Death and Taxes are Still the Only Things Certain in Life: The Impact of Economic Factors on Tort Suit Filings

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Abstract

This paper looks to discover if economic factors have an effect on the rate of tort suit filings in the forty-five largest counties in the United States. This study examines both tort trials and tort cases and focuses on three different years: 1992, 1996, and 2001. The difference between this paper and previous papers is that this study examines the data on a county level. The results reveal that tax revenue, race, the number of accidental deaths and perhaps the region play an important role in determining the number of tort suits filed. The claimant's gender, sales at retail establishments, and the political preference of the claimant have drastically varying results between the two primary regressions in this study, which indicates a need for further research on these specific variables.

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I. Introduction

Determining whether to file a lawsuit requires assessing numerous different issues. Filing a lawsuit typically does not come down to if a person was injured or harmed in any way, but rather requires a series of questions. How expensive will a lawsuit be? What is the likelihood of winning a case? If I win, how much punitive damages will be awarded and will it be enough to cover the expense of filing a suit in the first place? These are just a few of the questions people think about when deciding whether or not to file suit. While not all, a large portion of these questions are related to economic concerns. Therefore, which economic factors affect peoples' decision to file suit?

To answer this question, this study investigates the rate of tort suit filings in different counties in the U.S. and separates the variables into three categories of economic, social, and incident factors that affect the rate of tort suit filings. Tort suits are either personal injury or property damage suits caused by negligent or intended actions of a party that encapsulate automobile accidents, premise liability, malpractice, product liability, libel, intentional torts, and other negligent acts.[1] This study follows previous research by Richard Posner (1997) and Han Duck Lee, Mark J. Browne, and Joan T. Schmit (1994) among others in attempting to determine causal factors in filing suit. Posner (1997) looks at individual U.S. states and England to determine the level of "litigousness" in each society. Lee, Browne, and Schmit (1994) focuses on 19 U.S. states to assess the impact after tort reform measures are passed in the late 1980's. The study below adds to the literature by examining this issue in a fine geographical area – approximately forty-five U.S. counties.

[1] As defined by D. Rottman, N. La Fountain, and B. Ostrom (1996).

This paper is an empirical study that hinges on inductive reasoning since it moves from a specific case and tries to find a general truth: From looking at specific counties in U.S. to determining the rate of tort suit filings in general. This study replicates the regressions and other forms of analysis from previous papers by using information from forty-five different counties in the U.S. The results consistently reveal that tax revenue, race, the number of accidental deaths, and perhaps the region are all important factors in determining whether to file suit. These factors have been explored by previous papers. The gender of the claimant, sales at retail establishments, and the political preference of the claimant are three variables that have drastically varying results between the two main regressions and require further research.

This paper will first examine previous work attempting to explain the number of torts suits filed. Then the manner and method by which this paper approaches the topic will be detailed, including an extensive description of the selected explanatory variables. Regressions results are then presented and analyzed, leading to a list of the most and least litigious counties in the United States. Finally, these results are discussed in the conclusion.

II. Literature Review

Posner (1997) and Lee, Browne, and Schmit (1994) find several factors that impact the rate of tort suit filings. Posner (1997) focuses on a comparison between U.S. and England to see which is the most litigious. This study examines data from thirty-three states (because of data availability), the District of Columbia, England, and Wales. This paper conjectures that there are seven “economic” indicators that are crucial for explaining the number of tort suits: rate of accidental death, urbanization, population density, education, income, liability insurance coverage, and number of lawyers. This study also employs regional dummy variables. Posner's (1997) final regression results reveal that income, insurance coverage, urbanization, population density, and education all have coefficients that are statistically significant predictors of the number of tort suits and finds that income, education, and urbanization have the largest predictive power. Each of these variables' coefficients is positive except population density and education. The number of lawyers does not have a statistically significant effect. The rate of accidental death significantly affects the number of suits filed in some specifications, namely a model with regional variables and without England. In specifications with regional variables, the South region is found to be significantly negative.[2] The main unexpected result is the coefficient for population density is negative rather than positive.[3] Ultimately, this study finds England to be more litigious than the United States.

Two problems are noted in the analysis. The first problem is that of bi-causation with some independent variables (accidental deaths, insurance coverage and number of lawyers) and the dependent variable. To address bi-causality, annual data are used and a reduced form regression model is employed to eliminate three problem variables and substitutes four others (per capita alcohol consumption, the male-female ratio, the percent of the population under 25, and the percent of the population that is over 64).[4,5] The second issue is that of multicollinearity, suggested by the high correlation between the

[2] Regional dummy variables are dropped in regression models for the data set containing England, as England cannot be categorized.
[3] Posner (1997 8) states that population density, "is unexplained by [his] analysis."
[4] Posner (1997) finds the coefficient for male-female ratio to be statistically significant and negative, which means that women are more likely to sue than men
[5] The idea that using individual years will greatly reduce the bi-causation problem is still a little speculative. This regression, however, is Posner's best choice because he needs a regression that can both examine England as well as fix as much of the problem of bi-causation.

independent variables. However, for this problem no solution is offered; instead, correlated variables are left in the regression and general results are interpreted. Posner's (1997) method will be applied to county level data in this study.

Lee, Browne, and Schmit (1994) performs an analysis similar to Posner (1997), but with fewer states and over a six-year time span. Specifically, this paper examines 19 states to determine the impact of tort reform measures passed in the late 1980's on the rate of tort filings, and employs a few more factors than those used by Posner (1997). Furthermore, this paper divides the factors into two different categories: environmental and economic variables. The environmental variables entail the number of lawyers, urbanization, population density, number of surgical operations, the number of vehicle miles of travel per mile of roadway, and the existence of various types of no-fault auto laws. The economic factors consist of the percentage of gross state product from manufacturing and construction, the maximum for weekly benefit total disability worker's compensation, and the unemployment rate. In all regressions, population density and unemployment coefficients are positive and statistically significant. In two of the regressions, the number of surgical operations is found to have a negative and significant impact. In only one of the regressions, the coefficient for lawyer population is negative and significant, and workers compensation benefit has positive and significant effect. However, these results could be due to multicollinearity. The overall conclusions are unclear: the results show an increase in the number of cases filed before the tort reforms were put into effect, but controlling for this, the number of filings does not definitively decrease after the tort reforms.

Mark Browne and Robert Puelz (1999) also looks at tort reforms, but this study differs from Lee, Browne, and Schmitt (1994) because it does not look at whether tort reform changes the number of suits filed, and instead focuses on the economic and non-economic damages and the decision to file. This study provides a few more factors that previous studies did not employ, such as the claimant's gender, degree of fault accredited to the driver[6], and injury type that focuses on individual claims data that took into account state characteristics. The results demonstrate that in the regression on total claims, all coefficients that Browne and Puelz (1999) examine are significant except the unemployment rate and the claimant's gender. Also important to note is that included in the variables is a variable for attorneys, which is examined in binary terms. The results reveal that the coefficient for attorneys is positive and significant, which means that when attorneys are involved there is likely to be higher amounts of claims. The results suggest that economic and non-economic claim values both decreased after tort reforms were passed.

Thomas Miceli and Kathleen Sergerson (1995) moves away from tort reform issues and discusses how income factors contribute to the rate of tort suits filing. The main results of this paper are that the outcome of tort cases can be affected if evidence of the defendant's wealth is permissible in court in certain situations. Eric Ramusen (1995) also focuses on financial incentives of whether to file suit. However, rather than looking at the plaintiff and defendant, this study focuses on the court's system of awarding money. The study conjectures that if plaintiffs are likely to know that damages will be overestimated, they will file suit. Therefore, people who might not have filed suit in the first place may change their mind if they think they can receive a large amount of money.

[6] Information on degree fault accredited to the driver comes from police reports and eyewitness accounts as stated in Browne and Puelz (1999).

Together these papers suggest that the level of wealth and wealth disparity in a region may influence the number of tort cases.

Alexander Tabarrok and Eric Hellend (1999) examines the court's system of awarding money just as Ramusen (1995) does, but this paper concentrates specifically on the jurors' decision. Tabarrok and Hellend (1999) finds that awards are larger in states with greater poverty, seemingly because jurors seem to favor redistributing wealth. Tabarrok and Hellend (1999) also explores the effects of politics. This study looks at whether direct election of judges influences the result of tort cases. This paper surmises that states where judges are elected, the awards are larger for the plaintiff presumably because judges depend on campaign funding from plaintiff lawyers. Both the monetary and political findings might have implications on the county level. For instance, if a county has a high poverty rate, then large amounts of tort cases might be filed in that county because of the knowledge that the juries generally redistribute the wealth.

Miceli (2000) examines another factor that has not been looked at closely in the other papers: the time period in which a tort suit must be filed. This paper conjectures that a shorter statue of limitations causes the number of people who wait years to file suit to decrease and lowers the litigation cost, since people do not have as much time to file. Ultimately, the results show that the key is to find a balance between deterrence and litigation cost to discover the best length for a statue. However, this study also suggests that the statue of limitation should be longer under negligence rule compared to strict liability.

III. Method

This paper will try to explain the number of filings of tort suits by incorporating variables suggested by Posner (1997), Lee, Browne, and Schmit (1994) and several of the other authors, and following Posner (1997) will seek to identify the most litigious counties.

This study separates the data into two samples because of data constraints. One data set consists of the years 1996 and 2001 with 45 separate counties and a total of 91 county-year observations while the second set of data are based on 1992 information with 45 counties only. For 1996 and 2001, number of torts suits is measured as the number of tort trials per 100,000 population whereas for 1992 tort suits are examined by the number of tort cases per 100,000 population. Because there is no way to convert tort trials to tort cases or vice versa, this study will estimate models for each of these periods separately.

While every attempt is made to find identical variables, this study uses different specific variables than previous papers because of availability constraints. Data types are divided into the three categories: economic factors, social factors, and incident factors that indicate the number of incidents worth litigating. This study's regression model resembles this formula:

$$Y = \beta_0 + \sum_{i=1}^{n} \beta_{1i} Econ_i + \sum_{j=1}^{n} \beta_{2j} Social_j + \sum_{k=1}^{n} \beta_{3k} Incident_k \qquad (1)$$

Y = Number of tort suits filed per 100,000 population

β_0 is the constant in the equation. β_1 is the regression coefficient for all variables related to economics in conjunction with monetary matters, which is abbreviated above as *Econ* in equation 1. The economic variables generally follow with Posner's (1997) economic variables and Lee, Browne, and Schmitt's (1999) environmental variables. β_2 is the regression coefficient for all variables that encompass societal factors. Finally, β_3 is the regression coefficient for all variables that deal with incidents that might cause people to file suit. In the next section, the individual variables used in each group are detailed.

Data

The information for the dependent variable is acquired from the Bureau of Justice Statistics (1992, 1996, & 2002). This paper uses a sample of forty-five large counties over 1992 and 1996. 2001 information differs slightly because the Bureau of Statistics does not include Norfolk, MA and adds Mecklenburg, NC and Bexar, TX. As a result, this study examines 46 counties in 2001. As noted earlier, for the 1996 / 2001 sample, the dependent variable is the number of torts trials per 100,000 population. For 1992, the dependent variable is the number of torts cases filed per 100,000 population. (See Appendix for List of All Counties)

Measures of the independent variables are mainly collected from two sources. For 1992, data are found in the County and City Data Book (1994) published by the Census Bureau. For the 1996 and 2001 sample, the data on the year 1996 are obtained from the 1999 County and City Extra, and the data for 2001 are collected from the 2004 County and City Extra. When different sources are used then described above, a note is made below. Specific years are chosen to match as closely as possible the years that tort case data are reported (1992, 1996, and 2001). Occasionally some of the data are converted so that the variables are expressed in the same measurement units for all years examined. Descriptive statistics are found in Table 1 below.

