [redacted]

Creditors 12 no charge

DATE 1956		PROCEEDINGS	RECEIPTS	DISBURSEMENTS
Feb. 3	(1)	Petition, Schedules and Statement of Affairs filed.		
Feb. 3	(2)	Adjudicated bankrupt, case referred to [redacted]		
Feb. 3		Petition, Schedules and Statement of Affairs received.		
Feb. 15	(3)	Order requiring bankrupt to attend first meeting filed. Copy mailed to bankrupt at [redacted]		
Feb. 18	(4)	Notices mailed to creditors of first meeting to be held February 29, 1956, at 2:00 o'clock P.M. No advertisement. Certificate filed.		
Feb. 29		First meeting held. Bankrupt examined.		
Mar. 1	(5)	Order of Referee appointing [redacted] Bond $2,000.00		
Mar. 5	(6)	Trustee's bond approved and filed. (Surety - Maryland Casualty Company)		
Mar. 20	(7)	Order of Referee setting April 24, 1956 as the last day within which to file objections to bankrupt's discharge.		

Figure A1: Example docket sheet. *Source:* Maryland bankruptcy dockets.

Missing Cases Cases were numbered sequentially. Only 16 docket sheets are missing. Missing dockets are distributed across years, as shown in Table A1.

Table A1: Number of missing personal bankruptcy cases by year among the 1949-1973 Maryland dockets.

Year	Number Missing
1966	1
1969	2
1970	2
1971	3
1972	2
1973	5

Missing Dates There are 125 docket sheets with a missing or illegible filing date. Because case number is assigned in order of filing date, we approximate the filing date for these cases by assigning it the filing date of the case number preceding it.

Separating Personal from Business Bankruptcies Spillovers likely operate differently for business and personal bankruptcy. Business bankruptcies are identified by a list of 188 key words and their permutations in the debtor name. Key words include both general terms such as "Inc", "Corporation", and "Limited" and industry-specific words like "Grocery", "Merchant" and "Agency". 1375 cases are business cases.

Identification of Joint Filers Spillovers operate on the household level. Until fiscal year 1979, spouses filed for bankruptcy separately and the court usually consolidated the cases. We identify spouses as filers who share the same last name and whose petitions were filed within a week of each other. We identify 1005 couples (2010 filers) filing for personal bankruptcy.

Sometimes spouses list identical debts and numbers of creditors. For these, we simply drop the second case filed. For spouses who list different debts and numbers of creditors, we assign the higher value to the household.

Geocoding The docket sheets include information on the filer's residence down to the house and street number. To maximize the accuracy and level of geographic detail in the geocoding, the addresses should include all fields necessary to identify a house (house number, street name, city, state, zip code and county). Not all filer addresses contain each field. We use the following procedures to clean addresses:

- Missing city information (161 filers). We search these street addresses in Google Maps and add city where there is a clear match (taking into account any given county and zip code information). All observations are recovered.

- Zip codes not currently in Maryland (89 filers). These are zip codes that were located in Maryland at the time of filing but now are located in another state (mainly the District of Columbia and some in West Virginia and Delaware). We geocode them based only on street address, city and county. All observations are recovered.

- Missing street address (house number and street name) (153 filers). We search for these filers in Ancestry.com based on their name, birth date (within 20-50 years prior to filing date), and any other address information (such as city or county). Ancestry provides access to historical censuses that list households and their full addresses. We recovered street addresses for 87 filers.

- Historical addresses that do not match a contemporary one (48 filers). One problem with currently commercially available geocoding services is that they reference contemporary addresses. If there is an historical address that does not match to a contemporary one, we hand check to find an approximate match. For example, "Bainbridge Village" matches to the contemporary city "Bainbridge, MD." We recovered addresses for 10 filers.

- Residing outside of Maryland (53 filers). Because we study filers who live in Maryland, we drop these filers.

- Missing all address fields (25 filers). We drop these filers.

After cleaning, we matched addresses to geographic coordinates using the service available in ArcGIS's ArcMap; see ArcGIS's manual. ArcMap assigns a "match score" to each candidate location based on the number of characters matched to the input address. It selects the location with the highest match score as the best match. ArcGIS tries to match the address to the finest level of geographic detail but will default to higher levels if there is a higher match score. For example, an address may not be matched to a street address, but it may be matched to a city. This typically occurs under several scenarios: 1) The street

address is not given; 2) The street name is obsolete but the city name is not; or 3) A route or P.O. box is given for the street address. If an address fails to meet a minimum match score at any location, it is not matched.

The levels of geographic detail in ArcGIS matches are listed in Table A2. A locality is a local residential settlement, such as a city or neighborhood. A "subadmin" is similar to a locality, but typically represents a larger region, such as a county. A point of interest can be civic places such as fire stations, parks, or even town names if the town is small or unincorporated. A point address is a precise location of a roof-top address, while a street address is interpolated along a street given the house number. A postal address is a zip code. A street intersection matches an address to the intersection of two streets, and a street name match traces the address to the street only.

Table A2: Levels of geocoding match for the home addresses of personal bankruptcy filers in the bankruptcy docket data.

