Inter-city Rent Differentials in the U.S. Housing Market 2000: Understanding Rent Variations as a Sociological Phenomenon

"Final, Revised"

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Abstract: This study extends the inter city rent differentials investigation by Gilderbloom and Appelbaum (1988) in relatively independent housing markets to see how it can be replicated using U.S. census data from the year 2000 against the 1970 and 1980 models with the addition of several new variables to measure its impact on inter-city rents. We find that region, race and climate no longer explain rent differentials in 2000 as it did in the 1980 research, while affirming that a large percentage of old houses and small mom and pop landlords causes rents to fall. We find that both the cost of homeownership and the level of household income remain critical factors in explaining the level of median rent across cities. We also find a strong correlation between cities with extensive anti-war activity in the late 1960's and same sex households having higher rents, although more research needs to be done before we argue a casual relationship. We contend that sociology needs to be put back into the equation in order to understand how rents vary from city to city. Our explanation of rent variations adds a social dimension that most other research misses. We also show how the amount of explanatory power is increased significantly by adding in a sociological dimension.

Keywords: housing, rent, sociology, urban sociology, economics, planning, public policy, policy, landlord, urban population, same sex,

Introduction

The factors that determine median rent levels across cities have been a topic of much debate and intense research in the literature on urban housing markets and urban public policy. One of the landmark contributions to this debate was the research conducted by Gilderbloom and Appelbaum (1988), whose book *Rethinking Rental Housing* was praised as "the most significant piece on housing policy written in the last 30 years" by Daniel Lauber, the immediate past president of American Planning Association. The key theoretical arguments are: 1) exogenous supply factors play little role in the determination of rents, and 2) institutional factors, such as the level of professionalization and market concentration of landlords in urban rental markets, play a larger role in determining rents than previously thought.

Does this theory remain valid in the year 2000? What happens when additional variables are added to either control for or explain variations in rent? In this paper, we intend to fulfill three goals: 1) produce a replication of the previous study by Gilderbloom and Appelbaum (1988) using 2000 Census data; 2) include additional variables that might improve the explanatory power of the original model; and 3) compare changes in the variables predicting rent in 2000 with those in the 1970 and 1980.

Literature Review: Economic Perspective

The dominant housing theory, supported by the work of ecological sociologists, holds that the price of rental housing is determined by the dynamics of supply and demand in perfect or 'frictionless' markets. This dominant paradigm has its roots in traditional economic theory (Belsky and Goodman, 1996; Beyer, 1966; Niebanck, et al., 1976; Blank and Winnick, 1953; Ferguson and Maurice, 1974; Mills, 1972; Gabriel and Nothaft, 1988; Grigsby, 1973; Igarashi, 1991; Kent 1978; Malpezzi, 1996; Olsen, 1973; 1987; Pennance, 1969; Rosen and Smith, 1983; Smith, 1973; Rosen, 1996; De Leeuw and Ekanem, 1971; Atterhog and Lind, 2004). As the demand for housing increases, reflected in a vacancy rate below 5 percent, a shortage exists, reducing competition among landlords and thereby causing rents to be "excessively" high (Atterhog and Lind, 2004; Belsky, 1992; Lett, 1976; Tse and MacGregor, 1999). In relation, when vacancy is above 5 percent, the market is assumed to be competitive and rents fall accordingly to a new, lower equilibrium point. Courts have generally ruled that a "housing emergency" allowing for rent controls can exist only when a municipality's vacancy rate falls below 5 percent (Moskovitz, et al., 1972, p. 10). More recently John Weicher (1990), who at the time was Assistant Secretary for Policy Development and Research at HUD, argued that a seven percent rental vacancy rate has provided an ample amount of competition.