Table 1: Descriptive Statistics

Variables	Description	Units	'92 Mean	'92 S.D.	'96 & '01 Mean	'96 & '01 S.D.
Torts	Tort trials -'96 & '01 Tort cases - '92	per 100,000 pop.	44.61	35.61	10.53	6.65
Economic						
MI	Money income	per capita $	16947.02	4465.46	21334.35	6944.52
PI	Personal income	per capita $	22586.91	5023.20	34379.05	10905.77
MHI	Median household income	median	35947.27	8300.88	42755.01	12030.23
TAXR	Tax revenues	per capita $	789.31	241.48	1220.90	422.40
SS	Social Security beneficiaries	per 1,000 pop.	14.14	3.47	14.46	3.09
FGNT	Federal funds and grants	per capita $	4629.58	1526.52	6271.93	4346.02
UNPL	Unemployment rate	per 100 pop.	5.20	1.51	4.44	1.59
POOR	No. money income below poverty	per 100 pop.	11.08	5.02	12.44	5.40
RICH	No. income of 75,000 or more	per 100 pop.	14.68	6.69	12.48	7.99
HSVAL	Median value of house	median	145131.30	88573.93	169695.80	123938.10
Social						
RW	No. White	per 100 pop.	73.01	14.05	67.37	18.87
RB	No. Black	per 100 pop.	13.39	11.67	14.79	12.12
RN	No. American Indian	per 100 pop.	0.46	0.52	0.66	0.58
RA	No. Asian	per 100 pop.	5.98	9.89	8.43	11.65
RH	No. Hispanic	per 100 pop.	12.18	12.09	17.20	16.04
AGEU5	No. Age under 5	per 100 pop.	7.34	0.92	7.11	0.96
AGE17	No. Age 5-17	per 100 pop.	16.86	2.27	18.05	2.22
AGE18_24	No. Age 18-24	per 100 pop.	10.81	1.46	9.11	1.34
AGE25	No. Age 23-34	per 100 pop.	18.65	1.66	15.47	2.12
AGE65	No. Age 65-74	per 100 pop.	7.00	1.59	6.32	1.35
AGE065	No. Age over 65	per 100 pop.	12.04	3.00	12.12	2.90
AGE075	No. Age over 75	per 100 pop.	5.04	1.45	5.80	1.63
CRM	No. Crimes	per 100,000 pop.	7671.25	6428.34	5246.32	2624.84
CRMV	No. Violent crimes	per 100,000 pop.	1126.85	1690.90	707.86	420.51
EDHS	No. High school education	per 100 pop.	78.46	6.17	80.03	6.43
EDCOL	No. College education	per 100 pop.	25.80	7.21	28.84	8.43
MALE	Male per female pop.	per 100 pop.	94.60	4.29	N/A	N/A
FEM	Female	per 100 pop.	N/A	N/A	51.24	1.00
PPHOME	Persons per household	mean	N/A	N/A	2.62	0.23
Incidents						
DTHA	No. Accidental deaths	per 1,000 pop.	0.31	0.09	0.30	0.08
DOCS	No. Physicians	per 1,000 pop.	3.18	1.65	3.22	1.66
TRAV	Travel time to work	mean	24.09	2.77	N/A	N/A
CARS	Vehicles per household	mean	1.59	0.33	N/A	N/A
NFLT	No-Fault auto insurance	binary	0.56	0.50	0.55	0.50
SHOPS	Establishments	$ sales per capita	7444.82	1286.22	9021.71	1929.66
LWOF	No. Law offices	per 1,000 pop.	N/A	N/A	0.48	0.52
DEM	Democrat vote	per 100 pop.	47.52	10.47	55.64	10.19
REP	Republican vote	per 100 pop.	34.37	7.89	37.94	10.83
IND	Independent vote	per 100 pop.	17.80	4.95	6.43	3.17
DVOTE	Dem. share of Dem. + Rep. vote	per 100 pop.	57.73	10.31	59.54	11.14
S	South region	binary	0.11	0.32	0.12	0.33
SE	Southeast region	binary	0.11	0.32	0.12	0.33
NE	Northeast region	binary	0.24	0.43	0.24	0.43
W	West region	binary	0.24	0.43	0.24	0.43
MW	Midwest region	binary	0.29	0.46	0.28	0.45

Economic Factors

The category of economic conditions consists of various factors that are related to income and wealth. A number of variations on income are collected for sensitivity analysis. In addition this category includes various measurements of federal government support and wealth. All income data are presented in real dollars, calculated by the Census Bureau.

Posner (1997) finds that income is a statistically significant factor in litigousness. The two most well known measures of income are money income (MI) and personal income (PI). These two factors differ in that PI includes more benefits such as Medicare assistance and fringe benefits whereas MI does not. For personal income there are three different years of data available: 1990, 1996, and 2001. For MI, data are available only for 1989 and 1999. As a result, 1989 MI data are used for the 1992 and 1996, and 1999 are used for 2001. Both PI and MI are converted to dollars per capita.

Median household income (MHI) is an alternative way to look at income. MHI is the value of money income in the middle household in a county. While this is a valuable measure it is problematic because it does not control for the number of residents in a house. It is calculated in dollars per capita. Like money income, 1989 information is used for both years 1992 and 1996, and 1999 data are used for 2002.

Tax revenue (TAXR) is a factor that looks at income indirectly. TAXR includes personal and business taxes, but does not include Social Security taxes. TAXR has an advantage over other income measures in that it reflects business income, and businesses are often the subject of lawsuits. While values are sensitive to the tax rate, it may also indicate the level of income from individuals and businesses, and perhaps the willingness of a county to redistribute income. TAXR is examined in per capita dollars for the years of 1987, 1992, and 1997.

The number of Social Security beneficiaries (SS) is another factor relevant to income. This statistic may indicate the number of senior citizens and other beneficiaries in a county and their willingness to sue. For example, if senior citizens are provided with significant Social Security benefits and an incident occurs where they could sue, they may not see suing as worth the trouble. Litigants could also see Social Security benefits as a target or perhaps a reason not to sue. SS is examined by looking at the number of beneficiaries per capita for 1990, 1997, and 2002.

Miceli and Sergerson (1995) focuses on how knowledge of the wealth of the parties in a suit can affect the monetary findings of a case. While relevant, the direction of the impact is hard to predict. Initially it would appear that the poor sue more than the rich because of the possibility of greater awards. However, on re-examination there is the possibility that the poor may not have the money to file a suit or have a suit that takes a long time because of the expense it would incur. In the U.S. court system, the impoverished are provided an attorney free of charge, but only for criminal defense. To measure poverty and wealth disparity, this study examines both number of people with money income below poverty (POOR) and number of individuals above a certain threshold (RICH). For POOR the study uses the number of persons below the poverty line per hundred population in 1989, 1995, and 1999. For RICH, all the information for the different years is calculated in number of persons above the income threshold per 100 population. The County and City Data Book (1994) sets the threshold for 1989 at 75,000 dollars or more income, and this is used for the 1992 data set. However, the 1999 County and City Extra and the 2004 County and City Extra sets the threshold at 100,000 dollars or more income for the 1996 and 2001 sample.

Federal Funds and grants (FGNT) measures federal expenditures on counties. Grants are federal obligations that are awarded to the states, and then the states distribute the monetary awards to the counties. They range from grants for child welfare to education grants for adult education. It would seem that the more federal grants a county receives the worse off the county is. Therefore, people in a county with a large amount of federal grants would seem more likely to sue as Miceli and Sergerson (1995) and Tabarrok and Hellend (1999) suggest. FGNT is looked at in total of millions of dollars per capita expended for the years of 1992, 1997, and 2002.

Unemployment (UNPL) is a factor that Lee, Browne, and Schmitt (1994) finds to be significant in all three of the regressions that are run. Specifically, it is hypothesized that people who are unemployed are more prone to sue since they have no other source of income. UNPL may also indicate the distribution of income in a county, a factor that Lee, Browne, and Schmit (1994) propose might be important. On the other hand, a high UNPL may indicate fewer funds that can be appropriated by a lawsuit. The Census Bureau reports the number of unemployed workers in each county. The variable UNPL converts the raw figures to the number of unemployment per population aged 18 to 64 years.

The final measure of wealth is owner-occupied median value (HSVAL). This variable is compiled from a survey, where owners provide estimates of their house. Even though there is a question of how accurate the statistics are, it is still a well-known indicator of wealth and perhaps indicates a motivation to sue. If HSVAL in a county is high, potential litigants might deduce that these households are wealthy. This situation could lead to people in a county with a high HSVAL becoming targets for lawsuits as Miceli and Sergerson (1995) suggests. HSVAL is calculated in dollars for 1990 and 2000. This study uses 1990 data for both 1992 and 1996 and 2000 data for 2001.

Social Factors

The social factors category is the next division in this study. This grouping consists of social factors that have economic implications. The list includes race and ethnicity, varying age groupings, crime rates, and education attainment level.

Race and ethnicity is a typical social factor that is normally controlled for in studies. This study categorizes race as White (RW), Black (RB), American Indian (RI), Asian (RA), and Hispanic. For the sample years of 1996 and 2001 information is acquired from the years 1997 and 2002.

Age is another factor that few of the previous papers examine, but may be relevant to litigousness. For example, if a county has an extremely large population of youth, then possibly a father or mother who becomes injured may feel compelled to sue to receive monetary support. On the other hand, a county with a high number of senior citizens may not have this concern or may already be receiving compensation from other areas. Another reason age is important is that youth and elderly are more prone to accident and injury. The age variables are broken up into various sections for statistical purposes. For instance, age under 5 means children from birth to the age of 5. Age is divided into the number in each county at age under 5 (AGEU5), age from 18 to 24 (AGE18_24), age from 25 to 34 (AGE25), and age between 65 and over (AGE065). Age is listed by number of persons of each age per 100 population for all data sources. The closest years to 1992, 1996, and 2002 are 1990, 1997, and 2002 respectively.

Crime (CRM) and violent crime (CRMV) are factors that neither Posner (1997) nor Lee, Browne, and Schmitt (1994) use. However, lawsuits are sometimes based on crimes since tort suits cover not only accidental incidents, but also intentional incidents. Crime rates may also indicate poverty, which in turn may influence the decision to sue, as discussed earlier. Previous papers may not have looked at CRM and CRMV since those studies have been looking at broader geographic areas. For example, when using state-level data, a high crime rate for one county might not be fully reflected in state data making crime not seem an important factor. CRM consists of burglary, larceny-theft, and motor vehicle theft that are reported. CRMV includes murder and non-negligent manslaughter, forcible rape, robbery, and aggravated assault. For CRM the data are provided in number of persons per 100,000 population for the years of 1991, 1996, and 2001. For CRMV the County and City Data Book (1994) provides the information in number of persons, but the County and City Extra for 1999 and 2004 provides the number of persons per 100,000 population. The 1991 information is converted for violent crime to number of persons per 100,000 population.

Posner (1997) finds education as a highly significant predictor of tort suits. Education appears to play an important part in the amount of damages that are awarded in cases. For instance, Posner (1997) suggests, a juror with a higher education is believed to have more knowledge of the legal system and be more conscious when making a decision concerning the amount of monetary awards. In addition, damages for lost wages are often higher for a person with more earnings. Below, education is measured at two levels: high school education (EDHS) and college education (EDCOL). EDHS is classified as the number of people 25 years or older that have a high school diploma or have passed a high school equivalency examination per 100 population. EDCOL counts anyone 25 years or older who has obtained a college degree per 100 population. Unfortunately data provided for education on counties occur only every decade. Therefore, for 1992 and 1996 the same data are used, which is from 1990. For 2002 information comes from 2000.

In a regression, Browne and Puelz (1999) control for the gender of the claimant, but shows that it is not statistically significant. Posner (1997), on the other hand, discovers male-female ratio to be statistically significant and concludes that women are more likely to sue than men. It is common to control for gender, and this paper will also do so. For 1992 data are provided as males per 100 female population, denoted as the variable MALE. For the 1996 and 2001 samples, 1997 and 2002 data are used to calculate the number of females per 100 population, denoted as the variable FEM.