Address Type	Example	Frequency
Locality	Gaithersburg, Maryland	387
Point of Interest	Gilmore, Maryland, United States	1
Point Address	8316 20th Ave, Hyattsville, Maryland, 20783	1381
Postal	21502, Cumberland, Maryland	0
Street Address	212 Gorman Ave, Laurel, Maryland, 20707	894
Street Intersection	Washington Blvd and Guilford Rd, Jessup, Maryland, 20794	1
Street Name	Tipton Dr, Camp Springs, Maryland, 20748	365
SubAdmin	Wheaton, Maryland	584
Total		3613

2641 out of 3613 personal bankruptcies (73.1%) match to a street or point address, street intersection or street name. The remaining addresses match to a higher level aggregation like a town or city (locality, point of interest, postal, or subadmin). We assign these higher level matches to the corresponding centroid of the address. These higher level matches do not appear to have any year or place biases. The 972 higher level matches for personal bankruptcies are spread across 271 places in Maryland, with Baltimore receiving the largest number (97). Higher level matches are between 18-52% of bankruptcies in each year (com-

prising 20-30% of most years). Just 121 filers could not be matched to a location within Maryland.

A total of 199 filers are dropped because they could not be point-coded. Most of the dropped observations are for cases filed before 1953, when few cases were filed at all. Our results are the same when years prior to 1953 are excluded. See Table C3.

Summary Table A3 summarizes the dataset after cleaning and geocoding. The final dataset includes 3613 unique personal bankruptcy filers.

Table A3: There are 6192 filers. 3613 personal bankruptcy filers remain after removing business filers, joint filers, out of state filers, filers with no address, and those with no geocoding match.

Total docket sheets (1949-1973)	6192
Business filers	- 1375
Joint filers	-1005
Non-Maryland filers	-53
No address given	-25
No geocoding match	-121
Final observations	**3613**

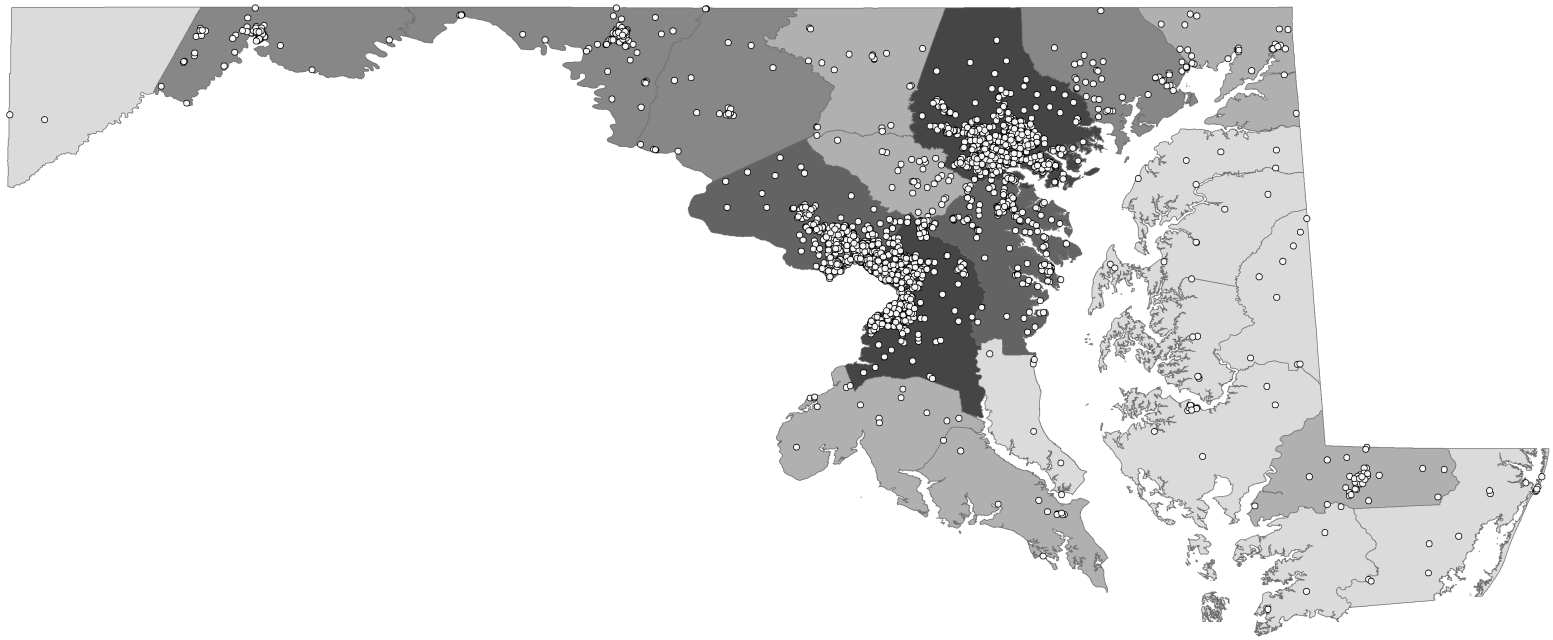

Figure A2: Locations of households that filed for personal bankruptcy from 1949 to 1973 in Maryland. Background shading shows the number of housing units in the county; darker shading indicates more houses. See Figures A3 and A4 for detail of Baltimore and DC suburbs. *Source:* Maryland bankruptcy dockets.

