How (else) do physicians respond to malpractice liability? Physician home values in states with unlimited homestead exemptions

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ABSTRACT

In this paper we test whether physicians respond to policies that allow them to protect themselves from the financial risk of malpractice. We test whether physicians take advantage of provisions of bankruptcy laws and adjust the value of their home purchases to increase their protection from liability claims that exceed their policy limits. The hypothesis is that in states with unlimited "homestead" exceptions—provisions of state law that protect debtors' home equity when they file for bankruptcy—physicians will purchase comparatively more expensive homes than in states without such exceptions. We find that unlimited homestead exemptions induce physicians to invest approximately 13% more in the value of their homes compared to what they would have invested in the absence of an exemption. These findings suggest that physicians take financially costly decisions to protect themselves from uninsured losses. This indicates that physicians are willing to incur some cost to avoid liability risk in excess of their insurance and further that they do bear some sort of risk beyond insured losses, hassle costs, and reputation.

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I. Introduction

The risk of a medical malpractice claim represents a source of considerable professional anxiety for physicians. Approximately 7% of physicians face a malpractice claim in a year and even in lower risk specialties 75% of physicians can expect to face a claim over the course of an extended career (Jena et al., 2011). To protect themselves from the financial risk associated with malpractice liability claims, a substantial majority of physicians carry medical professional liability insurance to cover the cost of successful claims.[1] This insurance is generally not experience rated at the individual level, meaning that when physicians experience claims it should not increase their future premiums. As such, the common belief is that physicians are mostly protected from the financial risk associated with liability claims.

Despite the ubiquity of insurance coverage, physicians regularly report practicing defensive medicine[2], and there is an extensive literature on physician behavior that finds changes in malpractice risk weakly change physician labor supply and practice patterns.[3] The prevailing view in the literature has been that these behavioral responses of physicians to malpractice risk are driven by the non-financial "psychic" costs of malpractice, such as the time and hassle of dealing with claims.[4] An additional indirect cost that potentially has both financial and non-financial ramifications is if physicians suffer reputational damage among their peers or potential patients. For example, Helland and Lee (2010) find that physicians increase their payment in

[1] In addition to the financial incentives to purchase malpractice insurance, many states require physicians to carry coverage and most hospitals require it for admitting privileges (Mello, 2006).

[2] For example, Studdert et al. (2005) report that 93% of physicians surveyed in Pennsylvania in 2003 reported that they practice defensive medicine. Similarly, 91% of physicians agreed that defensive medicine was common in a national survey conducted in 2009 by Bishop et al. (2010). Carrier et al. (2010) found somewhat lower, but still substantial (60-78%) rates of physicians reporting behavior consistent with defensive medicine.

[3] See Encinosa and Helliger (2005), Klick and Stratmann (2007), Matsa (2007), Baicker and Chandra (2005) Kessler et al. (2005) and Helland and Showalter (2009) for evidence on physician labor supply. See Kessler and McCellan (1996, 2002), Bovbjerg, et al. (1996), Dubay et al (1999, 2001), Currie, and MacLeod (2008), Dranove et al. (2012) and Frakes (2012 and 2013) for evidence on liabilities impact on practice patterns.

[4] For instance, Seabury et al. (2013) show that a significant portion of physicians' careers (up to 25% in high risk specialties) are conducted under the shadow of an outstanding lawsuit, which could impose costs due to time or hassle of dealing with the suit or uncertainty over its outcome.

malpractice claims to avoid disclosure on state webpages that list malpractice awards. This is consistent with physicians being concerned about damage to their reputations from a successful malpractice claim beyond just the direct payments. The belief that physician behavior is driven more by non-financial costs of malpractice has in part motivated many to call for reform efforts to shift away from more traditional damage caps and towards other reforms that could lower the frequency of claims or make resolving them faster and more efficient (Mello et al., 2014).

However, despite the widespread coverage of physicians with malpractice insurance, it is possible that insurance bear more financial risk from malpractice than is currently believed (or at least that they perceive themselves to bear more risk). The most common malpractice policies involve coverage that is capped at $1 million per occurrence and $3 million per year. The belief that despite these limits physicians are essentially fully insured against financial risk comes from the notion that actual payments almost never exceed this limit. For example, studies using data from Texas suggest that there is only a very small chance that liability payments exceed policy limits (c.f. Black et al., 2007).[5] Moreover, in the cases where judgments do exceed policy limits, the belief is that plaintiffs are usually willing to settle at the policy limit because attorneys are reluctant to pursue a defendant's personal assets (Baker 2001; Gilles, 2006). This is consistent with a more general perception that bankruptcy courts make it prohibitively difficult or costly to recover beyond the policy limits.[6]

Outside of Texas, however, it seems that a larger percentage of suits may exceed policy limits. In the National Practitioner Data Bank (NPDB), the largest publicly available repository

[5] Zeiler et al. (2007) find a 98.5% chance of a medical malpractice claim settling at or below the policy limit. It should be noted that this evidence is based on closed claim data from Texas which has unlimited homestead exemption. This appears to lead to lower settlements and policy limits in Texas relative to other states (see Baker et al. 2015).

[6] LoPucki (1996) has argued for the so called "death of liability" meaning that ordinary middle class people are essentially judgment proof beyond any liability insurance they happened to hold.

of information on paid malpractice claims, about 5.2% of paid malpractice claims in 2014 involved a payment of more than $1 million.[7] The average payment in these cases was about $1.98 million. Some physicians seem particularly at risk of a payment exceeding policy caps; for cases involving obstetrics errors, about 11% of payments was more than $1 million and the mean payment in those cases was $2.51 million. Note that the annual risk of a physician facing a malpractice claim that ultimately results in a payment is less than 2% (Jena et al., 2011), so the risk to physicians of facing claims that exceed the policy limits is still small. However, the career likelihood of facing a claim involving a payment is much higher, over 70% in high risk surgical specialties (Jena et al., 2011). Thus, if physicians consider claims over a long enough time horizon then the risk of facing a claim exceeding the policy limits is still small but not necessarily negligible, especially given the potentially large dollar values at stake.[8]

In this paper we test whether physicians respond to policies that allow them to protect themselves from the financial risk of malpractice. Specifically, we test whether physicians take advantage of provisions of bankruptcy laws and adjust the value of their home purchases to increase their protection from liability claims that exceed their policy limits. The hypothesis is that in states with unlimited "homestead" exceptions—provisions of state law that protect debtors' home equity when they file for bankruptcy—physicians will purchase comparatively more expensive homes than in states without such exceptions.[9] This kind of behavior represents a test of whether or not physicians perceive a direct financial threat from malpractice because the

[7] See http://www.npdb.hrsa.gov/resources/publicData.jsp for a description of the NPDB public use file (accessed June 15, 2015).