The final social variable is persons per household (PPHOME). PPHOME could present an incentive to sue because if there are a large number of people living in one household that will be a burden on the family income, which could cause people to be eager to sue if they have the opportunity. Data for PPHOME are not available for 1994. However, data on PPHOME are found for 1990 and 2000 and used for the years of 1992 and 1996. PPHOME is measured by the average number of people per household.

Incident Indicators

There are a number of variables that indicate the number of incidents that might cause people to file suit. These factors include the number of deaths, number health professionals, number of vehicles, insurance laws, urbanization, number of lawyers, political factors, and regional effects.

Many tort suits are filed over automobile accidents or medical malpractice - essentially accidents that involve death. This information follows with Posner (1997) who finds accidental death to be statistically significant in an initial regression that includes regional variables. Below, accidental death is calculated by number of accidental deaths per 1,000 population for the years of 1999, 2000, and 2002. These data are collected from various state websites.[7]

Lee, Browne, and Schmitt (1994) uses the number of surgical operations, which coefficient is significant and negative in two out of three of the regressions. While the data for number of surgical operations are not available by county, the number of physicians are. Therefore, this study employs the number of physicians (DOCS). Interestingly, DOCS may impact the number of suits either way. First, because many suits are medical malpractice suits, the number of physicians may impact the number of suits. Aside from a large number of physicians leading to more payment interactions, a large number of physicians may provide more opportunities for second opinions. On the other hand, a strong medical infrastructure may limit the seriousness of injuries. DOCS is calculated using data for 1990, 1993, and 2000 as physicians per 1,000 resident population.

Travel time to work (TRAV) is another causal factor Lee, Browne, and Schmitt (1994) uses. Although, Lee, Browne, and Schmitt (1994) does not find the number of vehicle miles of travel per mile of roadway to be a significant factor, TRAV may be important when examining the information at a county level. Additionally, this study collects data on vehicle availability (CARS). If a person has more accessibility to a car and a longer drive it is logical to assume that they would have more opportunities to cause or be in accidents. Unfortunately, CARS and TRAV data are only available for

[7] For accidental death all the websites used are listed by the department of health for the state. There were a few states that department of health did not provide county level data on accidental death so the Center for Disease Control (CDC) website, which is also listed in the references section is used for those states. The states that are covered by the CDC website are Arizona, Florida, Kentucky, Michigan, Missouri, New Jersey, and Texas. (See References for Accidental Death Websites)

1990. CARS is measured in vehicle availability per household, and TRAV is calculated by average travel time to work in minutes.

Both Posner (1997) and Lee, Browne, and Schmitt (1994) examine insurance in some manner. Posner (1997) examines insurance coverage while Lee, Browne, and Schmitt (1994) looks at the existence of no-fault auto law; laws are determined by the states and not on a county level. No-fault laws require the insurance companies to pay for their own clients' minor injuries no matter whose fault the accident is; the purpose of no-fault laws is to avoid the expenses associated with going to court.[8] The existence of no-fault laws may not play an enormous factor in total number of tort suits filed because automobile accidents only make up a portion of tort suits. In addition, states with large numbers of suits may have an incentive to pass no-fault laws, so the sign on the no-fault law coefficient may not solely reflect the impact of the law. However, it could certainly appear to have an effect on tort suits filed due to automobile accidents. To capture these effects, the NFLT dummy variable is formed where if a state has any form of the traditional tort liability system then it equals 0; if it has a no-fault law, it is set equal to 1. NFLT information is provided by the Insurance Information Institute (2005).

Posner (1997) and others suggest that urbanization and population density reflect the number of interactions between people, which may in turn reflect the number of incidents pursued in lawsuits. However, the data set in this paper consists entirely of large counties, so such statistics are likely to be of little use. The number of retail establishments (SHOPS) seems the closest indicator of personal interactions. SHOPS is calculated in sales of dollars per capita in retail establishments for 1992 and is based on

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[8] Insurance Information Institute (2005).

1987 data. For 1996 and 2002, SHOPS is calculated as sales of dollars per capita in retail establishments in 1992 and 1997.

Three different papers all employ a variable that reflects the number of lawyers. Posner (1997) discovers number of lawyers in the population to not have a significant impact, but Lee, Browne, and Schmit (1994) finds in one regression that the coefficient for the number of lawyers is statistically significant. Browne and Puelz (1999) also shows attorneys involvement to be statistically significant. However, it is important to note that Posner (1997) discovers the bi-causality concern with the number of lawyers. Posner (1997) is never confident if the number of lawyers causes an increase in the number of torts suits filed or vice versa. Therefore, the results of LWOF have to be examined with caution. Because the number of lawyers is not available at the county level, the number of law offices must be used (LWOF). LWOF is calculated as number of law offices per 1,000 population for 1998 and 2003. Unfortunately, there are no data available to use for 1992. The information for LWOF is provided by the U.S. Census Bureau (1998 and 2003).

Another possible explanatory factor is the percent of votes during the presidential elections. This variable stems from Tabarrok and Hellend (1999) since the paper stipulates that elections can play a factor in decisions in courts. (DVOTE) is the democrat share of the combined democrat and republican presidential vote total to control for 3rd party candidates. DVOTE is used to tell if political leaning affects the number of lawsuits filed. The data are calculated in the same manner for all the years, which is the percent of votes cast multiplied by 100. The years of 1992 and 1996 correspond with presidential election years. For 2002, data from the election of 2000 are used.

The final control variables are the regions of the United States. Posner (1997) used dummy regions in his paper as well. Posner (1997) finds some of the regional variables to be statistically significant and concludes that the South is the least likely to sue. This study breaks up the regions into dummy variables of Northeast (NE), Southeast (SE), Midwest (MW), South (S), and West (W). The regional variables are important to see if possibly different parts of the country are simply more litigious than others. (See Appendix for List of Regions)

IV. Results

OLS is used to estimate regression coefficients for equation (1) for the two samples. White heteroskedasticity- robust standard errors are all used for both samples. Results for the large 1996 and 2001 sample are presented first. A central issue is to determine which of the economic, social, and incident variables should be included in the model. This is a difficult problem to resolve because many of the variables are highly correlated with each other. (See Appendix for Correlation Matrix)

The initial process to determine the appropriate variables for the regression begins by using those employed by Posner (1997) and Lee, Browne, and Schmit (1994). At first, regressions are run on the county level data that corresponds with Posner (1997).[9] Then, other regressions are run using data focusing on the additional variables Lee, Browne, and & Schmit (1994) and others suggest.[10] Finally, variables not considered in

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[9] The variables that correspond with what Posner uses: MI, PI, MHI, TAXR, AGEU5, AGE17, AGE18_24, AGE25, AGE65, AGE065, AGE075, EDHS, EDCOL, DTHA, SHOPS, LWOF, S, SE, NE, and W.
[10] The variables suggested by Lee, Browne, and Schmit (1994): UNPL, DOCS, TRAV, CARS, and NFLT. Variables discussed in other papers: POOR, RICH, CRM, CRMV, FEM, DEM, REP, IND, and DVOTE.

other papers are included in the model.[11] The results of these preliminary regressions are not reported.

The ultimate decision to include a variable is based on a number of criteria. First, to assess the potential of multicollinearity problems, the correlation matrix of variables is analyzed. Then this study proceeds to look at the impact of a variable on R-squared and adjusted R-squared values. The next step is to analyze the size and statistical significance of the variable's coefficient. To again address multicollinearity, the impact of the inclusion of a variable on the other variables is assessed. For instance, POOR and CRM are very highly correlated and likely to reflect the same information. Each variable is tested separately to see which variable has the strongest impact on R-squared and has the most statistical significant coefficient. In this case CRM, is left out and only POOR is used in the regression. Below is a description from each category of economic, social, and incident factors as to which variables are selected.

For the economic category, there can only be a select number of income variables when multiple options for measuring income are available on county level data. For example, out of the money income (MI), personal income (PI), median household income (MHI), and tax revenue (TAXR) it is appropriate to use only one variable because they are all highly correlated and reflect the same basic information about income. Although this study recognizes this technique does not completely avoid multicollinearity, the effects are minimized. In the end, TAXR proves to be the best choice of the four variables based on the above criteria. To measure income disparity, UNPL and POOR prove to be superior to SS, FGNT, RICH, and HSVAL. The variables that are not

[11] Variables not considered in other papers: SS, FGNT, HSVAL, RW, RB, RN, RA, and RH.

selected are too highly correlated with other factors being used or do not add significant information.

The social factors that are selected for this study are relatively simple to choose. For race, all the different races have been tested. All coefficients for race variables prove to be not significant and not that different from each other. Therefore, the people who report their race as white (RW) is selected. Posner (1997) only examines age in terms of percent under 25 years of age. In this study, age 18 to 24 (AGE18_24) and age 65 and over (AGE065) are used. These two age groups are selected for theoretical reasons. The age bracket from 18 to 24 is usually when automobile insurance is the most expensive because this age is when people have the most automobile accidents. The age over 65 appears important because as mentioned earlier, senior citizens are more prone to hurt themselves or be in accidents. Also, since this study does not use Social Security beneficiaries (SS), using AGE065 is another way to examine senior citizens. Crime (CRM) and violent crime (CRMV) are not used because they are too highly correlated with money income below poverty (POOR), which is used in the economic section. The remaining social variables are used, which are the levels of high school (EDHS), college education (EDCOL), number of females (FEM), and males (MALE) in each county.

Almost all of the variables in the incident category are included because theory suggests that they need to be included. The only variable that is not included in the regression is DOCS. DOCS is not included because after examining it in the regression, the coefficient for DOCS is not significant, does not have a large impact on tort suits filed, and causes the adjusted R-squared value to decrease. In addition, it is highly correlated with accidental death (DTHA) and so it likely reflects the same information. All other incident variables are used including DTHA, the existence of no-fault auto insurance (NFLT), sales at retail establishments (SHOPS), number of law offices (LWOF), and percent democratic vote (DVOTE).[12]

1996/ 2001 Regression Results

Table 2 displays the regression results of the final set of variables. The results are separated into the categories of economic, social, and incident factors. Before examining the results, it is important to remember that the 1996/2001 data show the impact on tort trials while the 1992 data reflect on tort cases.

[12] In the 1992 regression analysis, the number of vehicles per household (CARS) will also be included.