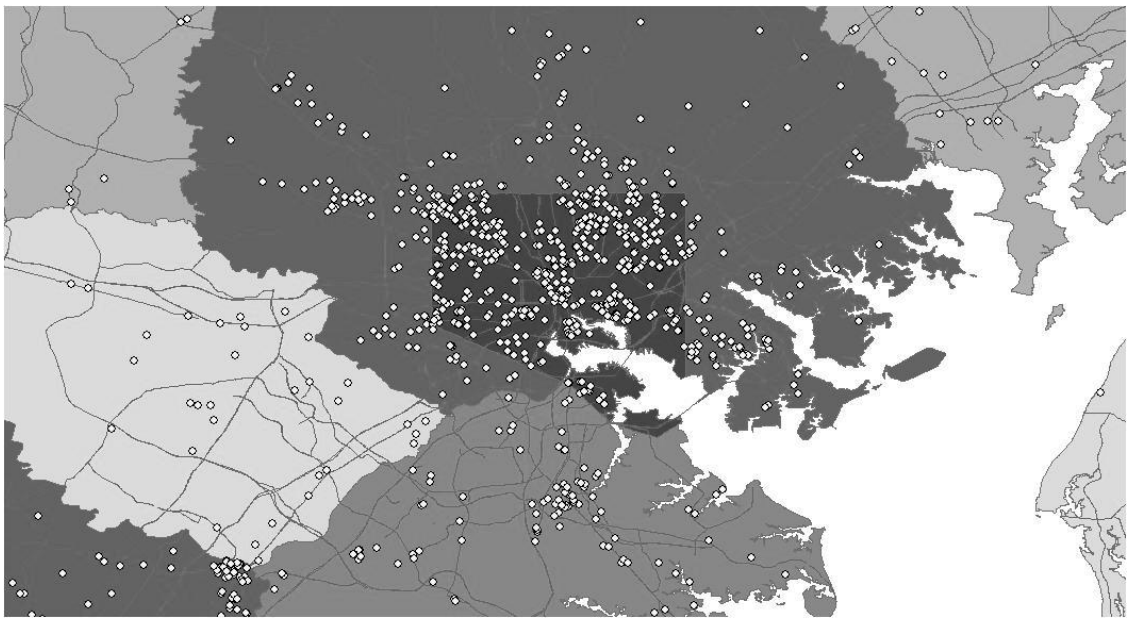

Figure A3: Personal bankruptcy filers during 1949-1973 around the Baltimore area. (Zoomed-in map of Figure A2). *Source:* Maryland bankruptcy dockets.

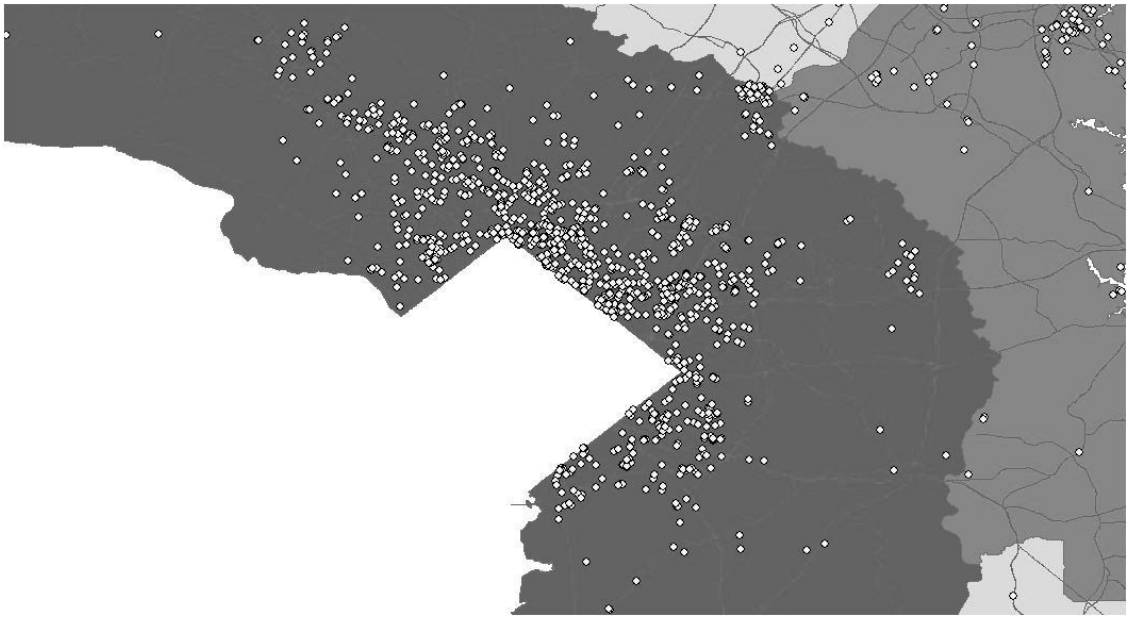

Figure A4: Personal bankruptcy filers during 1949-1973 around the District of Columbia area. (Zoomed-in map of Figure A2). *Source:* Maryland bankruptcy dockets.