Crucial to the neo-classical economists' argument are seven presuppositions delineated by Olsen (1973), which must be present in order for rental prices to be affected by the flux in demand and supply:

(1) Both buyers and sellers of housing service are numerous

(2) The sales or purchases of each individual unit are small in relation to the aggregate volume of transactions

(3) Neither buyers nor sellers collude

(4) Entry into and exit from the market are free for both producers and consumers

(5) Both producers and consumers possess perfect knowledge about the prevailing price and current bids, and they take advantage of every opportunity to increase profits and utility respectively

(6) No artificial restrictions are placed on demands for, supplies of, and prices of housing service and the resources used to produce housing service

(7) Housing service is a homogeneous commodity.

Olson admits that these assumptions are difficult to meet in a housing market. In fact, Gilderbloom and Appelbaum (1988) have critiqued each of these necessary assumptions and suggest that most of these assumptions cannot be met in today's rental housing market.

Historically, research has been thin concerning the impact of supply on rents (Deleeuw and Ekanem, 1971; Gordon, 1977). In an exhaustive review of empirical work on the determinants of rent prices, Ball (1973, p. 231) concludes that "researchers have ignored supply factors (the principal problems being a total absence of data and the difficulty of fitting meaningful supply equations)… Consequently, this can generate serious biases in the coefficients, and differences in supply between cities make inter-city comparison very difficult." Ball also notes that income is also frequently left out of the hedonic price equations.

Over the past twenty years, new waves of studies have come out to better understand inter-city rent variations by economists. Rosen and Smith's (1983, p. 783) often cited and "widely accepted" (Igarashi 1991, p. 252) study finds that on average a "natural"

vacancy rate of 9.8% is the rate when the supply and demand for rental housing are in equilibrium, resulting in no upward or downward pressure on rents (Belsky and Goodman, 1996; Wang and Zhou, 2000; Vandell, 2003).

In a cross sectional analysis, Rosen and Smith argue that the natural vacancy rate ranges from 5.5% in Cleveland to 16.7% in Dallas. They report that vacancy rates should consider several other factors, such as the average age of the population, housing growth mobility, frequency and duration of vacancies, the type of housing stock (homogeneous vs. heterogeneous), location and condition of housing stock, and rent variations across "time, space, and structure type" (Belsky and Goodman, 1996, p. 312). The chief problem with this analysis was that only 14 cities were examined, and only four variables were used as controls. Several refinements have been made on exploring the "natural vacancy rates" (Lai, Wang and Yang, 2007). However, these studies have similar problems with small sample size of cities and a limited number of control variables (Belsky, 1993; Gabriel and Nothaft, 1988).

Sociological Theories of Rent

Increasingly, urban scholars found the neo-classical economic paradigm deficient and inappropriate in explaining rents and vacancy rates across cities. Ernest Burgess (see Park et al., 1925) was the first sociologist to develop a recognized theory of urban rent, which he called the concentric zone theory. Rent is a function of density, location and particular social classes. The ghetto, Chinatown, underworld, and the black belt are located near the center of the city, which Burgess labeled as the "zone of transition," whereas the working class and middle class and rich live as a social group further away from the city. Burgess also noted that value of land was determined by rapid movement of people near subways and trains.

Louis Wirth, President of the American Sociological Association in 1947, argued "as sociologists, we have the skills and the insights, the systematic framework and the background by virtue of scientific training to view the problem (of housing) in the perspective of systematic science" (1947, p. 142). The following year, Robert Merton (1948, p. 163) said that in sociology, housing has a "long productive future." However, the future was never fully realized, and a theory of housing was never truly developed.

William Form (1954) found that the economic/ecological model is deficient in its power to explain the urban realities as it fails to account for social forces that guide the land market. The market for land is not merely comprised of disorganized, self-interested actors, but by interacting organizations that work together to bring about a desired outcome. Logan and Molotch (1987) later expanded on his work.