[8] These numbers could be enhanced when one considers the possibility of "self-liquidating" policies in which defense costs count against policy limits, reducing the effective policy limit. Another possibility that could lower the effective policy limit is when multiple claims arise for the same event, which insurers usually count as a single "occurrence" and apply a single coverage limit.

[9] We focus on Chapter 7 bankruptcy cases because these discharge most debts including liability judgments. In practice the same is also essentially true of Chapter 13 bankruptcies since most unsecured creditors, including a plaintiff who receives a judgment or settlement, receive about 9% of the value of their debt when the debt is restructured (White and Zhu (2010)).

additional home equity does nothing to protect physicians from the indirect or psychic costs associated with liability. Thus, absent personal financial risk there would be no reason to make costly adjustments to their home purchases.

We estimate the effects of unlimited homestead exemptions using data from the American Community Survey (ACS). The ACS is similar in sample design, mode of administration, and coverage to the public use file from the decennial census, but is administered over a smaller sample and on an annual basis. We use a difference-in-difference estimation that uses other, non-physician homeowners as a control group. By using non-physicians as a control group, we implicitly assume that physicians have much higher litigation exposure than the general population[10] and hence have greater incentives to protect their assets. We use other medical professions and high income professions as control groups to verify this assumption is reasonable.

Our findings suggest that unlimited homestead exemptions induce physicians to invest approximately 13% more in the value of their homes compared to what they would have invested in the absence of an exemption. This translates into approximately a $65,000 of asset protection if physicians owned their homes outright or could transfer sufficient funds to pay off their mortgage in the event of a claim. Several falsification and robustness tests appear to verify that the results are driven by fear of malpractice risk. For instance, we find no effect of unlimited homestead exemptions on the home values of nurses or pharmacists, but we do find an effect on

[10] Jena et al. (2011) find that the annual risk of a lawsuit for a physician is about 5-8% depending on specialty. While there is no comparable estimate for the general population in 2002 the Bureau of Justice Statistics reported that there were just 98,786 tort cases concluded. Given that the population of the US in 2002 was 287.6 million, if we assume that each of those cases involved only one plaintiff then the lower bound of annual risk of being named in a resolved lawsuit is about .03%. This quite a bit smaller than Poser's (1997) finding that there are 327.2 lawsuits per 100,000 in the US although his estimate includes contract cases. Posner's estimate would imply a litigation risk of .3%. In either estimate the liability risk for the general population is far lower than for physicians.

dentists.[11] Outside of health care, we find no impact of unlimited homestead exemptions on the home values of lawyers or engineers. Additionally, we find that the response of physicians to unlimited homestead exemptions is larger in areas with higher liability risk.

Taken together, these findings suggest that physicians take financially costly decisions, namely buying more expensive houses than they would absent the threat of liability, to protect themselves from uninsured losses. This indicates, at a minimum, that physicians are willing to incur some cost to avoid liability risk in excess of their insurance and further that they do bear some sort of risk beyond insured losses, hassle costs, and reputation. This is consistent with other examples of individuals engaging in precautionary savings to protect themselves from uninsured losses.[12] However, in this case the savings are directed towards a specific mechanism that is given an implicit subsidy from bankruptcy law.

The paper proceeds as follows. In the next section we provide some background on US bankruptcy law and the design and function of homestead exemptions. In Section III we describe the different data sources we use and Section IV describes the empirical specifications. Section V describes our results, and Section IV describes the policy implications of our findings as well as their limitations and offers suggestions for future research.

II. Background

The United States is unusual among developed nations in having very pro-debtor bankruptcy laws. In the US, individual debtors who find themselves with liabilities in excess of their ability to pay may seek to declare bankruptcy through one of two options: Chapter 7 and Chapter 13 bankruptcy. Chapter 7 requires the debtor to liquidate all nonexempt assets, if any, to

[11] About 12% of medical malpractice claims in the NPDB involve dentists and 78% involve physicians, compared to just 0.5% involving pharmacists and 1.7% involving nurses.

[12] For example, Kantor and Fishback (1996) found that workers used to engage in precautionary savings to protect themselves against the financial risk associated with work-related injuries, and that this saving fell once workers' compensation benefits were introduced.

repay his or her debts, but once assets are used up the defendant's future earnings cannot be touched. Chapter 13, on the other hand, is designed for debtors with regular income and establishes a court-approved re-payment plan over a 3 to 5 year period (depending on income). In the case of unsecured claims,[13] a debtor filing for Chapter 13 bankruptcy must offer a repayment plan that pays all "disposable income" and pays at least as much as what the claimants would receive if the debtor had liquidated under Chapter 7 (11 U.S.C. § 1325). While Chapter 13 requires debtors to pay back at least some of their unsecured liabilities, they do not have to pay them back in full.

While most personal assets are at risk during bankruptcy, both forms of individual bankruptcy offer protections that allow a debtor to keep at least part of the equity in their homes – so-called "homestead exemptions."[14] While these exemptions vary in size, there are some states that allow for debtors to keep the full value of their homes, called unlimited homestead exemptions.[15] The homestead value differs at the state and federal level. In 1978, federal bankruptcy law changed to require all states to declare their own exemption levels or simply adopt the federal level. By 1983 all states had decided on a level and whether or not their citizens could use the federal exemption instead. The federal bankruptcy exemptions are relatively small; in 2010, an individual could claim an exemption of $22,975 while a married couple filing jointly could claim an exemption of $45,950.

Because of these exemptions, bankruptcy can offer significant protection to defendants facing a large jury verdict against them in a tort case. Baker et al. (2015) note that bankruptcy

[13] Unsecured claims are those that do not include some form of collateral to secure the debt. In the case of physicians who file for bankruptcy while facing liability from a malpractice claim, the plaintiff is considered an unsecured claimant.

[14] There are limits on accumulating personal assets immediately prior to declaring bankruptcy. This is potentially important when using a the unlimited homestead exemption to protect assets as purchasing a new home or paying down an existing mortgage right after a successful malpractice claim may attract the attention of the court.

[15] Note that the homestead exemptions only apply to unsecured creditors. That is, a homestead exemption would not prevent a bank from foreclosing on a debtors house if the debtor failed to meet their mortgage obligations.

ends all efforts by the plaintiff to collect debt related to personal injury torts, including physicians facing verdicts from medical malpractice cases.[16] Thus, a physician could protect assets by increasing the value of the equity in their homes, thereby reducing any potential plaintiff's ability to recover beyond their insurance policy limit. This effect is direct in the case of Chapter 7 bankruptcy, in which the creditors recover from the liquidation of the debtors' nonexempt assets. In Chapter 13 bankruptcy, the value of the repayment plan is based in part on what the debtor would have had to pay under Chapter 7, so the homestead exemption lowers the minimum amount of the repayment plan. Obviously, the potential value of the homestead exemption is highest in states where the exemption is unlimited.