TABLE 2: 1996/2001 Regression (Full Sample)

Variable	Coefficient (Std. Error)	Variable	Coefficient (Std. Error)
C	-30.50	DTHA	33.09**
	(65.78)		(13.09)
TAXR	0.005***	NFLT	5.41*
	(0.003)		(1.59)
UNPL	0.30	SHOPS	-0.0008
	(0.48)		(0.0006)
POOR	-0.33	LWOF	2.97**
	(0.39)		(1.44)
RW	0.05	DVOTE	-0.09
	(0.06)		(0.11)
AGE18_24	-0.03	S	-1.73
	(0.85)		(3.30)
AGE065	-0.24	SE	-3.70
	(0.48)		(3.17)
EDCOL	0.18	NE	-3.29
	(0.16)		(2.46)
EDHS	-0.22	W	-1.99
	(0.28)		(2.24)
FEM	0.99		
	(1.20)		

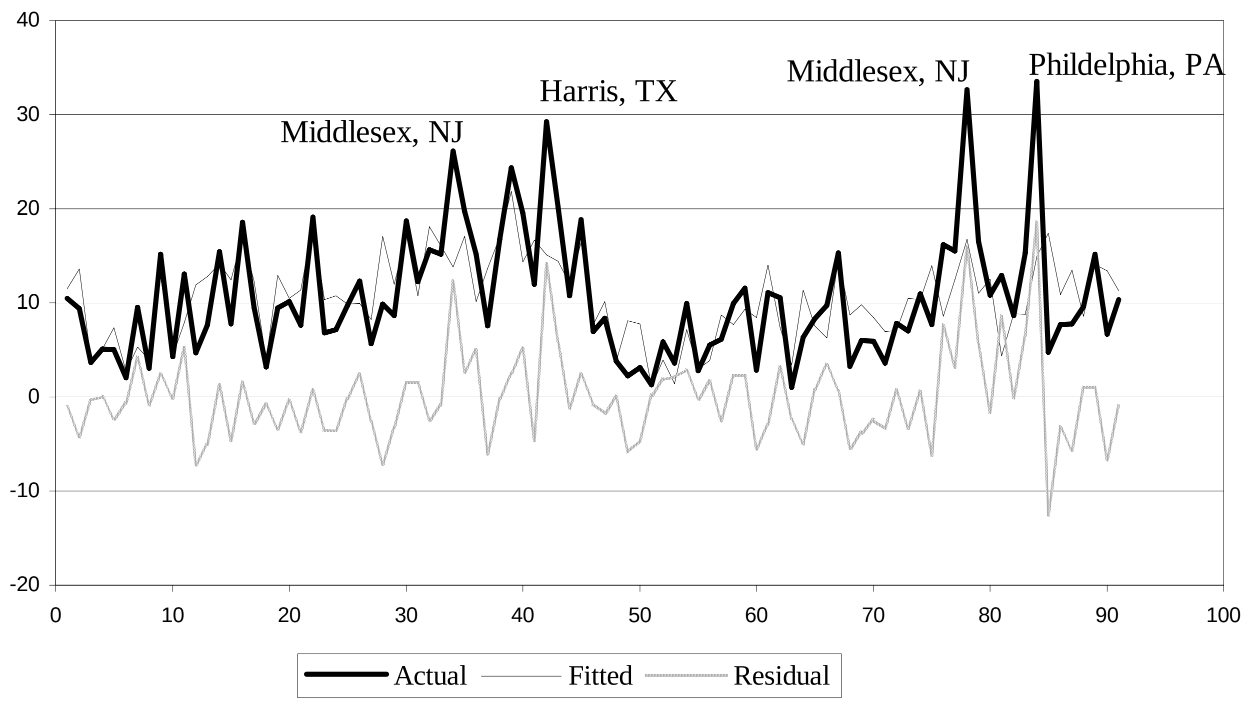
R-squared	0.44
Adjusted R-squared	0.30
Mean of dependent variable	10.53
F-statistic	3.19*

*** Significant at 90% level
** Significant at 95% level
* Significant at 99% level

It is surprising to discover that the regression only explains 44 percent of the variation in the dependent variable over the mean in the sample. This contrasts with

Posner (1997) whose results explain approximately 77 percent of the variation. An examination of the residuals reveals that there are four large outliers in the regression. The four outliers include Middlesex, NJ for both 1996 and 2001, Harris, TX in 1996, and Philadelphia, PA in 2001. These observations have the most extreme number of tort cases filed and the largest residuals as shown in Figure 1.

Figure 1: 1996/2001 Residual Graph



Consequently, the model is re-estimated without these observations. Further investigations have been conducted into these four outliers, and explanations have been discovered to account for why a large number of suits were filed for all three of these counties.

In Texas, in 1995 the Texas Legislature passed numerous tort reforms bills. These bills had far reaching consequences, but probably the two biggest changes that would cause the filing of tort suits to increase drastically are that punitive damages would be limited and boundaries would be placed on venue shopping.[13] Harris County, Texas is located in the city of Houston, which is one of the biggest cities in the nation. Although the bills passed in 1995, they did not go into affect until September 1, 1996.[14] Consequently, for almost a half a year people had the opportunity to file as many suits as possible before the deadline, which accounts for the significant increase in tort suits in Harris County, TX.

Middlesex, NJ, along with other counties in NJ, continually appears to be very litigious. However, after investigation the reason behind this anomaly is that in the state of New Jersey mass tort suits are assigned to three specific counties Middlesex, Bergen, and Atlantic. A mass tort is defined by three factors: large claims linked with a single product, close connection of factual and legal issues, and value interdependence between claims.[15] This information alone can help to explain why Middlesex, NJ appears to be an extremely litigious county for all three years examined. (Bergen, NJ also appears later in Table 7 and 8 as a Most Litigious County). In 2001, the number of cases in Middlesex may be considered especially large because on September 17,2001 the Supreme Court directed all future litigation concerning PPA (Phenylopropanolamine) to only Middlesex, NJ, which resulted in approximately forty six more mass tort cases. Consequently, because of New Jersey's system of designating which counties receive what mass tort cases, this can explain why Middlesex was an outlier.[16]

Philadelphia, PA is the final county that proves to be an outlier in the 1996/2001 regression. Philadelphia in 2001 appears to have the same situation that Texas experienced in 1996. The Philadelphia legislature passed three tort reform bills that

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[13] American Tort Reform Association (2006)
[14] Thomas (1996).
[15] As defined by the New Jersey Judiciary (2001).
[16] New Jersey Judiciary (2001).

aimed at making the court system fairer and more predictable. The tort reform measures went into affect on August 19, 2002, which means that people tried to file as many suits as possible before the deadline causing the significant increase in tort suits.[17]

Consequently, after factoring in the information about these three counties it makes sense to re-estimate the regression without the outliers. Table 3 displays the results.

[17] Miami Daily Business Review (2003).

Table 3: 1996/2001 Regression without Outliers

Variable	Coefficient (Std. Error)	Variable	Coefficient (Std. Error)
C	-56.67	DTHA	20.23**
	(52.26)		(8.45)
TAXR	0.002	NFLT	3.29*
	(0.0018)		(1.16)
UNPL	0.18	SHOPS	-0.00009
	(0.37)		(0.0005)
POOR	-0.33	LWOF	2.86*
	(0.23)		(1.11)
RW	0.06	DVOTE	-0.03
	(0.04)		(0.07)
AGE18_24	-0.04	S	0.30
	(0.48)		(2.54)
AGE065	-0.12	SE	-1.15
	(0.26)		(2.39)
EDCOL	0.21	NE	-4.11**
	(0.14)		(1.73)
EDHS	-0.35***	W	-0.99
	(0.19)		(1.99)
FEM	1.60		
	(0.99)		

R-squared	0.54
Adjusted R-squared	0.42
Mean of dependent variable	9.62
F-statistic	4.48*

*** Significant at 90% level
** Significant at 95% level
* Significant at 99% level

By eliminating the four outliers, the model now explains 54 percent of the variance in torts suits over the mean, which is a much larger portion. In addition, more variables are significant. Table 3 shows the marginal effects of the various variables, but it is also important to examine the overall impact of each variables. Table 4 shows the effect of the mean value and the standard deviation of each variable on tort suits. The results are described below.

Table 4: 1996/2001 Impact of Variables

Variables	μ_i	σ_i	β	$\beta_i x \mu_i$	$\beta_i x \sigma_i$
Torts	10.53	6.65			
Economic					
TAXR	1220.90	422.40	0.002	2.44	0.84
UNPL	4.44	1.59	0.18	0.81	0.29
POOR	12.44	5.40	-0.33	-4.12	-1.79
Social					
RW	67.37	18.87	0.06	3.90	1.09
AGE18_24	9.11	1.34	-0.04	-0.35	-0.05
AGE065	12.12	2.90	-0.12	-1.46	-0.35
EDHS	80.03	6.43	-0.35*	-28.02	-2.25
EDCOL	28.84	8.43	0.21	6.05	1.77
FEM	51.24	1.00	1.60	82.11	1.60
Incidents					
DTHA	0.30	0.08	20.23*	6.07	1.62
NFLT	0.55	0.50	3.29*	1.81	1.65
SHOPS	9021.71	1929.66	-0.00009	-0.81	-0.17
LWOF	0.48	0.52	2.86*	1.37	1.49
DVOTE	59.54	11.14	-0.03	-2.03	-0.38
S	0.12	0.33	0.30	0.04	0.10
SE	0.12	0.33	-1.15	-0.14	-0.38
NE	0.24	0.43	-4.12*	-0.99	-1.77
W	0.24	0.43	-0.99	-0.24	-0.42
MW	0.28	0.45			
* Significant at 90% level or higher					

<u>Economic Factors</u>

The coefficient for TAXR proves not to be statistically significant (p-value = 0.29). In terms of magnitude, every time TAXR increases by one dollar per capita that results in approximately 1 extra trial per 100,000,000 population. For a county with average TAXR, 2.4 trials are attributed to TAXR and a one standard deviation increase in TAXR result in 0.83 more tort suits. As a result, a strong conclusion cannot be made about the impact of income on tort suits: the magnitude of the impact appears to be considerable, but there is low confidence in this estimate.

The coefficient for UNPL is an economic factor that Lee, Browne, and Schmitt (1994) finds to be both positive and statistically significant. However, in this study, the coefficient for UNPL, while positive, is not statistically significant (p-value = 0.63). In this instance, every one extra-unemployed person per capita results in 1.8 tort suits filed per 10,000 population. In a county with an average UNPL, 0.81 cases are attributable to UNPL. A one standard deviation increase in UNPL would cause approximately 0.3 more tort suits filed. Therefore, UNPL does not appear on the county level to explain the number of tort suits filings at all, as it does for Lee, Browne, and Schmitt (1994).

The final economic factor this study examines is POOR. The coefficient for POOR is negative but not statistically significant. For every person per capita whose money income is below the poverty level there is a decrease of 3.3 tort suits filed per 10,000 population. The p-value for POOR is 0.15, which means that coefficient for POOR is around the 85% significance level. For a county with an average money income below poverty, 4.12 fewer suits are attributed to POOR. A one standard deviation increase in POOR would results in 1.8 fewer tort suits. Looking at the results as a whole, these results suggest that poverty should not be overlooked as a factor impacting tort suits. The coefficient for POOR is close to being statistically significant and when looking at the average county POOR has a substantial effect on tort suits. This suggests that higher poverty equates with fewer tort suits, not more, as Tabarrok and Hellend (1999) surmises.

Social Factors

Race is the first social factor to explore. The coefficient for RW pertaining to county level data is positive and not statistically significant. For each percentage point increase in the number of Caucasians there is an increase of 5.7 tort suits per 100,000 population. Yet, it is noteworthy to mention that the p-value for RW is .14, which means that at the 85% level the coefficient for RW is statistically significant. Concerning a county with average RW, 3.9 cases can be attributed to RW. A one standard deviation increase in RW would results in 1.09 more tort suits. Therefore, when examining the marginal effect the coefficient for RW is close to being statistically significant, and when examining the average county RW has a considerable impact.

Age is the next social factor to examine. Both coefficients for AGE18_24 and AGEO65 prove to be not statistically significant and negative. These results are surprising because it would first seem that the age brackets that are selected for this study would have statistical significance; secondly, the results for these age brackets would be expected to increase the number of torts suits filed not decrease. In fact, the coefficient on AGE18_24 has a p-value of 0.93, which essentially means it is zero. Age for both categories also has a trivial effect when examining average county and a one standard deviation change.

Education plays an important role in Posner (1997) both in its large explanatory ability as well as its statistical significance in the study. However, Posner (1997) used only one measurement for education while this study looks at two different levels of education: high school and college. Table 3 shows, the coefficient for EDHS is statistically significant at the 90% confidence level while the coefficient for EDCOL is at only the 85% significance level. Interestingly, the two education variables differ because the coefficient for EDHS is negative while the coefficient for EDCOL is positive. Posner (1997) suggests that education should have a negative coefficient, reflecting the theory that more highly educated people file fewer suits. Yet, the results show EDCOL has a positive coefficient. For every additional high school educated person per capita the number of tort suits decreases by 3.5 tort suits filed per 10,000 population. For a county with average EDHS, 28 fewer tort suits filings are attributed to EDHS. A one standard deviation increase in EDHS would results in 2.25 fewer cases. For every one additional college educated person per capita there is an increase of 2.1 tort suits filed per 10,000 population. When looking at a county with average EDCOL, 6 tort suits are attributed to EDCOL. A one standard deviation increase in EDCOL creates 1.8 more tort suits filed. Consequently, like Posner (1997), education does have a large impact on the number of tort suits filed. The results on a county level are especially interesting because EDHS has more of an impact than EDCOL; in addition, the signs conflict.