In England, Ray Pahl (1975) argued that sociology must understand why the cost of housing varies among cities and the role of human agency (pp. 244-246). Sociologists Logan and Molotch (1987, 2007) in their landmark book, *Urban Fortunes*, provide an important sociological perspective on how economics fails to adequately explain rent in the refined "supply and demand" explanation. As Logan and Molotch note (1987:9) "price is sociological and sociology is needed to analyze its determination as well as its consequence." They add that "markets work through such interests and the institutions that derive from and sustain them."

Harvey (1973) argues an inherent tension between use and exchange value, creating conflict in the capitalist city. He argues the exchange values are related to "socially determined use values," meaning that exchange value can dictate use values by "creating new conditions to which individuals must adapt if they are to survive in society" (Harvey, 1973, p. 190). Later, Castells (1979)

rejected as ideological and without merit, any approach which sought to explain social life through economic competition or biological determinism.

As Gendron and Domhoff (2007, p. 185) notes, sociology goes beyond the invisible hand and sees markets as social phenomena, whereby ”all markets (and perhaps especially urban land markets) are intertwined with and thus shaped by human interests in wealth, power, and sentiments about place. Gendron and Domhoff (2007, p. 185) argue that "it is necessary to take account of the underlying motivations behind the social actions of individuals; it is analytically inadequate to posit the pursuit of self-interest as the prime motivation and let it go at that." The potential of sociology to provide insights into the dynamics of housing markets influenced by individuals, groups and institutions must require the use and insight of rigorous scientific examination.

From these insights, sociologists Gilderbloom and Appelbaum (1988) have attempted to build a model to empirically explain variations in rent across cities. Using regression techniques on 140 metropolitan U.S. housing markets, they found that vacancy rates are statistically significant if they are above 10%. Moreover, they find that a number of other variables are better predictors of rent variations across cities, such as city size, new rental construction, homeownership costs, income, and population growth. Unfortunately, economists with one exception have ignored this work (Igarashi, 1991).

Data and Methodology

The data used for this study was obtained from the 1990 and 2000 U.S. Census National File (SF3).[1] The original analysis of Appelbaum, et al. (1976) chose every city over 50,000 people and not located 20 miles or more from another city more than 50,000

people. Places like Indianapolis, Nashville, Louisville, San Antonio and Houston were chosen, but cities with large metropolitan areas where numerous cities over 50,000 are crunched together, such as New York, Los Angeles, and Chicago were excluded. We use the same cities as did Gilderbloom and Appelbaum (1988). We also corrected for nine cities that were excluded because of missing data problems. While Gilderbloom and Appelbaum selected 149 cities, they could only find complete data on 140 cities with 1980 data, and 112 cites with 1970 data. In this analysis we included all 149 cities chosen by Gilderbloom and Appelbaum (1988) in their original study. This sample of semi-independent cities avoids the problems of using every city over 50,000 which would be 672 and would include numerous housing markets within a single region in certain cases (names are excluded to avoid identification).

Table 1 lists the variables included in the regression models developed in this paper.[1] Median rent is the dependent variable in each model, and is listed in the first row. Additionally, all of the independent variables are listed along with their mean values and standard deviations

for the 2000 data sets. The expected direction of impact is based upon theoretical assumptions about the causal relationships among rental housing market variables, as well as previous findings in the research previously cited.

<Table 1 about here>

Within our sample of 149 cities, the average median contract rent is $447, ranging from $261 in Gadsden, Alabama to $886 in Santa Barbara, California. We are asking how these cities create such extreme rent variations. The median house price is $95,000. Vacancy rates are at 8.9% with a range of 2% to 18%. The cities in this study show an average urban population of 221,000 people, experiencing an average growth rate of 8.8% over the decade from 1990 to 2000; 44.5% of the housing markets are occupied by

rental units; six percent of the rental units have been built within the last five years; 37% are old rentals (built before 1960), and 49% are medium old rentals (built between 1950 and 1970).

A third of the population in this study is nonwhite. The average median family income is $43,000, while the average unemployment rate is 7.4%. Thirteen percent of rental properties are managed by professional landlords (those owning 5 or more units), while 24% of rental properties are managed by amateur landlords (less formally organized and held up to four units).