Construction of Attorney Addresses We geocode attorney addresses for the 3,613 personal bankruptcy filers. We took the following steps to clean addresses:

- Historical address (32 attorneys). Street address is listed as a historical building (mostly in Baltimore) that has been renamed. We search for these online and found the contemporary addresses for these buildings. All were recovered.

- Missing city information (24 attorneys). Some attorneys have a street address listed but no city. We search the street address in Google Maps and the Maryland Attorney Listing to find the corresponding city. 21 were recovered.

- "In proper person" (101 attorneys) or no attorney name (1). The docket sheets of filers who represent themselves generally have "In proper person" where the attorney's name usually appears. We assume the filer with no attorney listed represented himself. We drop these observations from the analysis of attorney sharing.

142 filers have no attorney or are missing address information needed for geocoding. Table A4 summarizes levels of geographic detail in ArcGIS matches. 1833 out of 3473 records (52.8%) were matched to a street or point address, street intersection or street name. The rest were matched to a higher aggregation such as locality or postal code.

Table A4: Levels of geocoding match for the office addresses of attorneys in the bankruptcy docket data.

Address Type	Frequency
Locality	1,327
Point Address	1,198
Postal	313
Street Address	413
Street Intersection	122
Street Name	100
Total	3,473

Some attorneys represented multiple clients and some filers had multiple attorneys. There are 1253 unique attorneys. Most attorneys (1247 out of 1253) have more than one address listed during their tenure in our bankruptcy data. We assign the attorney to the midpoint of line segment connecting the coordinates of each address.

B Supplemental Information about Variables

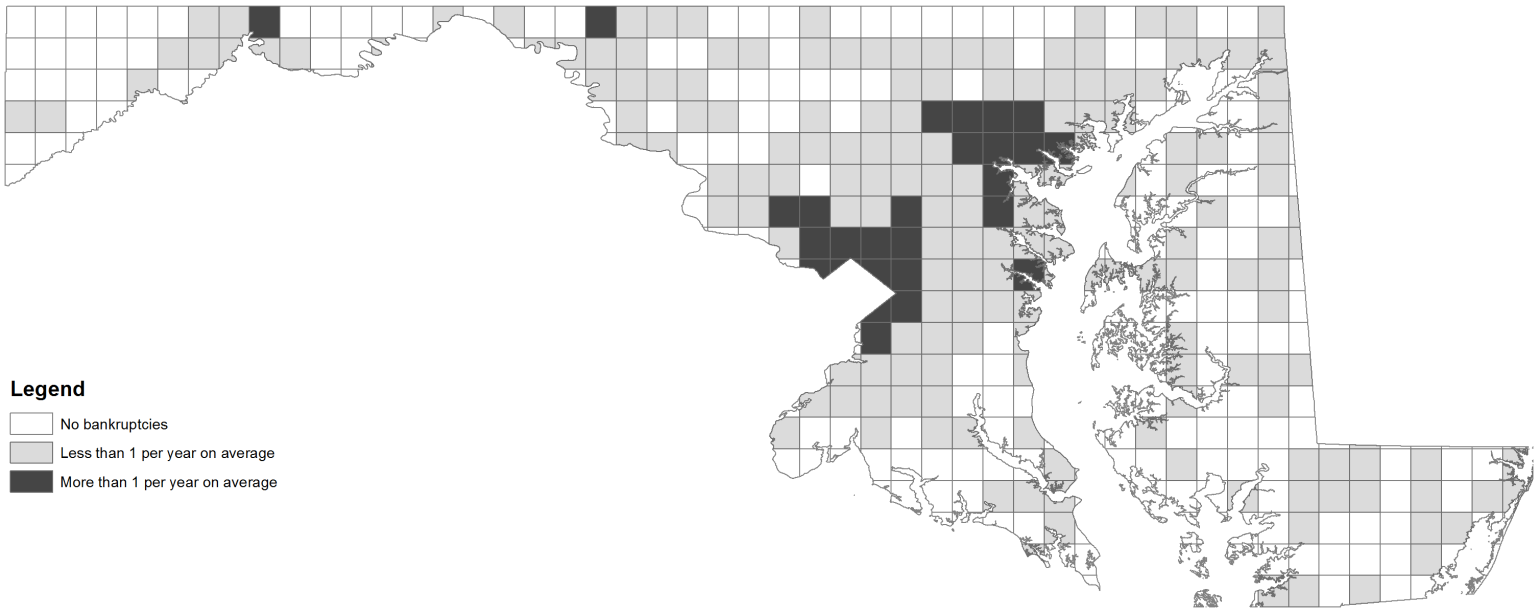

Figure B1: Total number of personal bankruptcies in each 25 square mile neighborhood from 1949-1973. *Source:* Maryland bankruptcy dockets.