The final social factor that is examined is the number of women (FEM). Browne and Puelz (1999), finds the coefficient for gender to not be statistically significant. However, Table 3 shows completely different results. The p-value on FEM is 0.11. Therefore, this means that FEM is significant at approximately the 89% significance level. Gender in this case has a positive coefficient, and for each percentage point increase in the number of females an increase of 1.6 tort suits occurs per 1,000 population. When examining a county with average FEM, 82 cases are attributed to FEM. This result is an extremely large number in comparison to the dependent variable, which only has a mean of 9.6. A one standard deviation increase results in 1.6 more tort suits filed. Consequently, FEM plays a major role in determining the number of tort suits filed. These results concur with Posner (1997) who finds the coefficient for gender to be statistically significant and negative, which means that women are more likely to sue than men.

Incident Indicators

DTHA is statistically significant and positive. In fact, it appears that about 1 out of 5 accidental deaths results in a tort suit. This result agrees with one of Posner's (1997) initial regressions that finds the impact of accidental death to be statistically significant and positive. Concerning a county with average DTHA, 6.07 tort suits filings can be accredited to DTHA. If DTHA increases by one standard deviation, 1.6 more tort suit filings result. Therefore, whether looking at the statistical significance or focusing on the average county, DTHA has a substantial effect on the number of tort suits filed.

NFLT is also positive and significant. For a state that has no fault insurance there is an increase of 3.29 tort suits filed per 100,000 population. These results are extremely interesting because they are not in keeping with Lee, Browne, and Schmit (1994) since that study finds NFLT to not be significant. However, this study has not looked at endogenity. Therefore, this paper cannot specifically speak of NFLT at all because this study does not sample from all fifty states. Possibly the explanation for the result is that states with no fault auto insurance have high levels of tort suits, after controlling for other factors.

SHOPS is the closest approximation for urbanization and population density factors, that both Posner (1997) and Lee, Browne, and Schmitt (1994) find pivotal. Unfortunately, either SHOPS does not represent urbanization and population density well or SHOPS is not relevant on a county level because the coefficient for SHOPS is not statistically significant. In fact, SHOPS is essentially zero when looking at its p-value of .85.

LWOF shows interesting results compared to previous papers. Posner (1997) does not find number of lawyers to be an important variable while Lee, Browne, and Schmitt (1994) in one of the regression results discovers the coefficient for number of lawyers to be negative and statistically significant. However, Browne and Puelz (1999) completely agrees with this study's results and finds the coefficient for attorney to be statistically significant and positive. It is important to note that all three prior papers focus on the number of lawyers whereas this study looks at the number of law offices. Possibly, this slight difference in the way of examining the variable makes a difference. In this study, for every additional law office per capita there is an increase in tort suits by 2.86 per 100 population. For a county with average LWOF, 1.4 cases are attributed to LWOF. An increase of one standard deviation causes 1.5 more tort suits filed. The results show that LWOF should not go unnoticed. The coefficient for LWOF is statistically significant and when looking at the average county LWOF has a considerable effect on tort suits.

DVOTE is a variable that is not used in previous studies, but appears an innovative way to examine political orientation as a factor in determining the number of tort suits filed. Interestingly, DVOTE is not statistically significant with a p-value of 0.64. For every additional person who votes democratic during a presidential election there is a decrease of 3 tort suits filed per 10,000 population. Concerning a county with average DVOTE, 2 fewer cases are attributed to DVOTE. A one standard deviation change in DVOTE would result in 0.4 fewer cases. However, there is very little confidence in these estimates given the low level of statistical significance.

Finally, regional variables are also examined. It is important to remember that in interpreting these coefficients, values reflect number of lawsuits relative to the dropped category, the Midwest (MW). The Northeast (NE) is the only region that is statistically significant with a p-value of 0.02, but with a negative t-statistic. This suggests that the Northeast is less likely to file suit, which is not consistent with Posner's (1997) conclusions. Posner (1997) finds the South (S) to be statistically significant and the least litigious of the counties. A possible explanation for these opposite results could be that the 1996/2001 regression looks at tort trials rather than tort cases. Therefore, the Northeast may file a large amount of cases, but simply not as many cases actually end up going to trial. There may be more settlements in the Northeast or more frivolous cases that end up being thrown out before trial. Possibly more years of data could help solve this question. Ultimately, this study shows that regional variables do appear in some way to make a difference in the number of tort suits filed.

Summary of 1996/ 2001 Regression without Outliers

The most surprising result from examining the 1996 and 2001 regression results is FEM. FEM not only has statistical significance, but also when examining the average county 82 more cases is an extremely large number. EDHS also proves to have very interesting results; EDHS has the unexpected result of actually decreasing the number of tort suits filed, which seems to contradict previous paper. The regional variable NE proves to have a statistically significant impact on tort suits. Yet, instead of a positive coefficient as expected the results show the NE files less suits than the other regions. TAXR, POOR, RW, EDCOL, DTHA, NFLT, and LWOF also show they are relevant. On the other end of the spectrum, the selected age brackets that are thought to have been important prove not be.

1992 Regression Results

After examining 1996 and 2001 data, this paper now turns to the 1992 sample. It is important to remember that 1992 differs from 1996 and 2001 because of the dependent variable. For 1992 this study focuses on the number of tort cases whereas 1996 and 2001 examine the number of tort trials. Despite these differences, it is interesting to determine if the same coefficients are significant, the same or any outliers exist, and also variables that are available for 1992 and not available for 1996 and 2001 make a difference.

Ultimately, this study has kept most of the same variables for the 1992 period as those used in the 1996 and 2001 sample. While this is desirable for comparison reasons, these variables met the same criteria as for the 1996 and 2001 sample. The only differences between the samples are LWOF data are not available for 1992, but CARS data are.[18] Results are presented in Table 5.

[18] CARS is not available for 1996 and 2001.

Table 5: 1992 Regression

Variable	Coefficient (Std. Error)	Variable	Coefficient (Std. Error)
C	15.04	DTHA	160.20**
	(298.04)		(72.01)
TAXR	0.07**	CARS	23.14
	(0.03)		(35.27)
UNPL	-2.82	NFLT	7.76
	(4.34)		(10.49)
POOR	0.31	SHOPS	-0.02*
	(2.43)		(0.01)
RW	-0.83	DVOTE	-2.18**
	(0.63)		(0.89)
AGE18_24	6.25	S	-44.10**
	(4.82)		(16.70)
AGE065	4.36*	SE	-18.22
	(2.43)		(16.05)
EDCOL	1.28	NE	62.72*
	(1.38)		(17.24)
EDHS	0.72	W	2.82
	(1.70)		(22.58)
MALE	0.02		
	(2.56)		

R-squared	0.73
Adjusted R-squared	0.54
Mean of dependent variable	44.61
F-statistic	3.91*

*** Significant at 90% level
** Significant at 95% level
* Significant at 99% level

After examining the residual chart, it appears there are no significant outliers that need to be removed. The regression explains 73 percent of the variation over the mean, which is very close to the Posner (1997) R-squared value.

Once again while marginal effects are presented in Table 5, Table 6 shows the impact of the average and standard deviation values of the variables on the number of tort suit filings. Rather than detail results of all of the variables, the discussion below focuses on the differences from the larger sample.

Table 6: 1992 Impact of Variables

Variables	μ_i	σ_i	β	$\beta_i x \mu_i$	$\beta_i x \sigma_i$
Torts	44.61	35.61			
Economic					
TAXR	789.31	241.48	0.07*	53.39	16.34
UNPL	5.20	1.51	-2.82	-14.64	-4.25
POOR	11.08	5.02	0.31	3.41	1.55
Social					
RW	73.01	14.05	-0.83	-60.92	-11.72
AGE18_24	10.81	1.46	6.25	67.61	9.13
AGE065	12.04	3.00	4.36*	52.52	13.09
EDHS	78.46	6.17	0.72	56.31	4.43
EDCOL	25.80	7.21	1.28	32.90	9.19
MALE	94.60	4.29	0.02	1.96	0.09
Incidents					
DTHA	0.31	0.09	160.21*	49.66	14.42
CARS	1.59	0.33	23.14	36.80	7.64
NFLT	0.56	0.50	7.76	4.34	3.88
SHOPS	7444.82	1286.22	-0.02*	-137.80	-23.81
DVOTE	57.73	10.31	-2.18*	-125.70	-22.45
S	0.11	0.32	-44.10*	-4.85	-14.11
SE	0.11	0.32	-18.22	-2.00	-5.83
NE	0.24	0.43	62.73*	15.05	26.97
W	0.24	0.43	2.82	0.68	1.21
MW	0.29	0.46			

* Significant at 90% level or higher

Economic Factors

Contrary to the 1996/2001 results, TAXR is statistically significant. For every additional TAXR dollar per capita there is an increase in tort suits by 6.7 per 10,000,000 population. Concerning a county with average TAXR, 53.4 cases are attributed to TAXR. A one standard deviation increase in TAXR results in 16.3 more cases. Consequently, TAXR is statistically significant, and also has a large impact on the number of tort suits filed in a county.

POOR has a complete reversal from the 1996 and 2001 sample. In the 1996 and 2001 regression, the coefficient for POOR is close to being statistically significant and is negative. In 1992, the coefficient for POOR is positive and more importantly has a p-value of .90, which means it is essentially zero. It appears POOR does not affect the number of tort suits filed.

Social Factors

The coefficient for RW, like in the 1996 and 2001 regression, is still not significant. Yet, it remains close to being statistically significant because the p-value is 0.20. However, contrary to the 1996/2001 results, the coefficient for RW is negative, which means that Caucasians are less likely to file a tort suit. For every additional Caucasian per capita, there is an 8.3 decrease in the amount of tort suits filed per 10,000 population. When studying a county with average RW, 60.9 fewer cases can be attributed to RW. A one standard deviation increase in RW would result in 11.7 less tort cases. Consequently, the coefficient of RW is close to statistical significance and when looking at the average county it does have a considerable effect on the number of tort suits filed.

Age also provides extremely different results compared to 1996 and 2001. In the 1996 and 2001 regression both coefficients for age variables are not significant and negative while AGE18_24 is also practically zero. In the 1992 regression, both coefficients for age are positive and AGE065 is significant. AGE18_24 while still not significant at the 90% significance level has a p-value of .21. In terms of magnitude, for every additional person per capita in the age bracket of 18 to 24, there is an increase of 6.3 tort cases per 1,000 population. Concerning a county with average AGE18_24, 67.6 cases are attributed to AGE18_24, and a one standard deviation increase in AGE18_24 would result in 9.1 more cases. When looking at AGE065, for every additional person per capita in the age group of 65 and older, there is an increase of 4.4 tort filings per 1,000 population. A county with average AGE065 has 52.5 cases that can be accredited to AGE06. A one standard deviation increase in AGE065 causes 13.1 more cases. Consequently, age has a completely opposite impact on tort filings; the age bracket from AGE065 is statistically significant and when looking at the average county both age brackets make a considerable impact.

EDHS also has dramatically different effects from the 1992 sample. Not only is the coefficient for EDHS no longer statistically significant, its p-value drops to 0.68 when in the 1996 and 2001 regression the p-value is 0.07. In addition, the coefficient for EDHS changes from negative in the 1996 and 2001 regression to positive in the 1992 regression. This change in coefficient sign follows with what previous papers predict, yet because of the weak results of EDHS this does not matter much. Education, on the whole, does not have nearly the same importance it did in the 1996 and 2001 regression.