The protection afforded by homestead exemptions gives physicians the incentive to invest more in the value of their homes. Suppose a physician faces a $2 million malpractice verdict, but only $1 million of which was covered by her malpractice policy, so she files for bankruptcy. Further suppose she has $200,000 in equity in her home. If the state she live in has a homestead exemption of $100,000, a bankruptcy trustee could force her to sell her home and use the $100,000 of the equity that was not protected by the exemption to pay the plaintiff (the other $100,000 would be given to the physician).[17] However, if the homestead exemption is $200,000 or more, the bankruptcy trustee cannot force her to sell her house. Thus, the higher the value of the equity she has in her home, the more financial protection she receives from bankruptcy. This motivates our primary hypothesis which we test in our empirical work: *Conditional on income, unlimited homestead exemptions increase the value of a physician's home compared to individuals in other occupations that are less subject to liability risk.*

[16] See Gilles (2006) for a discussion of bankruptcy and tort judgments. Under Chapter 7 the physician (debtor) must list all debts owed thus a pending claim would not necessarily be discharged (see *Waterson v. Hall*, 515 F.3d 852 (8th Cir. 2008*)* and *In re Parker*, 313 F.3d 1267 (10th Cir.2002)).

[17] In the case of a Chapter 13 bankruptcy, she would not necessarily have to sell her house but would have to make payments that reflected the value of the equity.

Historically, debtors had the option to choose whether to file for bankruptcy under Chapter 7 or Chapter 13. However, this changed in 2005 with the Bankruptcy Abuse Prevention and Consumer Protection Act, which was designed to make bankruptcy more costly for debtors. Prior to 2005 there was no income test for Chapter 7, meaning that anyone was eligible to file for Chapter 7, although the lender could argue that the Chapter 7 filing was abusive if a debtor had sufficient income to pay off a reasonably restructured debt. Following 2005, Chapter 7 is now means tested (White 2007) at the state's median income, adjusted for expenses. The act also increased cost of filing by 50% (White 2008). The impact of this change was to dramatically increase number of filings in 2005 (prior to law change) and reduce subsequent Chapter 7 filings (See White and Zhu (2010) and Cornwell and Xu (2014)).[18]

While we are not aware of any occupation-specific data on bankruptcy filings, the effect of this policy change would almost certainly have been to make Chapter 7 less available to practicing physicians, since the vast majority would have incomes above the state median. Even if the mix of physician bankruptcies between Chapter 7 and 13 changed significantly after 2005, it shouldn't necessarily affect our analysis, as physicians get financial protection from homestead exemptions under either policy. Nevertheless, in our empirical work, we test separately the impact of unlimited homestead exemptions from 2000-2004 and 2005-2010.

III. Data

Our primary data source is the American Community Survey (ACS), a nationally representative, cross-sectional survey of approximately 3 million households annually, administered by the U.S. Census Bureau. The survey is mandatory and is collected by mail, telephone, and personal-visit interviews. The ACS includes respondents from the civilian population as well as military households, and collects information on respondent demographics

[18] Evidence suggests that the rise in fining fees contributed significantly to the drop (Gross et al. 2014).

(age, sex, race), occupation, annual personal earned income, hours worked and housing value. Response rates vary from year to year but exceed 90%.

One issue is that the ACS was not geographically representative of the US population until 2005, with rural areas being under represented in the earlier years. However, given the relative scarcity of physicians in rural areas, we use the 2000-2010 waves for our primary results. We use the ACS to construct a series of stacked, annual cross-sections of physician and non-physician respondents to the ACS across all years in the sample.

Our key outcome variable is the value of an individual's home. Because we are interested in how homestead exemptions impact the decisions of physicians to invest in their homes, we confine our sample to owner-occupied dwellings, which is about X% of the sample. The ACS survey asks homeowners for their assessment of the current market value of their home. Specifically, the survey asks "About how much do you think this house and lot, apartment, or mobile home (and lot, if owned) would sell for if it were for sale?" Note that the underlying basis for respondents' beliefs about their homes' value is not captured by the survey, which raises the possibility of errors in the respondents' assessments of the property's value.

In addition to the potential for individual error, there are two limitations with the ACS data on home values. The first is that, while from 2008 on the variable is reported as a continuous variable, prior to that it was reported as the midpoint of an interval for values under $250,000 (the size of the interval varied from $4,999 at smaller home values up to $49,999). The second limitation is that the home value is top-coded at $1 million throughout the entire sample. Both of these potentially introduce further measurement error to the measured home value and effectively reduce the observed variation in house value across respondents.

Measurement error in the dependent variable should not necessarily bias our results if it does not vary systematically across physicians and non-physicians or across limited or unlimited homestead states. Nonetheless, we take several steps to ensure that our estimates are not driven by measurement error in home value. First, we limit our analysis to individuals with income of $250,000 or below and re-test our results. These individuals are significantly less likely to buy homes of $1 million or more, so they are less likely to be affected by the top coding. Second, as robustness checks we estimate tobit models that allow for top-coding of outcome variable, and verify that they provide similar results as our main specifications. Third, we estimate Ramsey RESET tests to check the specification of our model; if our specification fails the Ramsey test, it would be consistent with the measurement error noted above biasing our results.

Finally, we also use additional data from the ACS on housing characteristics to assess whether physicians are investing more in their homes. Specifically, these variables include: whether the mortgage on the house, the number of rooms (total) in the house, the number of bedrooms in the house, and annual premium for homeowners insurance. While these are cruder measures of home value, if unlimited homestead exemptions induce physicians to invest more in the value of their homes it should be weakly reflected in these measures as well.

We merge the ACS data to information on homestead exemptions at the state-year level. The information on the state homestead policies come from the appendix of *How to File for Chapter & Bankruptcy* (Elias et al. 2000-2010), which has been previously used in several other studies (c.f., Greenhalgh-Stanley and Rohlin, 2013; Crradin et al., 2011; and Baker et al., 2015). For each state and year we take the value of any homestead exemption, if any, recording the actual dollar value for limited exemptions and an indicator for whether it is unlimited. As a

quality check, we compared the Elias et al. data against the current homestead exception values using online state bankruptcy statutes and verified the accuracy of the data.

Table 1 reports the values of the homestead exemptions by state and year from 2000-2010. Clearly there is wide variation in the amount a debtor allowed to keep in bankruptcy. Certain states, such as Pennsylvania, have no exemption (meaning that homeowners in Pennsylvania use the federal exemption) during the study period and other states, such as Texas, allow a debtor to protect all the equity in his or her home. Note that the values in a given state change very little over time. The lack of change over time has costs and benefits from our analysis. On the one hand, we have relatively little variation with which to identify based on within-state changes in the homestead value. However, given that homes are a durable good, the general stability in exemptions suggests that most housing decisions were made well after states had determined the level of state exceptions. In other words, the respondents in our sample made their housing decisions given full knowledge, or at least a reasonable expectation, of exactly how much income they could protect via the exemption.