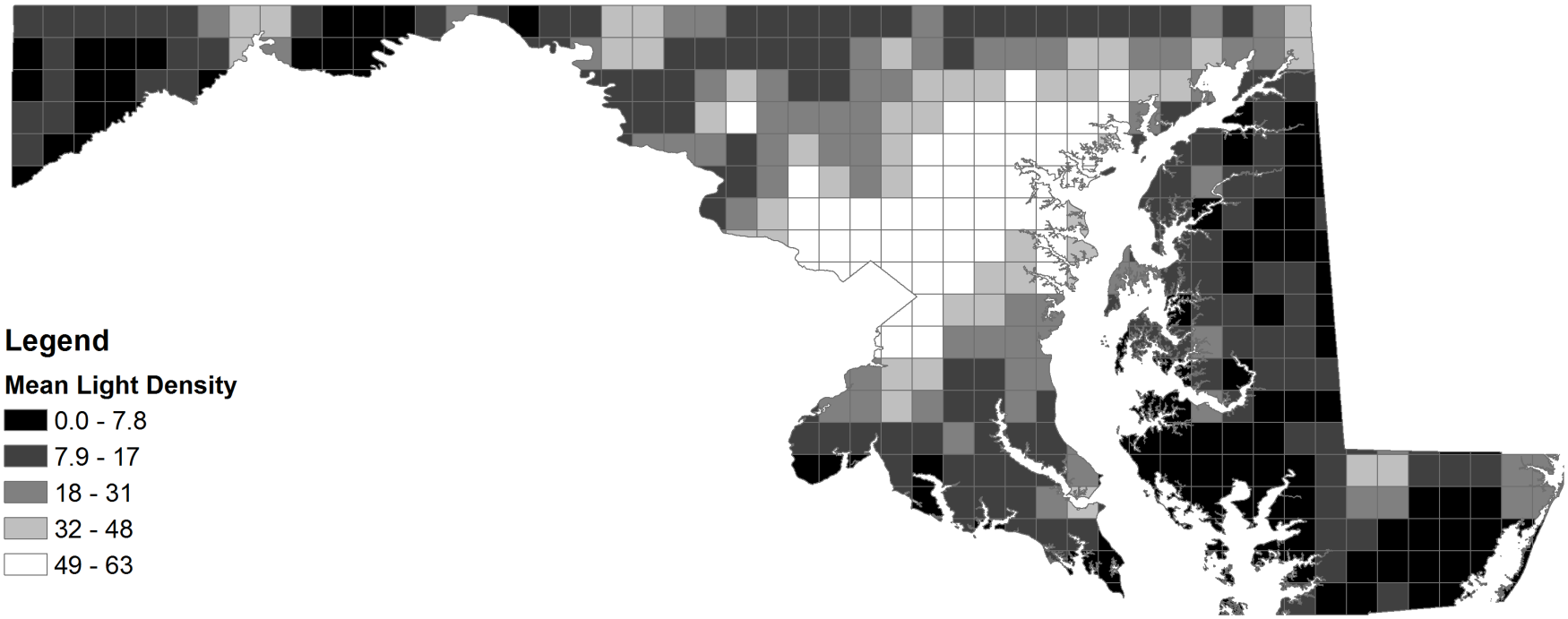

Figure B2: Nighttime light density averaged by neighborhood. Lower values indicate darker places. We assume a neighborhood is uninhabited if it has zero bankruptcies and has a light density below the mean of zero-bankruptcy neighborhoods. *Source:* NOAA (1992).