The final social factor to consider is MALE. It is important to remember that MALE in this situation is males per 100 female population, not percent female like in the

1996 and 2001 regression. The coefficient MALE is positive and not significant. Surprisingly, when examining MALE, the p-value is now 0.99, which means the coefficient is essentially zero. Consequently, in this 1992 sample, gender is not a factor of importance concerning the filing of tort suits.

Incident Factors

The coefficient for the new variable CARS is positive, but not statistically significant (p-value 0.52). For every additional car per capita an increase of 2.3 tort suits per 100 population occurs, and a county with average CARS has 36.8 tort cases that are attributed to CARS. When looking at the average county it appears to have a sizable effect on the number of tort suits, but since CARS has a p-value of .52 this study has little confidence in its power as a determinant in tort suits filings.

The coefficient for NFLT changes greatly from the 1996/2001 regression. The coefficient for NFLT is not statistically significant in the 1992 sample. In fact NFLT in the previous regression is listed at the 99% significance level and now it has a p-value of 0.47, which is large change. When looking at the average county the results are also extremely weak compared to the previous regression. NFLT now appears unimportant when examining tort suit filings.

SHOPS has a complete reversal as well. In the 1992 regression SHOPS, is statistically significant at the 99% significance level. This change is one of the largest discrepancies in this entire study. For every additional dollar of retail sales per person per capita a decrease of 1 tort cases filed per 10,000,000 population occurs. A county with average retail sales has 137.8 fewer tort cases than one with no sales. A one standard deviation increase in SHOPS results in 23.8 fewer cases. Consequently, SHOPS does play an extremely large role in determining the number of tort suits filed. This follows Posner (1997) in the fact that urbanization significantly impacts the number of tort suit filings.

DVOTE also provides very interesting results. Not only have the marginal effects changed, but also on the average county level the impact of DVOTE has increased tremendously from the 1996 and 2001 regression. The coefficient DVOTE is negative, but now statistically significant. For every additional person per capita who votes democrat a 2.2 decrease in the number of tort suits per 1,000 population occur. For a county with average DVOTE, 125 fewer cases are attributable to DVOTE. A one standard deviation increase in DVOTE creates 22.45 fewer tort cases. It is surprising to see that the political preference can have such a large impact on the number of tort case filings.

The regional variables present very favorable results in connection to Posner (1997). The South (S) proves to be statistically significant with a P-value equal to 0.01. This means that the South is the least litigious of the other regions, which is exactly what Posner (1997) concludes. The Northeast (NE) also is statistically significant with a P-value of 0.001. Therefore, as Posner (1997) states, the Northeast looks to be the most litigious of the counties. The results for the NE are different from the 1996/2001 regression results because while NE is significant in the 1996/2001 results, the NE coefficient is negative, which means NE causes less suits. Whereas in the 1992 regression, the NE coefficient is positive, which goes along with Posner (1997) and means the NE files more suits. As mentioned earlier a possible explanation for this is that the 1996/2001 regression deals with tort trials while the 1992 regression handles tort cases.

Summary of 1992 Regression

The results that really differ from the 1996/2001 regression are AGE18_24, AGE065, SHOPS, and DVOTE. In addition, SHOPS and DVOTE now appear to play an extremely large part in the number of tort suits filed. DTHA, TAXR, and RW once again prove themselves to be relevant. Regional variables are important to the regression and coincide with Posner's (1997) results; the NE is more litigious than the S. POOR and EDHS prove surprising by having weak results in the 1992 regression. One of the most interesting results of the 1992 regression is the variable FEM, and how its importance changed so drastically from the 1996 and 2001 regression to the 1992 regression.

Most and Least Litigious Counties

Discussion now turns to determining which counties are the most litigious and which are the least. Following Posner (1997), the level of litigiousness is defined by the residual, which is the difference between the actual and expected number of tort trials or filing. The residuals are extremely large in comparison to the average number of suits. For instance, in the 1996/2001 regression the average number of suits is 10.53. However, the most litigious county is nearly two times higher than that average, even after controlling for regional factors. Table 7, 8, and 9 list the results for each sample. The results from the full sample are considered first.

Table 7: 1996/2001 Top 10 Most and Least Litigious Counties (Full Sample)

Most Litigious			Least Litigious		
Counties	Residual (Tort Trials)	Year	Counties	Residual (Tort Trials)	Year
Philadelphia, PA	18.6031	2001	Bexar, TX	-12.6164	2001
Middlesex, NJ	15.9111	2001	Oakland, MI	-7.23934	1996
Harris, TX	14.17	1996	Fairfield, CT	-7.23282	1996
Middlesex, NJ	12.3147	1996	King, WA	-6.73007	2001
Cuyahoga, OH	8.55846	2001	St. Louis, MO	-6.25365	2001
Bergen, NJ	7.64382	2001	Franklin, OH	-6.11132	1996
Allegheny, PA	6.50092	2001	Contra Costa, CA	-5.86111	2001
Fairfax, VA	5.83865	1996	El Paso, TX	-5.7111	2001
New York, NY	5.54435	2001	Orange, FL	-5.57822	2001
Ventura, CA	5.21248	1996	Essex, MA	-5.41733	2001

Table 8: 1996/2001 Top 10 Most and Least Litigious Counties without Outliers

Most Litigious			Least Litigious		
Counties	Residual (Tort Trials)	Year	Counties	Residual (Tort Trials)	Year
New York, NY	9.37568	2001	Bexar, TX	-8.61902	2001
Fairfax, VA	7.85431	1996	Fairfield, CT	-6.64665	1996
Allegheny, PA	6.66551	2001	Oakland, MI	-5.66028	1996
Ventura, CA	6.28048	1996	King, WA	-5.54695	2001
Cuyahoga, OH	6.15414	2001	Orange, FL	-5.16214	2001
Bexar, TX	5.65511	1996	Marion, IN	-4.63371	1996
Bergen, NJ	5.5981	2001	Contra Costa, CA	-4.33194	2001
Philadelphia, PA	5.44518	1996	St. Louis, MO	-4.28024	2001
Essex, NJ	5.34924	2001	Wayne, MI	-4.16401	2001
Milwaukee, WI	4.58426	1996	Orange, FL	-4.11488	1996

As expected, the four most litigious county-years are the outliers in the regression: Philadelphia, PA in 2001, Middlesex, NJ in 1996 and 2001, and Harris, TX in 1996. The rest of the list appears to be an interesting mixture of counties with no specific state with a majority of most litigious or least litigious counties. The 1996 and 2001 regression without outliers provides similar results.

In Table 8, the results are as expected: the three outlier counties are replaced, but the counties are largely the same. There is some swapping in county order between the two lists, but the counties that are most litigious previously are still most litigious now.[19] Concerning the least litigious, a majority of the counties are still the same, but change rankings as well.

Table 9: 1992 Top 10 Most and Least Litigious Counties

Most Litigious		Least Litigious	
Counties	Residual (Tort Cases)	Counties	Residual (Tort Cases)
Suffolk, MA	35.5074	Cook, IL	-37.1243
Middlesex, NJ	33.8937	Middlesex, MA	-35.2919
Essex, NJ	33.7032	Honolulu, HI	-27.9195
San Francisco, CA	32.2422	Hartford, CT	-26.9838
Oakland, MI	24.5426	Orange, CA	-21.937
Cuyahoga, OH	21.5514	Worcester, MA	-20.878
Pima, AZ	17.6774	Harris, TX	-20.6669
Marion, IN	16.2858	Milwaukee, WI	-19.9758
Orange, FL	16.1233	Maricopa, AZ	-16.8766
Ventura, CA	14.4562	Allegheny, PA	-16.1135

When examining Table 9 in comparison with the other two tables, it is interesting to note that Cuyahoga, OH and Ventura, CA are listed in all three tables as one of the most litigious cities. Along the same lines, when Middlesex, NJ is permitted in the tables, it is always one of the most litigious counties. This result concurs with the earlier information that New Jersey designates certain mass tort cases to Middlesex, NJ. Essex, NJ also appears to be most litigious in two of the lists, but not in the list with outliers; however, when referring back to the list in its entirety Essex, NJ barely misses since it is ranked 16 on the list. There are also some peculiarities when looking at Table 9.

[19] It is important to also note that the data on New York, NY include all boroughs in New York city, which is why it is at the top of the list for most litigious.

Suffolk, MA is listed as the most litigious county for 1992, but then does not appear in either 1996/2001 tables. Also Oakland, MI for 1992 appears in the most litigious list, but then for both 1996/2001 tables it is least litigious.

Moving to the top ten least litigious counties there are also anomalies as well in this list. None of the counties that are least litigious in 1992 are least litigious for either of the 1996/2001 tables. Additionally, Harris, TX is listed on the 1992 top ten least litigious counties when earlier Harris, TX is one of the counties that is eliminated because it is an outlier that appears in the 1996/2001 most litigious list. However, information listed previously reveals that the Texas Legislature passed tort reforms that explain this increase in tort suits. However, it still seems for the other counties that something happens on the least litigious list between the time periods of 1992 and 1996/2001.

V. Conclusion

The aim of this study is to discover if economic factors affect the number of tort suits filed or going to trial, and it appears the answer is yes. There are some results that are inconclusive, some results that differ between the two samples, and some results that are consistent throughout. This study has suggested that economic factors make a difference and moves a little closer to discovering exactly which factors matter and how much they make a difference.

Ultimately, income, race, accidental death rates, and perhaps the region appear to be important factors explaining tort cases and trials. Additionally, the number of lawyers appears to impact the number of trials, but could not be considered when examining the tort cases sample because of data constraints.

Overall the variables that are the most surprising are gender, retail establishment, and voting preference, which results change dramatically between the two samples. These variables warrant further investigation into their extreme unpredictability.

While this study removes the outliers and performs a second regression for 1996/2001, the information that is discovered about the outlier counties may help to explain other discrepancies in results. Perhaps other counties under analysis had various tort reform measures passed that affected why some of the variables changed so drastically from the 1996/2001 regression to the 1992 regression.

The difference in regression results from the two different sample could also be attributed to the dependent variable. In 1996/2001 regression the dependent variable is tort trials whereas in the 1992 regression the dependent variable is tort cases. The independent variables selected are to explain why tort suit filings occur. Possibly there are other factors that are not examined that account for tort trials. For instance, a county may have a large amount of frivolous lawsuits, which would mean that there would be a large number of tort cases. However, this same county could have a smaller number of tort trials because a large number of the cases would be thrown out for their frivolous nature before they ever went to court. Another option is settlements; a county could have a lot of cases, but that county could be known for settling cases before they ever go to trial, which would account for a large number of cases and a smaller number of tort trials. Therefore, these differences could explain why in the two different primary regressions some variables have extreme changes.

A final explanation for the results is that the two samples each consist of 46 counties (at most), and are mostly non-contiguous. It is possible that jurisdiction shopping occurs in adjacent counties and such actions cannot be accounted for in these counties.

This study has ventured to provide an avenue for further research concerning county level data since it offers more detailed information than state data alone could reveal. Future research could look for more years of available county level data to help explain any discrepancies this study discovered. This research is vital to the law process for law firms, lawyers, plaintiffs, and defendants. Possibly this information can aid their decision whether or not to file suit and if they decide to file suit in what county.