Dependent Variable:

Median Contract Rent: This variable measures the monthly median rent price per city (Gilderbloom and Ye, 2007; Gilderbloom, et al., 1992).

Independent Variables:

Region: This variable is operationalized as a dummy variable – "South" and "Non-South." This variable measures the effect of a U.S. geographical region, and by extension, weather on rents in cities. Gilderbloom and Appelbaum (1988) found in earlier studies that rents in the South were generally lower and statistically significant from 1970-1980, controlling for everything else. We suspect that this association might have diminished by 2000 with the wider introduction of air conditioning, insulation, and energy efficiency standards (Browne, 2000; Loeffler and Steinicke, 2007). On the other hand, rents still might lag behind because of intolerance toward minorities.

Median house value: This variable is the actual median house value within each city. As the price of homeownership rises, as reflected in median house values, the demand for rental housing will increase, and in so doing, it will elevate the rental prices, all else

being equal. Gilderbloom et al. (1992), Gilderbloom and Appelbaum (1988) and Gilderbloom and Ye (2007) found a positive relationship between the price of housing and renting, showing that the costs of rent and the price of homeownership is related to a ceiling on rents (Dieleman, Clark and Deurloo, 2000; Bitter et al., 2007; Glaesar and Gyourko, 2002; Ozanne and Thibodeau, 1983; Thibodeau, 1995). At some point, tenants realize that they could pay a mortgage payment for the price they are paying to rent (Beer, Kearins and Pieters, 2007).

Rental Vacancy Rate: This variable is defined as the percent of rental units that are vacant at the moment the Census was taken. For economists, vacancy rates are an excellent indicator of supply. When vacancy rates are low, rents are believed to be high (Gilderbloom and Ye, 2007; De Leeuw and Ekanem, 1971, Gabriel and Nothaft, 2001; Deng, Gabriel and Nothaft, 2003; Lai, et al., 2007; Gilderbloom, et al., 1992, Dreier, et al., 1991). Sociologists believe that social and political interferences, along with mega-landlords controlling a large portion of the rental housing stock, cause vacancy rate impact to be diminished relative to other concerns.

Rental Percent: This variable is the total percentage of rental housing of the entire housing stock within a city (Malpezzi, et al., 1998). According to economists, a higher percent of rental housing would indicate higher supply and lower rents. There are conflicting theories on the effect the proportion of the housing stock that is rental and its impact on rents (Gilderbloom and Ye, 2007; Wood, Watson and Flatau, 2006; Beer, et al., 2007). Work by Anderson and Crocker (1971) and Beyer (1966) demonstrated that as the proportion of rental housing in a market increases, rents had a tendency to fall. Tenants enjoy a wide range of choices which promotes market competitiveness, which lowers rents (Gilderbloom and Appelbaum, 1988, p. 96). On the other hand, cities with a low percentage of rentals relative to demand would provide fewer options for tenants who would bid up rents (Glaesar and Gyourko,

2002). Also, higher proportions of rental housing may attract more professional landlords which inevitably drive up rents (Gilderbloom and Appelbaum, 1988, p. 96). This study supports the latter.

Urban population level: This variable is traditionally a good indicator of demand. For sociologists, better cities mean greater amenities, which results in higher prices (Gilderbloom and Appelbaum, 1988; Appelbaum, et al., 1974; 1978; Mills, 1972; DeLeeuw, et al., 1971; Molotch, 1976; Logan and Molotch, 1987; 2007). Larger urban centers provide more amenities than smaller ones, thus increasing demand for and elevating rents. Population Growth also has a positive and meaningful impact on median rent (Gilderbloom and Ye, 2007). As cities grow and expand, more people enter the market, and in the short run, construction lags demand for new housing. The increase demand heightens competition for available housing and bids up rents (Bitter, Mulligan and Dell'erba, 2007). Also, citizens, especially newcomers are less knowledgeable of the housing market. The increase in population and lack of knowledge of the market usually results in higher rents (Saiz, 2007).