Table 1 also reports the mean home value for physicians and non-physicians in the ACS sample. Not surprisingly, the homes owned by physicians in our sample exceed the value of the general population. More importantly for our study, the value of physicians' houses exceeds even the largest homestead exceptions in all but five states (or in the states where the exemption is unlimited).[19] Suppose we assume that both physicians and non-physicians have 38% equity in their homes.[20] Based on the values in Table 1, outside of unlimited states, non-physicians can protect about 59% of their equity in bankruptcy via homestead exemptions while physicians can protect only 36%. This means that investing in a more expensive home in unlimited states offers

[19] These are, not surprisingly those states with exemptions in excess of $300 thousand: Massachusetts, Minnesota, Montana, Nevada and Rhode Island.
[20] This was the value that the Federal Reserve estimated to be the national average in 2010.

a fairly unique method of asset protection in the event of a successful medical malpractice claim, while for in other states the marginal value of a large housing investment is essentially zero in terms of asset protection from liability.

In addition to the ACS and homestead exemption data, we use two sources of information to control for state-level differences in malpractice risk. First, we use data on state-level malpractice reform measures from Ronen Avraham's Database of State Tort Law Reforms (DSTLR 5th). These data, which have been widely used in previous work, provide the effective date of the ten most prevalent kinds of tort reform measures for all 50 states and the District of Columbia during our sample period. Specifically, the variables we include are indicators for whether in a state and year there is a noneconomic damage cap, a punitive damage cap, a cap on total compensation, whether the state requires that judgments be paid as a lump sum or not (periodic payments), whether the state has modified its collateral source rule, whether the state has a higher evidence standard for punitive damages, whether the state limits lawyers contingent fees, whether the state has modified the joint and several liability rule, whether the state has a patient fund that partially pays for medical malpractice judgments or whether the state has modified the comparative fault rule. All of these are commonly used measures of the degree to which the state's civil justice system is pro-plaintiff or pro-defendant and hence of liability risk.

Additionally, we use the National Practitioner Data Bank Public Use Data File (NPDB) to estimate liability risk as measured by the frequency of paid malpractice claims. Under the Health Care Quality Improvement Act of 1986, insurers must report all medical malpractice payments made on behalf of individual practitioners to the Department of Health and Human Services (HHS), and HHS then publishes that information on a quarterly in the NPDB.[21] We total these payments by state and year and divide by the number of physicians in the state. Our

[21] See Helland and Lee (2009) for a discussion of the limitations of the NPDB.

physician counts data come from the Area Health Resource File (AHRF), which uses physician counts are collected from the American Medical Association (AMA) Physician Masterfile.

We present descriptive statistics for the full sample and broken down by physician and non-physicians in Table 2. Physicians are slightly younger, more likely to be male and more likely to be married than non-physicians. Additionally, physicians have significantly higher income, work more hours and purchase more expensive homes than the general population. However, in terms of the state-level variables, including homestead exemptions, liability risk and malpractice reform, the sample appears fairly balanced. This suggests that while there are differences in income between physicians and non-physicians, location choices are fairly stable and at best only modestly influenced by factors such as tort reform or homestead exemptions that could influence liability risk.

IV Empirical specification

The foundation of our empirical work is to compare the home values of physicians to non-physicians in states with and without unlimited homestead exemptions. In principle, homestead exemptions should give everyone incentives to invest more in their homes, but we rely on the fact that physicians have comparatively high liability compared to other occupations. Some other occupations, like corporate executives, may also have higher expected liability, but they are relatively small and number. Thus comparing physicians to non-physicians allows us to estimate whether physicians in unlimited homestead exemption states engage in more asset protection than the typical individual in that state.

To motivate our empirical work, we compare the average home values for physicians and non-physicians in states with limited and unlimited homestead exemptions in Table 3. Obviously, home value is closely related to income, so we stratify the mean values according to

household income by breaking individuals into 10 income categories. Note that home values are consistently higher in limited states for both physicians and non-physicians, which mostly reflects the fact that the states with the highest housing costs, including California and New York, are states with limited homestead exemptions. Home values consistently increase with income, and the between state differences in home values are depressed for the highest income categories (though this could be related to the top-coding).[22]

Our hypothesis that unlimited homestead exemptions give physicians the incentive to invest more in the value of their homes appears to be borne out by Table 3. The last column in the table reports the unadjusted difference-in-differences (DiD) estimate between physicians and non-physicians in unlimited and limited states, with the standard error of the DiD in parentheses. Other than the lowest income category, below $100,000, which represents a small share of physicians (X%), the DiD is positive for every income category, indicating that physicians invest relatively more in the value of their homes in the unlimited states. While this analysis fails to adjust for other potentially important factors, it is consistent with physicians using the unlimited homestead exemptions to purchase additional protection against malpractice liability.

We estimate the following equation:

$$\boldsymbol{ln(home\ value_{ist}) = \alpha + \beta_1 doctor_{ist} \times unlimited_s + \beta_2 unlimited_s + \beta_3 doctor_{ist}}$$
$$\boldsymbol{+\gamma X_{ist} + \delta Z_{st} + \eta_s + \lambda_t + \delta_{st} + \varepsilon_{ist}}$$

where *i* is denotes the individual, *s* the state, and *t* they year. The dependent variable $\boldsymbol{home\ value_{ist}}$ is the natural log of the value of observation *i*'s home as reported in the ACS. The variable $\boldsymbol{doctor_{ist}}$ is an indicator equal to one if individual *i*'s occupation is listed as a physician in the ACS. The variable $\boldsymbol{unlimited_s}$ is an indicator variable that is equal to one if

[22] Note that the average home value for physicians with $500,000 or more exceeds $1 million, despite the top-coding, reflecting both the census's interpolation of the data and the inflation adjustment we applied to the top-code along with the fact that a majority of physicians in this bracket are top-coded.

the individual's state of residence, *s*, has an unlimited homestead exemption.[23] The coefficient $\boldsymbol{\beta_1}$ on the interaction term represents the DiD estimate, the difference between physicians' home values in states with a homestead exemption relative to the difference for non-physicians.

The vector $\boldsymbol{X_{ist}}$ is the individual demographic characteristics that influence the value of a person's home. In addition to household income, as described above, they include the individual's age and age squared, whether the person is female, married, their family size and whether they are self-employed. The vector $\boldsymbol{Z_{st}}$ is a series of indictor variables designed to capture the state's litigation environment. It is based on the DSTLR 5th edition, and includes controls for the tort variables summarized in Table 2. Finally we include state, $\boldsymbol{\eta_s}$, and year $\boldsymbol{\lambda_t}$, fixed effects and state-specific time trends, $\boldsymbol{\delta_{st}}$. The term $\boldsymbol{\varepsilon_{ist}}$ represents the robust standard errors which are calculated to allow clustering by state.