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Appendix

Table A1: List of Counties

1992 Counties	1996 Counties	2001 Counties
Maricopa, AZ	Maricopa, AZ	Maricopa, AZ
Pima, AZ	Pima, AZ	Pima, AZ
Alameda, CA	Alameda, CA	Alameda, CA
Contra Costa, CA	Contra Costa, CA	Contra Costa, CA
Fresno, CA	Fresno, CA	Fresno, CA
Los Angeles, CA	Los Angeles, CA	Los Angeles, CA
Orange, CA	Orange, CA	Orange, CA
San Bernardino, CA	San Bernardino, CA	San Bernardino, CA
San Francisco, CA	San Francisco, CA	San Francisco, CA
Santa Clara, CA	Santa Clara, CA	Santa Clara, CA
Ventura, CA	Ventura, CA	Ventura, CA
Fairfield, CT	Fairfield, CT	Fairfield, CT
Hartford, CT	Hartford, CT	Hartford, CT
Dade, FL	Dade, FL	Dade, FL
Orange, FL	Orange, FL	Orange, FL
Palm Beach, FL	Palm Beach, FL	Palm Beach, FL
Fulton, GA	Fulton, GA	Fulton, GA
Honolulu, HI	Honolulu, HI	Honolulu, HI
Cook, IL	Cook, IL	Cook, IL
Du Page, IL	Du Page, IL	Du Page, IL
Marion, IN	Marion, IN	Marion, IN
Jefferson, KY	Jefferson, KY	Jefferson, KY
Essex, MA	Essex, MA	Essex, MA
Middlesex, MA	Middlesex, MA	Middlesex, MA
Norfolk, MA	Norfolk, MA	Suffolk, MA
Suffolk, MA	Suffolk, MA	Worcester, MA
Worcester, MA	Worcester, MA	Oakland, MI
Oakland, MI	Oakland, MI	Wayne, MI
Wayne, MI	Wayne, MI	Hennepin, MN
Hennepin, MN	Hennepin, MN	St. Louis, MO
St. Louis, MO	St. Louis, MO	Bergen, NJ
Bergen, NJ	Bergen, NJ	Essex, NJ
Essex, NJ	Essex, NJ	Middlesex, NJ
Middlesex, NJ	Middlesex, NJ	New York, NY
New York, NY	New York, NY	Mecklenburg, NC
Cuyahoga, OH	Cuyahoga, OH	Cuyahoga, OH
Franklin, OH	Franklin, OH	Franklin, OH
Allegheny, PA	Allegheny, PA	Allegheny, PA
Philadelphia, PA	Philadelphia, PA	Philadelphia, PA
Bexar, TX	Bexar, TX	Bexar, TX
Dallas, TX	Dallas, TX	Dallas, TX
Harris, TX	Harris, TX	El Paso, TX
Fairfax, VA	Fairfax, VA	Harris, TX
King, WA	King, WA	Fairfax, VA
Milwaukee, WI	Milwaukee, WI	King, WA
		Milwaukee, WI
		*Norfolk, MA is not included in 2001 **Mecklenburg, NC & El Paso, TX are only included in 2001

A2: Regions

Counties	Region	County	Region
Maricopa, AZ	South	Norfolk, MA	Northeast
Pima, AZ	South	Suffolk, MA	Northeast
Alameda, CA	West	Worcester, MA	Northeast
Contra Costa, CA	West	Oakland, MI	Midwest
Fresno, CA	West	Wayne, MI	Midwest
Los Angeles, CA	West	Hennepin, MN	Midwest
Orange, CA	West	St.Louis, MO	Midwest
San Bernardino, CA	West	Bergen, NJ	Northeast
San Francisco, CA	West	Essex, NJ	Northeast
Santa Clara, CA	West	Middlesex, NJ	Northeast
Ventura, CA	West	New York, NY	Northeast
Fairfield, CT	Northeast	Mecklenburg, NC	Southeast
Hartford, CT	Northeast	Cuyahoga, OH	Midwest
Dade, FL	Southeast	Franklin, OH	Midwest
Orange, FL	Southeast	Allegheny, PA	Northeast
Palm Beach, FL	Southeast	Philadelphia, PA	Northeast
Fulton, GA	Southeast	Bexar, TX	South
Honolulu, HI	West	Dallas, TX	South
Cook, IL	Midwest	El Paso, TX	South
Du Page, IL	Midwest	Harris, TX	South
Marion, IN	Midwest	Fairfax, VA	Southeast
Jefferson, KY	Midwest	King, WA	West
Essex, MA	Northeast	Milwaukee, WI	Midwest
Middlesex, MA	Northeast		

Regions Include: South, Southeast, Northeast, West, and Midwest

A3: Correlation Matrix 1996/2001

	TORTS	MI	PI	MHI	TAXR	SS	FGNT	UNPL	POOR	RICH	HSVAL	RW	RB	RN	RA	RH	AGEU5	AGE17	AGE18_24	AGEU25
TORTS	1.000	-0.078	0.017	-0.197	0.262	0.199	0.110	-0.122	0.017	-0.169	-0.133	0.170	0.251	-0.194	-0.254	-0.151	-0.172	-0.168	-0.064	-0.172
MI	-0.078	1.000	0.846	0.820	0.552	-0.057	0.341	0.084	-0.429	0.902	0.618	-0.109	-0.065	-0.096	0.118	-0.168	-0.372	-0.416	-0.492	-0.534
PI	0.017	0.846	1.000	0.651	0.681	-0.029	0.497	0.005	-0.372	0.758	0.751	-0.058	-0.013	-0.203	0.143	-0.249	-0.535	-0.557	-0.472	-0.657
MHI	-0.197	0.820	0.651	1.000	0.274	-0.216	-0.032	-0.035	-0.690	0.944	0.457	-0.060	-0.323	-0.073	0.289	-0.141	-0.265	-0.186	-0.488	-0.363
TAXR	0.262	0.552	0.681	0.274	1.000	0.004	0.530	-0.024	-0.108	0.405	0.464	-0.079	0.337	-0.303	-0.079	-0.245	-0.447	-0.527	-0.241	-0.530
SS	0.199	-0.057	-0.029	-0.216	0.004	1.000	-0.002	-0.118	-0.142	-0.203	-0.181	0.340	0.045	-0.098	-0.227	-0.432	-0.526	-0.271	-0.351	-0.434
FGNT	0.110	0.341	0.497	-0.032	0.530	-0.002	1.000	0.070	0.289	0.140	0.636	-0.189	0.204	-0.078	0.090	0.021	-0.341	-0.520	0.041	-0.395
UNPL	-0.122	0.084	0.005	-0.035	-0.024	-0.118	0.070	1.000	0.488	0.104	0.146	-0.403	0.087	0.079	0.014	0.380	0.254	0.267	0.083	0.262
POOR	0.017	-0.429	-0.372	-0.690	-0.108	-0.142	0.289	0.488	1.000	-0.492	-0.104	-0.414	0.439	0.133	-0.170	0.509	0.418	0.270	0.565	0.483
RICH	-0.169	0.902	0.758	0.944	0.405	-0.203	0.140	0.104	-0.492	1.000	0.553	-0.214	-0.173	-0.058	0.260	-0.062	-0.289	-0.240	-0.448	-0.388
HSVAL	-0.133	0.618	0.751	0.457	0.464	-0.181	0.636	0.146	-0.104	0.553	1.000	-0.166	-0.169	-0.055	0.369	0.090	-0.342	-0.443	-0.294	-0.470
RW	0.170	-0.109	-0.058	-0.060	-0.079	0.340	-0.189	-0.403	-0.414	-0.214	-0.166	1.000	-0.331	-0.012	-0.370	-0.492	-0.110	-0.137	-0.339	-0.237
RB	0.251	-0.065	-0.013	-0.323	0.337	0.045	0.204	0.087	0.439	-0.173	-0.169	-0.331	1.000	-0.242	-0.261	-0.247	-0.002	-0.069	0.204	0.032
RN	-0.194	-0.096	-0.203	-0.073	-0.303	-0.098	-0.078	0.079	0.133	-0.058	-0.055	-0.012	-0.242	1.000	0.095	0.189	0.239	0.179	0.247	0.263
RA	-0.254	0.118	0.143	0.289	-0.079	-0.227	0.090	0.014	-0.170	0.260	0.369	-0.370	-0.261	0.095	1.000	0.013	-0.134	-0.153	0.030	-0.118
RH	-0.151	-0.168	-0.249	-0.141	-0.245	-0.432	0.021	0.380	0.509	-0.062	0.090	-0.492	-0.247	0.189	0.013	1.000	0.511	0.484	0.339	0.557
AGEU5	-0.172	-0.372	-0.535	-0.265	-0.447	-0.526	-0.341	0.254	0.418	-0.289	-0.342	-0.110	-0.002	0.239	-0.134	0.511	1.000	0.721	0.411	0.858
AGE17	-0.168	-0.416	-0.557	-0.186	-0.527	-0.271	-0.520	0.267	0.270	-0.240	-0.443	-0.137	-0.069	0.179	-0.153	0.484	0.721	1.000	0.233	0.890
AGE18_24	-0.064	-0.492	-0.472	-0.488	-0.241	-0.351	0.041	0.083	0.565	-0.448	-0.294	-0.339	0.204	0.247	0.030	0.339	0.411	0.233	1.000	0.618
AGEU25	-0.172	-0.534	-0.657	-0.363	-0.530	-0.434	-0.395	0.262	0.483	-0.388	-0.470	-0.237	0.032	0.263	-0.118	0.557	0.858	0.890	0.618	1.000
AGE065	0.141	0.065	0.120	-0.084	0.128	0.909	0.095	-0.084	-0.179	-0.048	0.037	0.226	-0.058	-0.100	-0.002	-0.332	-0.652	-0.368	-0.448	-0.563
AGE074	0.098	0.170	0.194	0.009	0.165	0.874	0.106	-0.015	-0.189	0.062	0.067	0.184	-0.038	-0.070	-0.012	-0.338	-0.667	-0.363	-0.448	-0.563
CRM	-0.032	-0.212	0.028	-0.475	0.136	-0.167	0.350	0.144	0.544	-0.329	0.125	-0.324	0.422	0.186	-0.004	0.159	0.177	-0.032	0.419	0.181
CRMV	0.016	-0.334	-0.218	-0.589	0.089	-0.132	0.213	0.233	0.727	-0.414	-0.107	-0.368	0.735	-0.024	-0.163	0.127	0.177	0.047	0.456	0.243
EDHS	0.009	0.521	0.484	0.637	0.218	0.078	-0.017	-0.479	-0.829	0.512	0.174	0.414	-0.294	0.110	0.137	-0.589	-0.454	-0.414	-0.439	-0.535
EDCOL	0.025	0.771	0.835	0.726	0.596	-0.223	0.408	-0.175	-0.531	0.751	0.616	0.072	-0.142	-0.101	0.223	-0.297	-0.504	-0.568	-0.444	-0.645
FEM	0.325	0.020	0.109	-0.260	0.321	0.666	0.311	-0.163	0.115	-0.158	-0.094	0.118	0.484	-0.362	-0.446	-0.367	-0.451	-0.312	-0.186	-0.379
PPHOME	-0.300	-0.223	-0.424	0.132	-0.543	-0.427	-0.526	0.210	0.066	0.026	-0.192	-0.283	-0.339	0.037	0.234	0.558	0.631	0.674	0.198	0.653
DTHA	0.252	-0.350	-0.336	-0.496	-0.144	0.365	-0.120	0.112	0.351	-0.412	-0.426	-0.052	0.229	0.466	-0.268	0.080	0.136	0.221	0.184	0.239
DOCS	0.189	0.179	0.438	-0.124	0.503	0.143	0.698	-0.026	0.202	0.020	0.447	-0.057	0.277	-0.179	0.062	-0.183	-0.557	-0.639	0.079	-0.511
NFLT	0.352	-0.003	0.095	-0.048	0.089	0.213	0.202	-0.118	-0.025	-0.039	-0.068	0.026	0.065	-0.299	-0.044	-0.143	-0.283	-0.308	-0.061	-0.287
SHOPS	0.078	0.541	0.595	0.404	0.499	0.086	0.216	-0.141	-0.483	0.430	0.253	0.151	-0.031	-0.153	0.021	-0.403	-0.369	-0.422	-0.337	-0.480
LWOF	0.227	-0.397	-0.135	-0.461	0.145	0.029	0.221	-0.251	0.173	-0.453	0.048	0.267	0.135	-0.187	0.014	-0.095	-0.147	-0.196	0.099	-0.123
DVOTE	0.054	0.069	0.276	-0.109	0.332	0.244	0.476	0.045	0.200	-0.012	0.420	-0.155	0.283	-0.162	0.234	-0.174	-0.521	-0.494	-0.102	-0.478
S	0.125	-0.244	-0.277	-0.282	-0.194	-0.184	-0.114	-0.018	0.295	-0.237	-0.281	-0.103	-0.133	0.409	-0.183	0.501	0.472	0.295	0.300	0.416
SE	0.005	0.145	0.083	0.105	0.189	-0.173	0.088	-0.060	-0.013	0.133	-0.082	-0.176	0.296	-0.163	-0.101	-0.022	0.008	-0.053	-0.030	-0.042
NE	0.096	0.300	0.353	0.214	0.344	0.318	0.270	-0.047	-0.206	0.222	0.337	0.239	-0.070	-0.348	-0.121	-0.205	-0.394	-0.372	-0.284	-0.437
W	-0.416	-0.101	-0.097	0.156	-0.344	-0.425	-0.177	0.261	0.014	0.102	0.279	-0.224	-0.355	0.246	0.590	0.303	0.195	0.251	0.095	0.241
MW	0.232	-0.119	-0.107	-0.238	0.017	0.389	-0.071	-0.166	-0.026	-0.248	-0.359	0.198	0.334	-0.101	-0.270	-0.492	-0.177	-0.073	-0.021	-0.099