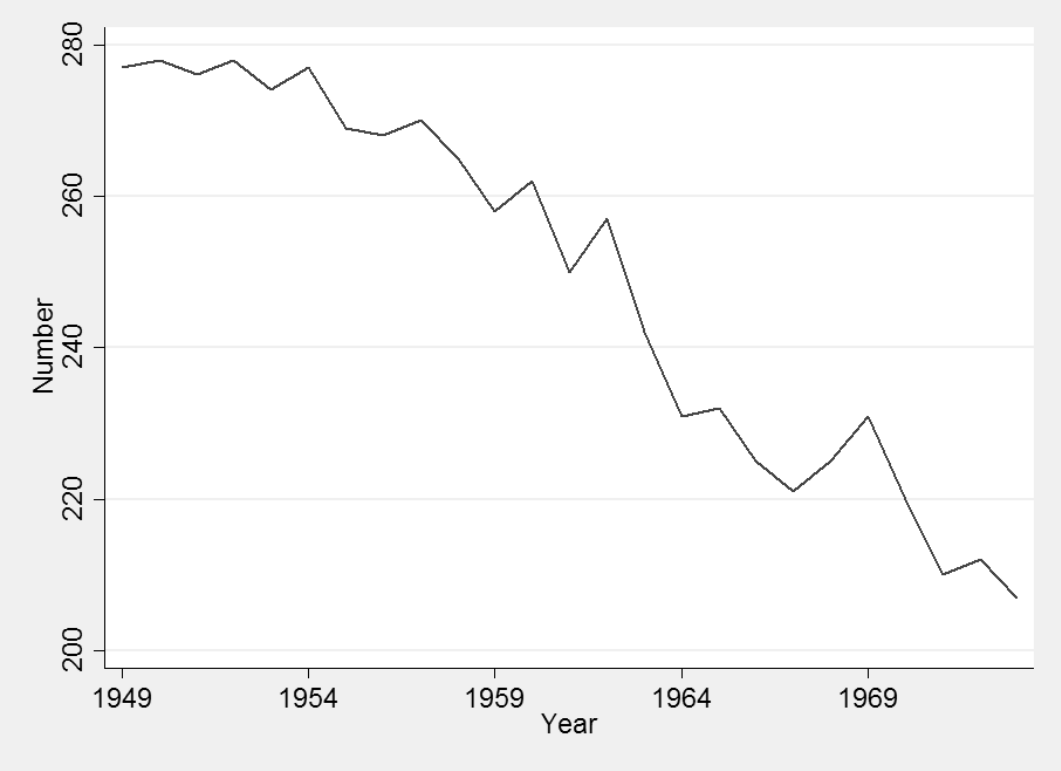

Figure B3: Number of neighborhoods with zero bankruptcies, by year. *Source:* Maryland bankruptcy dockets.

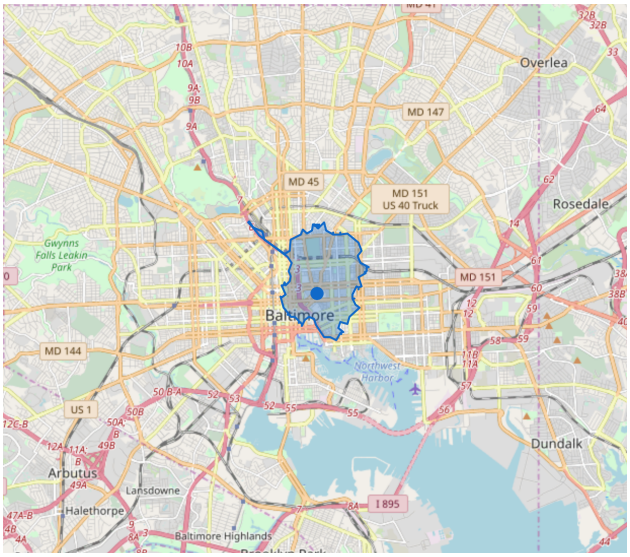

Figure B4: Isochrone map of five minute driving distance in Baltimore, using contemporary roads.

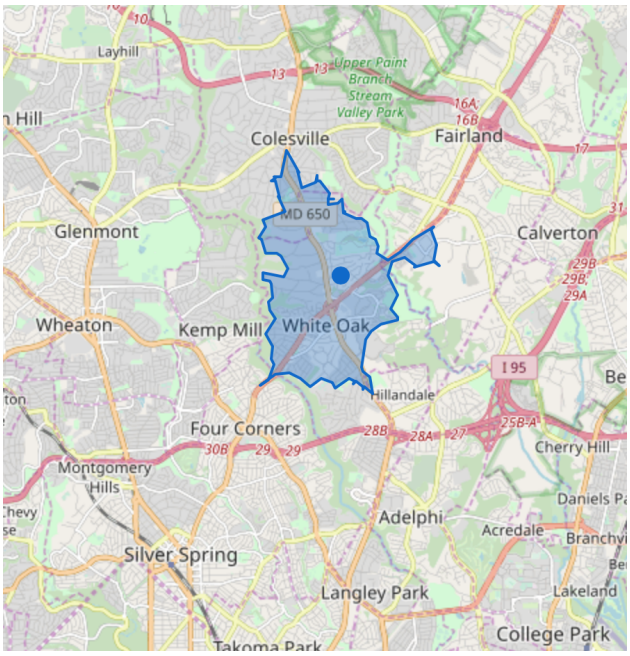

Figure B5: Isochrone map of five minute driving distance in White Oak, using contemporary roads.

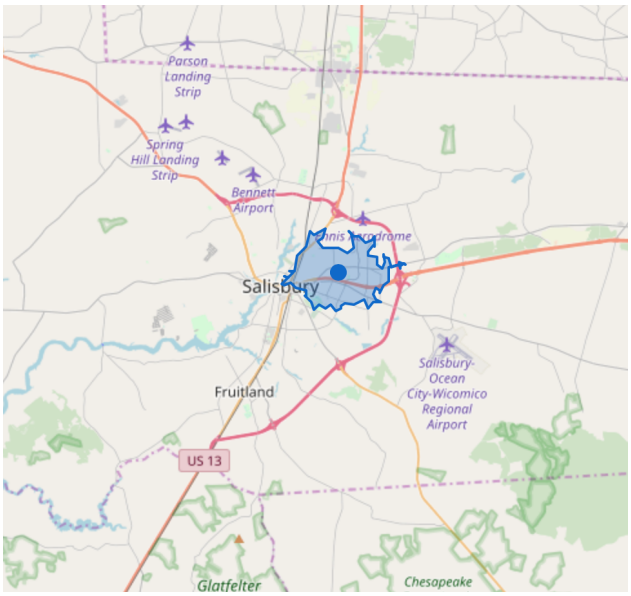

Figure B6: Isochrone map of five minute driving distance in Salisbury, using contemporary roads.