In order to identify the causal effects of bankruptcy laws we estimate a difference in difference model. Ideally we would estimate a triple difference model in which we looked at changes in the homestead exemption and compared the differences between physicians and non-physicians. Two difficulties present themselves. The first is that there is minimal variation in unlimited homestead exemption; only Washington DC changes to an unlimited exemption in our sample period. The second issue is that our data does not tell us when the individual purchases their home. Given the infrequency of home purchases it would be very difficult to pick up time series effects from a change.

One additional concern is that the laws are endogenous. This is less of an issue with unlimited homestead exemptions since, with the exception of Washington DC, no state changes its law during our sample period. Moreover it seems unlikely that laws were designed

[23] Given the inclusion of state fixed effects the coefficient on unlimited is in effect the coefficient on the omitted state plus the change resulting from Washington DC's switch 2002. As such we cannot interpret it directly.

specifically for physicians given that there are politically more direct methods of tort reform, such as damage caps, which protect physicians from liability.

One further complication is that the existence of unlimited homestead exemptions changes the willingness of lenders to lend and the demand for housing on the part of potential buyers. For example Lin and White (2001) and Berkowitz and White (2004) find that applications are more likely to be turned down in states with unlimited homestead exemption and Corradin et al (2015) find that unlimited exemptions generally increases demand for housing. This means that it will be impossible to make causal claims about unlimited homestead exemptions and liability by comparing physicians' home values across states.

V. Results

5.1 Main Results

The results of our preferred specification are given in Table 4. In column 1 we estimate the model leaving out the individual level control variables and the law controls. We find that physicians in unlimited states have homes worth 21.65% more relative to the difference between non-physicians. In column 2 we add our control variables and find a very similar increase of 20.56%. Both estimates are consistent with the hypothesis that physicians are taking advantage of unlimited homestead exemptions to protect assets and further that this protection is motivated by some uninsured liability risk.

Interpreting this coefficient depends on how much equity physicians hold in their homes. If physicians owned their homes outright, or could transfer enough money into their homes prior to bankruptcy to pay off their mortgage, then this estimate suggests that physicians in unlimited states are protecting about $62,000. Jenna et al. (2011) find an average liability payment of

$274,887 with a median of $111,749, which is far lower than the typical one million dollar policy limit. Thus the estimate that physicians are protecting $62,000 via unlimited homestead exemptions would appear to be quite large. Even for pediatricians ($520,924) and neurosurgeons ($344,881) average payments are typically below the usual policy limit. Jena et al. find that about 1% of claims exceed one million dollars.

However over career the likelihood that even physicians in low risk specialties are sued is fairly high. By age 45 Jena et al estimate that 36% of physicians in low risk specialties and 75% in high risk specialties will have faced a claim and 5% and 33% respectively will have made a payment. Given that the $62,000 represents a career long version of excess policy coverage it does not imply a particularly high level of risk aversion. The Federal Reserve finds that in 2010 the average homeowner in the US had equity equal to 38% of the market value of their home. If we take this as a lower bound the amount being protected falls to $23, 612.

Thus far we have not included two obvious control variables: household income and hours worked. The concern is that these maybe endogenous. In the case of household income the concern is that the existence of a homestead exemption allows physicians to choose lower policy limits and hence less expensive medical malpractice insurance and this may show up as higher incomes. Physicians may also modify their practice in ways that increase liability but also increase income (e.g. high risk deliveries or working in the ER). In the second case the concern is that previous studies have found an impact of liability risk on hours worked (see Helland and Showalter 2009) making it potentially endogenous. In column 3 we estimate the model including income and find a smaller but still significant and positive effect suggesting an increase in home value of 15.6%. If we include only hours worked, column 4 we find an effect of about 20%.

Finally in column 5 we include both income and hours worked and find an effect of approximately 14%.

In column 6 we estimate the model with a state specific time trend. The concern is that states have very idiosyncratic liability trends (see Helland and Seabury 2015) which may confound our estimates. We again find a positive and significant effect of unlimited homestead exemptions for physicians indicating about a 14% increase in home value.

The results in Table 4 are consistent with the view that physicians in unlimited homestead exemption states use the possibility of Chapter 7 bankruptcy to protect their assets from a liability judgment. This in turn would lead to the differences in settlements and premiums observed in Baker et al. (2015) as plaintiff's attorneys, knowing that they cannot get at assets, accept lower settlements or larger haircuts on judgments. The results further suggest that physicians must have some liability exposure in excess of their insurance in order to induce them to increase their home purchase in the face of liability risk. In Table 4b we estimate the model using a tobit to account for the truncation at $1,000,000 nominal dollars. The results are substantively identical.

In Table 5 we estimate the model using only 2005-2010 data. Given the change in bankruptcy laws in 2005 it is possible that unlimited homestead exemption negated their affect as an asset protection strategy. We cannot directly test the laws impact in that the US Census estimates the median residential tenure at 5 years for all residences and 11 years for homeowners meaning that most of our sample purchased their homes before the law change even in the latest cross-section in our sample. Nevertheless it is useful to see if we can detect any differences in the post reform period. In addition the ACS survey underwent several changes in prior to 2005 and

is only geographically representative after 2004. Our estimated coefficients in Table 5 are similar in magnitude to Table 4 and continue to be significant and positive.[24]

5.2 Robustness Checks

In Table 6 we estimate the impact of unlimited homestead exemptions on the week hours worked and family income. Previous studies have found that an increase in liability exposure reduces physician labor supply. It is possible that the ability to protect assets through the unlimited homestead exemptions also causes physicians to change their practices in ways that may increase litigation risk but also increase income. We find some evidence of this effect in Table 6. We find that physician income is higher in unlimited states by about 6-8% depending on whether we include state specific trends and law controls. To the extent that unlimited homestead exemptions reduce physicians' liability exposure this is consistent with the earlier literature.