A4: Correlation Matrix 1992

	TORTS	MI	PI	MHI	TAXR	SS	FGNT	UNPL	POOR	RICH	HSVAL	RW	RB	RN	RA	RH	AGEU5	AGE17	AGE18_24	AGE065	AGE074	CRM	CRMV
TORTS	1.000	0.188	0.256	0.138	0.250	0.246	0.252	0.142	-0.019	0.202	0.192	-0.020	0.214	-0.097	-0.067	-0.148	-0.373	-0.318	0.171	0.242	0.197	-0.017	0.017
MI	0.188	1.000	0.723	0.662	0.511	-0.153	-0.073	-0.074	-0.447	0.750	0.564	0.201	-0.146	-0.302	-0.014	-0.120	-0.295	-0.305	-0.231	0.000	0.002	0.156	0.239
PI	0.256	0.723	1.000	0.652	0.681	-0.059	0.040	-0.082	-0.467	0.765	0.753	0.153	-0.126	-0.392	0.143	-0.244	-0.649	-0.640	-0.324	0.131	0.157	0.304	0.385
MHI	0.138	0.662	0.652	1.000	0.144	-0.429	-0.136	-0.245	-0.849	0.941	0.543	0.325	-0.495	-0.218	0.227	-0.208	-0.190	-0.201	-0.219	-0.254	-0.282	-0.324	-0.257
TAXR	0.250	0.511	0.681	0.144	1.000	0.061	0.141	-0.060	0.099	0.348	0.441	-0.106	0.399	-0.279	-0.157	-0.146	-0.538	-0.495	-0.213	0.152	0.188	0.580	0.635
SS	0.246	-0.153	-0.059	-0.429	0.061	1.000	0.085	0.316	0.176	-0.406	-0.292	0.235	0.229	-0.103	-0.263	-0.369	-0.434	-0.309	-0.294	0.923	0.905	-0.036	-0.003
FGNT	0.252	-0.073	0.040	-0.136	0.141	0.085	1.000	-0.090	0.288	-0.043	0.118	-0.324	0.321	-0.072	0.239	-0.091	-0.370	-0.416	0.482	0.110	0.122	0.143	0.143
UNPL	0.142	-0.074	-0.082	-0.245	-0.060	0.316	-0.090	1.000	0.308	-0.174	-0.042	0.106	0.149	-0.265	-0.392	0.207	0.088	0.071	-0.008	0.294	0.336	0.052	0.127
POOR	-0.019	-0.447	-0.467	-0.849	0.099	0.176	0.288	0.308	1.000	-0.674	-0.241	-0.554	0.631	0.174	-0.167	0.421	0.194	0.189	0.334	0.053	0.096	0.549	0.499
RICH	0.202	0.750	0.765	0.941	0.348	-0.406	-0.043	-0.174	-0.674	1.000	0.662	0.165	-0.313	-0.256	0.223	-0.131	-0.288	-0.285	-0.243	-0.202	-0.219	-0.103	-0.031
HSVAL	0.192	0.564	0.753	0.543	0.441	-0.292	0.118	-0.042	-0.241	0.662	1.000	-0.096	-0.224	-0.085	0.315	0.191	-0.447	-0.526	-0.008	-0.087	-0.044	0.432	0.514
RW	-0.020	0.201	0.153	0.325	-0.106	0.235	-0.324	0.106	-0.554	0.165	-0.096	1.000	-0.545	-0.017	-0.560	-0.321	-0.153	-0.129	-0.287	0.230	0.230	-0.403	-0.368
RB	0.214	-0.146	-0.126	-0.495	0.399	0.229	0.321	0.149	0.631	-0.313	-0.224	-0.545	1.000	-0.278	-0.224	-0.135	-0.044	0.020	0.127	0.092	0.118	0.350	0.370
RN	-0.097	-0.302	-0.392	-0.218	-0.279	-0.103	-0.072	-0.265	0.174	-0.256	-0.085	-0.017	-0.278	1.000	0.028	0.242	0.279	0.183	0.119	-0.115	-0.124	0.054	-0.040
RA	-0.067	-0.014	0.143	0.227	-0.157	-0.263	0.239	-0.392	-0.167	0.223	0.315	-0.560	-0.224	0.028	1.000	0.051	-0.124	-0.161	0.139	-0.152	-0.186	0.010	-0.012
RH	-0.148	-0.120	-0.244	-0.208	-0.146	-0.369	-0.091	0.207	0.421	-0.131	0.191	-0.321	-0.135	0.242	0.051	1.000	0.351	0.297	0.186	-0.250	-0.216	0.328	0.262
AGEU5	-0.373	-0.295	-0.649	-0.190	-0.538	-0.434	-0.370	0.088	0.194	-0.288	-0.447	-0.153	-0.044	0.279	-0.124	0.351	1.000	0.891	0.161	-0.569	-0.573	-0.236	-0.306
AGE17	-0.318	-0.305	-0.640	-0.201	-0.495	-0.309	-0.416	0.071	0.189	-0.285	-0.526	-0.129	0.020	0.183	-0.161	0.297	0.891	1.000	-0.047	-0.470	-0.489	-0.300	-0.364
AGE18_24	0.171	-0.231	-0.324	-0.219	-0.213	-0.294	0.482	-0.008	0.334	-0.243	-0.008	-0.287	0.127	0.119	0.139	0.186	0.161	-0.047	1.000	-0.406	-0.392	0.073	0.060
AGE065	0.242	0.000	0.131	-0.254	0.152	0.923	0.110	0.294	0.053	-0.202	-0.087	0.230	0.092	-0.115	-0.152	-0.250	-0.569	-0.470	-0.406	1.000	0.984	0.023	0.060
AGE074	0.197	0.002	0.157	-0.282	0.188	0.905	0.122	0.336	0.096	-0.219	-0.044	0.230	0.118	-0.124	-0.186	-0.216	-0.573	-0.489	-0.392	0.984	1.000	0.086	0.125
CRM	-0.017	0.156	0.304	-0.324	0.580	-0.036	0.143	0.052	0.549	-0.103	0.432	-0.403	0.350	0.054	0.010	0.328	-0.236	-0.300	0.073	0.023	0.086	1.000	0.974
CRMV	0.017	0.239	0.385	-0.257	0.635	-0.003	0.143	0.127	0.499	-0.031	0.514	-0.368	0.370	-0.040	-0.012	0.262	-0.306	-0.364	0.060	0.060	0.125	0.974	1.000
EDHS	-0.125	0.370	0.444	0.693	0.016	-0.267	-0.097	-0.540	-0.802	0.565	0.235	0.509	-0.566	0.133	0.129	-0.479	-0.215	-0.271	-0.194	-0.172	-0.190	-0.282	-0.290
EDCOL	0.058	0.593	0.794	0.701	0.525	-0.407	0.158	-0.388	-0.522	0.748	0.636	0.194	-0.271	-0.109	0.176	-0.230	-0.494	-0.525	-0.118	-0.218	-0.187	0.182	0.214
FEM	-0.231	-0.037	-0.058	0.386	-0.376	-0.698	-0.139	-0.280	-0.327	0.284	0.265	-0.221	-0.549	0.307	0.564	0.370	0.363	0.210	0.216	-0.570	-0.593	-0.202	-0.253
DTHA	-0.004	-0.436	-0.473	-0.633	-0.069	0.378	-0.048	0.075	0.484	-0.617	-0.439	-0.165	0.259	0.503	-0.223	0.127	0.123	0.107	-0.085	0.338	0.330	0.155	0.054
CARS	-0.218	0.045	-0.165	0.528	-0.543	-0.393	-0.440	-0.223	-0.659	0.338	-0.194	0.353	-0.544	0.110	0.035	-0.039	0.459	0.478	-0.195	-0.372	-0.425	-0.737	-0.776
DOCS	0.294	0.139	0.447	-0.168	0.591	0.176	0.510	0.025	0.330	-0.009	0.421	-0.178	0.311	-0.143	0.051	-0.063	-0.623	-0.653	0.285	0.184	0.254	0.606	0.660
NFLT	0.185	-0.038	0.086	-0.081	0.129	0.205	0.158	0.185	0.055	-0.036	-0.142	0.125	0.085	-0.253	-0.047	-0.152	-0.282	-0.274	-0.009	0.227	0.205	0.092	0.096
SHOPS	-0.118	0.556	0.655	0.437	0.380	-0.087	-0.189	-0.185	-0.504	0.449	0.377	0.353	-0.318	-0.216	0.025	-0.247	-0.385	-0.461	-0.248	0.033	0.067	0.230	0.234
DVOTE	0.136	-0.121	0.182	-0.268	0.364	0.319	0.491	0.153	0.407	-0.123	0.341	-0.372	0.427	0.000	0.155	-0.069	-0.478	-0.484	0.100	0.328	0.371	0.419	0.496
S	-0.164	-0.213	-0.391	-0.302	-0.087	-0.174	-0.104	-0.209	0.265	-0.305	-0.295	-0.051	-0.099	0.476	-0.136	0.381	0.326	0.324	0.100	-0.210	-0.231	0.094	-0.033
SE	-0.085	0.108	0.020	-0.007	0.129	-0.053	0.197	0.016	0.018	0.062	-0.119	-0.070	0.216	-0.187	-0.118	0.066	-0.111	-0.102	-0.101	0.124	0.133	0.079	0.043
NE	0.601	0.432	0.492	0.314	0.287	0.214	0.147	0.346	-0.210	0.369	0.444	0.306	-0.085	-0.294	-0.126	-0.154	-0.456	-0.487	0.132	0.245	0.254	0.097	0.193
W	-0.223	-0.202	-0.027	0.193	-0.365	-0.412	-0.051	-0.108	-0.105	0.158	0.386	-0.381	-0.319	0.242	0.584	0.339	0.246	0.138	0.092	-0.317	-0.311	-0.076	-0.084
MW	-0.185	-0.146	-0.184	-0.267	0.044	0.345	-0.155	-0.092	0.102	-0.330	-0.500	0.155	0.302	-0.150	-0.258	-0.485	0.050	0.176	-0.212	0.128	0.122	-0.141	-0.110