Decennial population growth rate: This variable measures the percentage of growth in city population over the decade between each census (Appelbaum, et al., 1974; Gilderbloom and Appelbaum, 1988; Gilderbloom and Ye, 2007).

New Rental: This variable is defined as the percentage of rental housing stock created during the five years immediately prior to the collection of the census data (i.e., the 1990 data reflects the percentage of rental stock created from 1985 to 1990). Newer housing stock will cause rents to rise due to landlords attempting to cover their costs of new and more expensive construction (Keating, et al., 1998; Berry and Hall, 2005; Gilderbloom and Ye, 2007; Mee, 2002). Also, newer units will have more modern amenities which will stimulate demand. According to Gilderbloom and Appelbaum (1988), Mandelker and Montgomery (1973), and Smith (1976), newer

construction typically displaces older affordable housing. In contrast, it is more commonly believed (especially economists) that new construction extends the housing supply and thus, *ceteris paribus*, prices should fall.

Old Rentals (built before 1960), which is the percentage of rental units that were built prior to 1960 and ***Medium old Rental (built between 1950-1970*** were rotated in the equations. This variable measures the percentage of rental housing built between the years 1950 and 1970. Gilderbloom and Appelbaum (1988) found that as the percentage of older units increases, rents are lowered because these units have less amenities and are occupied by mom-and-pop landlords (see also Rypkema, 2002). On the other hand, economists argue that economies of scale would force mom and pop landlords to push up the price of rentals past large scale operators.

Percentage of nonwhites: This variable measures the proportion of non-white population in the city. Gilderbloom and Appelbaum (1988) found in earlier work on rent dynamics that the presence of large number of non-whites is correlated with lower rents looking at 1970 and 1980 data (see also, Massey and Lundy, 2001; Hayduk 2003; Saiz, 2007). Haugen and Heins (1969) found that median rent differentials in metropolitan areas were a function of market separation along racial lines. As non-white populations grew in the city core, whites moved out to the surrounding suburbs where land is cheaper. On the other hand, some argue that we have entered a post-racial society. We are interested in whether inter-city housing dynamics are still impacted by race (Gilderbloom and Ye, 2007; Ross and Turner, 2005; Ottaviano and Peri, 2006; Sykes, 2003).

Median family income: This variable is the median family income for each city. Gilderbloom and Appelbaum (1988) showed that median family income has had a positive impact on rents since landlords charge rents based on knowledge of tenants' income (Gilderbloom and Ye, 2007; DeLeeuw, et al., 1971; Kingsley and Turner, 1993). In a perfectly competitive housing market, median

income should not affect rents, *ceteris paribus*. To the extent that competition is imperfect, landlords will charge "what the market will bear," resulting in high-income areas paying higher rents (Gilderbloom and Appelbaum 1988, p. 98; Dieleman, et al., 2000; Quigley and Raphael, 2004).

Lack of Plumbing: This variable is a measure of the percentage of rental units which lack plumbing in each city. It is an indication of the quality of the rental housing stock (Baar and Keating, 1981; Gilderbloom and Appelbaum, 1988; Keating, et al., 1998; Gilderbloom and Ye, 2007; Smith, 1976; MacKay, 2000). Also, a lack plumbing used to measure the quality of housing stock showed no statistical significance (Quigley and Raphael, 2004).

Unemployment: This variable measures the current rate of unemployment in a given city. Higher unemployment would suggest lower rents due to a depressed state of demand for rental housing (Basu and Emerson, 2003).