In Table 7 we add a direct measure of liability exposure. An important caveat on the results is required. To the extent that unlimited homestead exemptions reduce liability exposure for physicians they also reduce the incentive to sue. As such the liability risk measured by the total payments per physician in the state is potentially endogenous. Our modified estimating equation is given by

$$\begin{aligned} ln(\textbf{home value}_{ist}) = \alpha + \beta_1 \textbf{liability risk}_{st} * \textbf{doctor}_{ist} * \textbf{unlimited}_s \\ + \beta_2 \textbf{lliability risk}_{st} * \textbf{unlimited}_s + \beta_3 \textbf{liability risk}_{st} \\ + \beta_4 \textbf{doctor}_{ist} * \textbf{unlimited}_s + \beta_5 \textbf{unlimited}_s + \beta_6 \textbf{doctor}_{ist} \\ + \gamma \mathbf{X}_{ist} + \delta \mathbf{Z}_{st} + \eta_s + \lambda_t + \varepsilon_{ist} \end{aligned}$$

[24] The results are also similar for 2000-2005.

where $\boldsymbol{liability\ risk_{st}}$ is the total payments in the NPDB divided by the total number of physicians in state *s* in year *t*.

The variables are highly correlated and as such none are individually significant. All are jointly significant however. In the bottom of Table 7 we break out top three quartiles, relative to the bottom quartile of liability risk. We find that at the top quartile of liability risk physicians in unlimited homestead exemption states increase their home purchase values by over 20%. This falls to 18% for the 3rd quartile and 17% for the 2nd. The results are similar if state law controls are included. Again the findings are consistent with physicians in higher liability environment taking greater advantage of the asset protection value of the unlimited homestead exemption.

In Table 8 we estimate the model using the value of all homestead exemptions rather than just the unlimited exemption. We set the exemption equal to $1,000,000 for unlimited states and treat the exemption level as the federal level if the state has an exemption level lower than the federal level and allows its citizens to opt for the federal level. The results are consistent with our findings above. Physicians increase their home purchases by about .19% per $100,000 of exemptions (the average exemption across states without an unlimited exemption). This is far smaller than our estimates above suggesting that the effect is driven by unlimited exemptions. Further evidence of this can be found in Table 9. In this estimation we do not include unlimited states. The results suggest that physicians in states without an unlimited exemption actually invest less in their homes; the effect is about a 7% reduction in home value per $100,000 of exemption.

Table 10 we estimate the model using different professions identified in the ACS. For nurses, lawyers, engineers, and pharmacists we find no significant effect of unlimited homestead exemptions on home value. We do find that professionals own more expensive homes than

others in the ACS survey. The exception is dentists who do have higher home values in unlimited states. This may reflect dentists own higher liability exposure, dentists are regularly sued and do carry liability insurance. For example Milgram et al. (1994) finds that almost a quarter of dentists surveyed had experienced a malpractice claims.[25]

Finally in Table 11 we estimate the model using four alternative measures of home value available in the data. The first is the monthly mortgage payment. We find that doctors in unlimited states have mortgage payments about 9% higher than the difference between physicians and other homeowners in states without an unlimited homestead exemption. We find a similar impact on the annual cost of property insurance among doctors in states with homestead exemptions. Although the impact is positive from the number of rooms and bedrooms the results are not significant perhaps owing to the truncation.

VI. Conclusions

Studdert et al. (2005) report that fully 93% of the physicians surveyed reported practicing defensive medicine. This included additional tests or referrals designed to reduce liability risk. Yet this reported rate of defensive medicine is at odds with evidence from Texas that physicians are very unlikely to pay any portion of a claim out of personal assets. Moreover medical malpractice insurance is not experience rated meaning that a physician's liability history does not affect his or her premium. Given that defensive medicine is potentially a financial benefit to the physician, in the form of increased payments, or at a minimum not personally costly it is possible that physicians are simply attributing their behavior to liability risk. This would imply that previous estimates of defensive medicine are in fact estimating so called induced demand effects more generally and not a specific response to liability.

[25] According to Lydiatt (2002) fully 60% of the lawsuits against dentists are for failure to perform a biopsy in cases where the patient had cancer of the oral cavity.

In this paper we estimated the impact of liability on a personally costly decision; reallocating wealth to a larger home. Assuming that families choose the optimal allocation of income and wealth to their home purchase we would not expected physicians to systematically prefer a larger house than other families of similar income. To test whether liability causes a costly reallocation toward housing we examine the impact of unlimited homestead exemptions. In states with an unlimited homestead exemption debtors who file for Chapter 7 bankruptcy can protect all of the equity in their homes against creditors including those with a tort judgment against the debtor.

We find that the difference between physicians in unlimited homestead exemption states and non-unlimited states relative to the difference in the general population implies that physicians purchase homes that are about 20% more expensive when they can protect their assets from liability. If physicians owned their homes outright, or could transfer assets into those homes in the event of a claim this implies almost $62,000 in asset protection. This implies that physicians must perceive that the likelihood of uninsured costs is worth at least $62,000 over their expected tenure in the home.

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Table 1: Homestead Exemption Levels for Married Individuals 2000-2010