Table B1: Mean of county-year and neighborhood-year variables, by number of bankruptcies.

	Some Bankruptcies Mean	No Bankruptcies Mean	All Obs. Mean
County Level			
Bankruptcies	10.21	0.00	6.02
Number of Housing Units ($10,000s)	5.74	0.88	3.75
Number of FDIC-Insured Banks	18.12	5.19	12.82
Median County Income ($1,000s)	34.95	24.58	30.70
Males per 100 Females	98.72	101.81	99.99
Median Total Debts ($1,000s)	10.58	0.00	6.24
Median Total Creditors	21.10	0.00	12.45
Observations	354	246	600
Neighborhood Level			
Personal Bankruptcies	3.40	0.00	0.49
Number of Housing Units ($1,000s)	9.54	1.98	3.08
Number of FDIC-Insured Banks	3.76	0.53	1.00
Median Neighborhood Income ($1,000s)	40.08	32.39	33.51
Males per 100 Females	97.92	100.54	100.16
Median Total Debts ($10,000s)	1.64	0.00	0.24
Median Total Creditors	22.10	0.00	3.22
Observations	1060	6215	7275

Neighborhoods are defined as 5 square miles using a fishnet. Income and debts are deflated to 1973 price levels.
Source: Bankruptcy dockets for Maryland and Minnesota Population Center (2011)

Table B2: Mean of filer pair variables, by attorney sharing.

	Does Not Share Mean	Shares Attorney Mean	All Pairs Mean
Attorney Sharing Indicator	0.00	1.00	0.01
Distance Between Pair (Miles)	36.90	14.49	36.76
Local Attorney Supply	103.70	97.85	103.66
Observations	5983544	38641	6022185

Source: Bankruptcy dockets for Maryland.

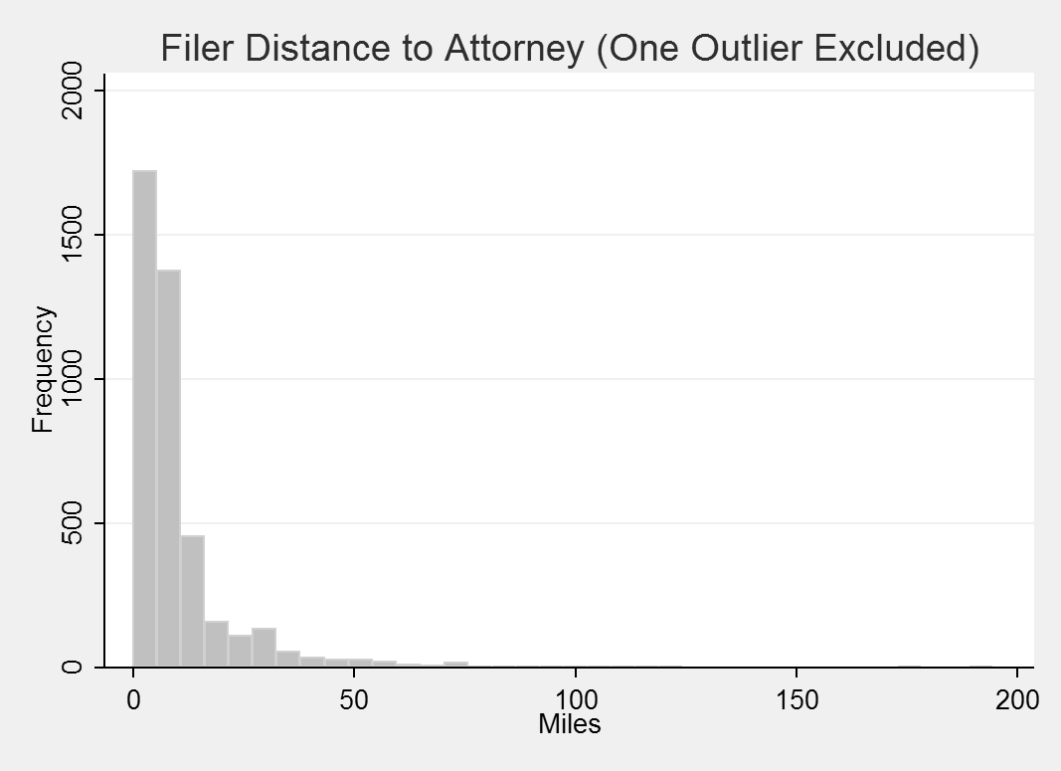

Figure B7: Distance from filer to attorney. Most filers live close to their attorney (75% live within 11 miles). If a filer has more than one attorney, each relationship is included. Excludes the outlier relationship of one Tennessee attorney who is over 500 miles from his client. *Source:* Maryland bankruptcy dockets.

C Robustness Checks

Table C1: Robustness check excluding neighborhoods below 25th, 50th and 75th percentile of inhabitability.