	Exemption Level ($)						Federal	Average Home Value	
State	2000	2002	2004	2006	2008	2010	Exemption?	Non-Doctor	Doctor
Alabama	10,000	10,000	10,000	10,000	10,000	10,000	No	170,310	562,060
Alaska	62,000	64,800	64,800	67,500	67,500	70,200	No	255,016	468,579
Arizona	100,000	100,000	100,000	150,000	150,000	150,000	No	287,276	731,383
Arkansas	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Yes	141,230	467,577
California	75,000	75,000	75,000	75,000	75,000	75,000	No	572,058	1,021,855
Colorado	90,000	90,000	90,000	90,000	90,000	90,000	No	332,693	717,458
Connecticut	150,000	150,000	150,000	150,000	150,000	150,000	Yes	434,348	755,729
Delaware	0	0	0	50,000	50,000	50,000	No	286,658	621,627
District of Columbia	0	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Yes	541,223	892,203
Florida	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	No	292,421	744,539
Georgia	20,000	20,000	20,000	20,000	20,000	20,000	No	231,270	590,568
Hawaii	20,000	20,000	20,000	20,000	20,000	20,200	Yes	562,162	933,622
Idaho	50,000	50,000	50,000	50,000	50,000	100,000	No	218,184	583,185
Illinois	15,000	15,000	15,000	30,000	30,000	30,000	No	265,541	698,512
Indiana	15,000	15,000	15,000	30,000	30,000	30,000	No	167,787	496,630
Iowa	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	No	145,834	398,887
Kansas	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	No	152,615	449,741
Kentucky	10,000	10,000	10,000	10,000	10,000	10,000	No	161,035	508,729
Louisiana	15,000	25,000	25,000	25,000	25,000	25,000	No	163,703	490,749
Maine	25,000	50,000	70,000	70,000	70,000	90,000	No	219,197	428,983
Maryland	0	0	0	0	0	0	No	402,894	752,763
Massachusetts	100,000	300,000	300,000	500,000	500,000	500,000	Yes	449,906	847,756
Michigan	7,000	7,000	7,000	31,900	31,900	34,450	Yes	205,115	537,219
Minnesota	200,000	200,000	200,000	200,000	300,000	300,000	Yes	257,795	583,815
Mississippi	75,000	75,000	150,000	150,000	150,000	150,000	No	138,597	468,153
Missouri	8,000	8,000	15,000	15,000	15,000	15,000	No	183,156	555,543
Montana	60,000	60,000	200,000	200,000	500,000	500,000	No	222,111	469,532
Nebraska	12,500	12,500	12,500	12,500	60,000	60,000	No	148,652	424,586
Nevada	125,000	125,000	200,000	350,000	350,000	550,000	No	328,626	790,393
New Hampshire	60,000	60,000	200,000	200,000	200,000	200,000	Yes	305,076	548,370
New Jersey	0	0	0	0	0	0	Yes	441,104	799,186
New Mexico	60,000	60,000	60,000	60,000	120,000	120,000	Yes	207,466	486,336
New York	20,000	20,000	20,000	100,000	100,000	100,000	No	380,489	829,239
North Carolina	20,000	20,000	20,000	37,000	37,000	37,000	No	216,587	564,160
North Dakota	80,000	80,000	80,000	80,000	80,000	100,000	No	125,763	355,249
Ohio	10,000	10,000	10,000	10,000	10,000	40,000	No	184,447	487,628
Oklahoma	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	No	140,564	439,669
Oregon	33,000	33,000	33,000	39,600	39,600	39,600	No	314,116	606,155
Pennsylvania	0	0	0	0	0	0	Yes	206,951	523,717
Rhode Island	0	150,000	150,000	200,000	300,000	300,000	Yes	343,704	675,128
South Carolina	10,000	10,000	10,000	10,000	10,000	10,000	No	211,919	633,082
South Dakota	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	No	148,950	400,876
Tennessee	7,500	7,500	7,500	7,500	7,500	25,000	No	191,339	557,882
Texas	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Yes	179,604	541,168
Utah	20,000	40,000	40,000	40,000	40,000	40,000	No	268,974	609,278
Vermont	150,000	150,000	150,000	150,000	150,000	150,000	Yes	242,978	466,454
Virginia	10,000	10,000	10,000	10,000	10,000	10,000	No	345,284	703,287
Washington	30,000	40,000	40,000	40,000	40,000	125,000	Yes	362,340	727,666
West Virginia	30,000	50,000	50,000	50,000	50,000	50,000	No	132,599	421,294
Wisconsin	40,000	40,000	40,000	40,000	40,000	40,000	Yes	221,841	543,744
Wyoming	20,000	20,000	20,000	20,000	20,000	20,000	No	211,840	474,477

Source: Elias, Renauer, and Leonard (various years) and the ACS Survey 2000-2010

Table 2: Summary statistics

	Full Sample		Doctors		Non-Doctors	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Age	54.58	13.94	50.63	10.94	54.60	13.95
Female	0.53	0.50	0.27	0.44	0.53	0.50
Married	0.64	0.48	0.82	0.38	0.64	0.48
Household Income	85864.70	84059.21	287011.37	185671.48	84951.62	82201.21
Number of own family members in household	2.63	1.51	3.04	1.49	2.63	1.51
Unlimited Homestead Exemption	0.19	0.40	0.17	0.38	0.20	0.40
Usual hours worked per week	26.17	21.63	47.87	19.35	26.08	21.59
House Value	279485.01	288299.71	646634.38	486758.90	277565.72	285664.64
Physician Liability Risk	5283.19	2995.93	5422.17	3055.95	5282.56	2995.65
Self Employed	0.09	0.29	0.37	0.48	0.09	0.29
Non Economic Damage Cap	0.47	0.50	0.46	0.50	0.47	0.50
Punitive Damage Cap	0.59	0.49	0.56	0.50	0.59	0.49
Cap on Total Recovery	0.09	0.28	0.08	0.28	0.09	0.28
Split Recovery	0.12	0.33	0.12	0.33	0.12	0.33
Modified Collateral Source Rule	0.69	0.46	0.72	0.45	0.69	0.46
Punitive Damages Evidence Rule	0.71	0.45	0.68	0.47	0.71	0.45
Periodic Payments	0.70	0.46	0.71	0.46	0.70	0.46
Contingent Fee Limit	0.49	0.50	0.52	0.50	0.49	0.50
Joint and Several Liability Modification	0.76	0.43	0.75	0.43	0.76	0.43
Patient Fund	0.28	0.45	0.28	0.45	0.28	0.45
Comparative Fault Modification	0.91	0.29	0.91	0.29	0.91	0.29
Observations	12990206		58466		12931740	

Sample period 2000-2010

Table 3: Home Values in Limited and Unlimited Homestead Exemption States

	Unlimited	Limited	Unlimited/Doctors	Limited/Doctors
House Value	207615.1	294961.3	563989.9	664297.5
	(222928.7)	(296681.0)	(439272.5)	(494530.9)
Difference Unlimited	356,374.80			
Difference Limited	369,336.20			
Observations	2124019	8353990	9715	43931

mean coefficients; sd in parentheses

Table 4: Homestead Exemption on Housing Values, 2000-2010

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Doctor*Unlimited	0.196***	0.187***	0.145***	0.182***	0.130**	0.131**
	(0.062)	(0.062)	(0.052)	(0.062)	(0.055)	(0.055)
Doctor	0.906***	0.774***	0.344***	0.746***	0.293***	0.293***
	(0.040)	(0.036)	(0.026)	(0.035)	(0.024)	(0.024)
Unlimited Homestead Exemption	0.052	0.044	0.036	0.038	0.032	0.087***
	(0.035)	(0.034)	(0.032)	(0.032)	(0.030)	(0.020)
Percentage change for doctors in unlimited states						
(100*[exp(β)-1])	21.65%	20.56%	15.60%	19.96%	13.88%	14.00%
Observations	10,476,750	10,476,750	10,434,999	6,744,019	6,741,280	6,741,280
R-squared	0.210	0.251	0.367	0.262	0.393	0.395
Control Variables	No	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Law Controls	No	Yes	Yes	Yes	Yes	Yes
Income	No	No	Yes	No	Yes	Yes
Hours Worked	No	No	No	Yes	Yes	Yes
State Specific Trend	No	No	No	No	No	Yes

Note control variables includ age, age squared, gender, marital status, family size, and self employed.

Robust standard errors clustered on state in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4b: Homestead Exemption on Housing Values (Tobit Model)

VARIABLES	1	2	3	4
Doctor*Unlimited	0.161***	0.158***	0.126***	0.127***
	(0.052)	(0.053)	(0.045)	(0.047)
Doctor	0.524***	0.540***	0.584***	0.584
	(0.049)	(0.054)	(0.104)	(0.000)
Unlimited Homestead Exemption	0.074	0.076	0.057	0.109
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	12,990,206	12,990,206	8,151,055	8,151,055
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Law Controls	No	Yes	Yes	Yes
Income	No	No	Yes	Yes
Hours Worked	No	No	Yes	Yes
State Specific Trend	No	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Homestead Exemption on Housing Values, 2005-2010

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Doctor*Unlimited	0.178***	0.171**	0.152**	0.171**	0.152**	0.152**
	(0.065)	(0.065)	(0.065)	(0.064)	(0.065)	(0.065)
Doctor	0.906***	0.779***	0.071***	0.728***	0.068***	0.069***
	(0.042)	(0.038)	(0.018)	(0.035)	(0.018)	(0.018)
Unlimited Homestead Exemption	-0.031***	0.355***	0.170***	0.349***	0.170***	-30.218***
	(0.000)	(0.023)	(0.018)	(0.022)	(0.018)	(0.750)
Observations	6,837,518	6,837,518	6,837,518	6,837,518	6,837,518	6,837,518
R-squared	0.214	0.254	0.352	0.258	0.352	0.355
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Law Controls	No	Yes	Yes	Yes	Yes	Yes
Income	No	No	Yes	No	Yes	Yes
Hours Worked	No	No	No	Yes	Yes	Yes
State Specific Trend	No	No	No	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Unlimited Homestead Exemption on Income and Hours Worked

VARIABLES	(1) Household Income	(2) Household Income	(3) Hours Worked	(4) Hours Worked
Doctor*Unlimited	0.084***	0.068**	0.013	0.005
	(0.026)	(0.029)	(0.014)	(0.012)
Doctor	1.310***	1.104***	0.225***	0.221***
	(0.021)	(0.016)	(0.009)	(0.006)
Unlimited Homestead Exemption	-0.007	0.019**	-0.007***	-0.009***
	(0.009)	(0.008)	(0.002)	(0.002)
Observations	12,714,431	12,714,431	8,187,207	8,187,207
R-squared	0.030	0.197	0.004	0.113
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Law Controls	No	Yes	No	Yes
State Specific Trend	No	Yes	No	Yes

Note all regressions include controls for age, age squared, gender, marital status, family size and self employed.
Robust standard errors clustered on state in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Homestead Exemption on Housing Values

VARIABLES	(1)	(2)
Liability Risk*Unlimited	-0.010	-0.002
	(0.013)	(0.008)
Liability Risk*Unlimited*Doctor	0.010	0.006
	(0.015)	(0.013)
Practicing Physician*Liability Risk	-0.008	-0.004
	(0.011)	(0.008)
Liability Risk	0.004	-0.008**
	(0.007)	(0.004)
Doctor*Unlimited	0.143	0.116
	(0.130)	(0.112)
Doctor	0.951***	0.426***
	(0.087)	(0.062)
Unlimited Homestead Exemption	0.079	0.045
	(0.051)	(0.037)
Observations	10,476,750	10,434,999
R-squared	0.210	0.362
State FE	Yes	Yes
Year FE	Yes	Yes
Law Controls	No	Yes
top-quartile beta	0.207***	0.156***
	(0.0560)	(0.0791)
middle-quartile beta	0.187**	0.144*
	(0.0727)	(0.0639)
bottom-quartile beta	0.172*	0.134*
	(0.0909)	(0.0504)

Note all regressions include controls for age, age squared, gender, marital status, family size and self employed.
Robust standard errors clustered on state in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Homestead Value Exemption on Housing Values

VARIABLES	(1)	(2)
Doctor*Value of Homestead Exemption	0.000000019***	0.000000015**
	(0.000)	(0.000)
Doctor	0.905603723***	0.403577027***
	(0.040)	(0.026)
Value of Homestead Exemption	0.000000006	0.000000003
	(0.000)	(0.000)
Practicing Physician*Value of Homestead Exemption		
Practicing Physician		
Observations	10,476,750	10,434,999
R-squared	0.210	0.362

Note all regressions include controls for age, age squared, gender, marital status, family size, self
Robust standard errors clustered on state in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Homestead Exemption on Housing Values without Unlimited

VARIABLES	(1)	(2)
Doctor*Value of Homestead Exemption	-0.000000716***	-0.000000597***
	(0.000)	(0.000)
Doctor	0.940824878***	0.438375816***
	(0.038)	(0.024)
Value of Homestead Exemption	0.000000094	-0.000000021
	(0.000)	(0.000)
Observations	8,353,019	8,321,470
R-squared	0.214	0.362

Note all regressions include controls for age, age squared, gender, marital status, family size self employed and state tort law.
Robust standard errors clustered on state in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Flasification Test

VARIABLES	(1) All	(2) Nurses	(3) Lawyers	(4) Engineers	(5) Dentists	(6) Pharmacists
Doctor*Unlimited	**0.132****					
	(0.056)					
Doctor	**0.306*****					
	(0.025)					
Nurse*Unlimited	0.018	0.017				
	(0.016)	(0.016)				
Nurse	0.038***	**0.033*****				
	(0.011)	**(0.010)**				
Lawyer*Unlimited	0.079		0.078			
	(0.058)		(0.057)			
Lawyer	0.271***		**0.259*****			
	(0.013)		**(0.012)**			
Engineer*Unlimited	0.044			0.042		
	(0.054)			(0.053)		
Engineer	0.123***			**0.114*****		
	(0.014)			**(0.014)**		
Dentist*Unlimited	0.148***				**0.146*****	
	(0.042)				**(0.041)**	
Dentist	0.169***				**0.147*****	
	(0.020)				**(0.019)**	
Pharmacist*Unlimited	0.020					0.017
	(0.025)					(0.024)
Pharmacist	0.151***					**0.139*****
	(0.015)					**(0.015)**
Unlimited Homestead Exemption	0.030	0.032	0.032	0.032	0.032	0.033
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Observations	6,741,280	6,741,280	6,741,280	6,741,280	6,741,280	6,741,280
R-squared	0.394	0.392	0.393	0.392	0.392	0.392

Note all regressions include controls for age, age squared, gender, marital status, family size self employed and state tort law.
Robust standard errors clustered on state in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 11: Other Measures

VARIABLES	(1) Mortgage	(3) Property Insurance	(4) Rooms	(5) Bedrooms
Doctor*Unlimited	0.094***	0.305***	0.010	0.007
	(0.030)	(0.093)	(0.011)	(0.008)
Doctor	0.164***	-0.057	-0.026***	-0.019***
	(0.013)	(0.062)	(0.005)	(0.002)
Unlimited Homestead Exempti	0.033***	0.072***	-0.000	-0.003
	(0.011)	(0.015)	(0.002)	(0.002)
Observations	6,668,909	10,477,397	12,786,036	12,786,036
R-squared	0.334	0.064		

Note: Total Rooms and Bedrooms are estimated with a Poisson model.
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1