	25th		50th		75th	
	(1)	(2)	(3)	(4)	(5)	(6)
True Zero						
1 Year Lag	1.07***	1.01	1.07***	1.01	1.07***	1.01
	(0.00)	(0.12)	(0.00)	(0.12)	(0.00)	(0.12)
1 Year S-T Lag	1.01***	1.01**	1.01***	1.01**	1.01***	1.01**
	(0.00)	(0.04)	(0.00)	(0.03)	(0.00)	(0.03)
2 Year Lag		1.03***		1.03***		1.03***
		(0.00)		(0.00)		(0.00)
2 Year S-T Lag		1.00		1.00		1.00
		(0.38)		(0.40)		(0.44)
3 Year Lag		1.02		1.02		1.02
		(0.14)		(0.14)		(0.13)
3 Year S-T Lag		1.00		1.00		1.00
		(0.40)		(0.40)		(0.39)
4 Year Lag		1.02***		1.02***		1.02***
		(0.00)		(0.00)		(0.00)
4 Year S-T Lag		1.00		1.00		1.00
		(0.58)		(0.59)		(0.65)
5 Year Lag		1.02		1.02		1.02
		(0.16)		(0.17)		(0.16)
5 Year S-T Lag		1.00		1.00		0.99
		(0.32)		(0.31)		(0.28)
Observations	9120	7600	7752	6460	6384	5320
McFadden's Adjusted R-Squared	0.35	0.36	0.34	0.35	0.34	0.35
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Exponentiated coefficients; p-values in parentheses

Excluding neighborhoods below given threshold of light density of zero bankruptcy neighborhoods and that also have zero bankruptcies. Results of a zero-inflated Poisson regression estimated for neighborhood-year data with fixed effects. Results are similar to main model, which excludes neighborhoods below the *mean* light density.

* p<0.10, ** p<0.05, *** p<0.01

Table C2: Robustness check incorporating space-time lags for county model.

	(1)	(2)	(3)	(4)
True Zero				
1 Year Lag	1.01***	1.01***	1.01***	1.01***
	(0.00)	(0.00)	(0.00)	(0.00)
1 Year S-T Lag	1.01***	1.00	1.01***	1.00
	(0.00)	(0.22)	(0.00)	(0.17)
2 Year Lag		1.00		1.00
		(0.11)		(0.11)
2 Year S-T Lag		1.00		1.00
		(0.14)		(0.13)
3 Year Lag		1.00		1.00
		(0.25)		(0.24)
3 Year S-T Lag		1.01**		1.01**
		(0.02)		(0.03)
4 Year Lag		1.01*		1.01*
		(0.07)		(0.09)
4 Year S-T Lag		1.00		1.00
		(0.89)		(0.91)
5 Year Lag		0.98**		0.99**
		(0.01)		(0.02)
5 Year S-T Lag		0.99**		0.99**
		(0.05)		(0.04)
Observations	576	480	576	480
Fixed Effects	No	No	Yes	Yes

Exponentiated coefficients; p-values in parentheses

Results of a zero-inflated Poisson regression estimated for county-year data with space-time lags. Space-time lags are not broadly significant.

* p<0.10, ** p<0.05, *** p<0.01

Table C3: Robustness check without creditors and debts and using only 1953-1973 data.

	No Creditors or Debts		1953-1973	
	(1)	(2)	(3)	(4)
True Zero				
1 Year Lag	1.02***	1.01***	1.02***	1.01***
	(0.00)	(0.00)	(0.00)	(0.00)
2 Year Lag		1.01**		1.00*
		(0.03)		(0.08)
3 Year Lag		1.01***		1.01***
		(0.00)		(0.00)
4 Year Lag		1.01**		1.01***
		(0.02)		(0.00)
5 Year Lag		0.99***		0.99***
		(0.00)		(0.00)
Observations	576	480	480	480
McFadden's Adjusted R-Squared	0.64	0.65	0.65	0.66
Fixed Effects	Yes	Yes	Yes	Yes

Exponentiated coefficients; p-values in parentheses

Results of a zero-inflated Poisson regression estimated for county-year data with fixed effects. Main results are similar to full model.

* p<0.10, ** p<0.05, *** p<0.01

Table C4: Robustness check using 20 nearest neighborhoods for space-time lags.

	(1)	(2)
True Zero		
1 Year Lag	1.07***	1.01
	(0.00)	(0.13)
1 Year S-T Lag	1.01***	1.01**
	(0.00)	(0.05)
2 Year Lag		1.03***
		(0.00)
2 Year S-T Lag		1.00
		(0.59)
3 Year Lag		1.02
		(0.16)
3 Year S-T Lag		1.00
		(0.49)
4 Year Lag		1.02***
		(0.00)
4 Year S-T Lag		1.00
		(0.61)
5 Year Lag		1.02
		(0.14)
5 Year S-T Lag		0.99
		(0.11)
Observations	6984	5820
McFadden's Adjusted R-Squared	0.34	0.35
Fixed Effects	Yes	Yes

Exponentiated coefficients; p-values in parentheses

Results of a zero-inflated Poisson regression estimated for neighborhood-year data with fixed effects. Results are similar to main model, which uses 8 nearest neighborhoods for space-time lags.

* p<0.10, ** p<0.05, *** p<0.01