Landlord Professionalization: Gilderbloom and Appelbaum (1988) argue that the level of professionalization of landlords may be an institutional factor having a strong influence on median rents across cities (Berry and Hall, 2005). Gilderbloom and Appelbaum (1988) operationalize this concept using two separate variables: 1) the percentage of ten or more rental units at a single address; and 2) the percentage of 50 or more rental units at a single address as a proportion of all rental properties located in the city. These variables attempt to measure the degree to which cities are dominated by professional large-scale landlords as opposed to amateur small-scale landlords (Basu and Emerson, 2000; 2003).

Amateur Landlord: This variable accounts for the proportion of landlords who are considered "mom and pop" proprietors who own duplexes, triplexes or quadplexes. These landlords tend to rent to friends and family members and usually occupy a unit within the

building. Krohn and Fleming (1972) and Krohn and Manzer (1977) found that mom-and-pop landlords rent at a discounted price, as opposed to larger corporate landlords (Gilderbloom and Appelbaum, 1988; Ruud and Nordvik, 1999; Berry, 2000; Nordvik, 2000).

Anti -War: This variable measures the degree of anti-war activity in a particular city or nearby city. This is based on the Capek and Gilderbloom (1992) anti-war scale, based on the number of people attending rallies. This is also was based on the New York Times account of attendance at anti-war rallies during the late sixties and early seventies, where certain cities like Madison, WI, Santa Barbara, Boulder, CO and Austin, TX had many anti-war rallies, while other cities like Louisville, Salt Lake City, and Birmingham had little to no anti-war activity. A "0" indicates very little, if any, anti-war activity, "1" indicates that there was an activity in a nearby city that had anti-war activity, and "2" indicates a city with major anti-war activity as measured by the number of people at rallies. This variable measures whether the organizing skills of anti-war campaigns were transferred to community organizing efforts (Beitel, 2007; Capek and Gilderbloom, 1992). The anti-war movement taught people how to organize politically and use these skills in community organizing. Typically anti-war protestors "brought the war home" by learning how to work with neighborhood associations, create more amenities in neighborhoods, traffic calming, build mini parks, rent control, tenants rights, stopping rentals converted to condominiums, and historic preservation, and embrace earlier forms of new urbanism.

***Same Sex*:** This variable includes the percent of unmarried same-sex adults residing in homes. Based on the work of Castells (1983) and Castells and Murphy (1982) we believe that as the percentage of same-sex couples rises in a city, rents will also rise (Page, 1998; Florida, 2002). Surprisingly, little systematic research has been done that add this variable to an inter-city rent differential regression model.

Climate: This variable measures the impact of climate on city rents. Gilderbloom and Appelbaum (1988) found a direct correlation between mild climates (Santa Barbara) and rents (see also Levinson and Niemann, 2004).

Examination of the Original Inter-city Rent Equations: Table 2

Predictors of median contract rent were analyzed in various regression specifications. The analysis is a comparison between the original Gilderbloom-Appelbaum Model for 1970 and

1980 rent differentials and 2000 data presented in this study. Comparing 1970 and 1980 regression with the same model for 2000 inter-city rents finds that region, climate, and race are no longer significant. As with the earlier study, the 2000 data showed that as median house value increases, rents will also increase. Similarly rental vacancy rates had no impact in predicting rents in the 2000 data, as was also found in 1970 and 1980 analysis. The 2000 variable measuring the percentage of rental housing in a market shows a strong positive correlation with

increasing rents, and was stronger and more significant than the original 1970 and 1980 data.

<Table 2 about here>

New rentals built within the last 5 years were shown to have no correlation with rent. This was consistent with the 1980 data, but at odds with the 1970 data, which found a positive correlation between new rentals and the increase in rents. Percentage of old rentals for 2000 had mixed results with one variable specified as percentage of really old housing having no impact yet another variable specified as percent of rental built before 1970 showed a negative impact. These mixed results in terms of specification of

the variable are at odds with the robust results from the 1970 and 1980 data, showing a definite relationship between the preservation of older housing stock and lower rents.

Interestingly, the percentage of the non-white population had no impact in the 2000 data compared to the original 1970 and 1980 data which showed a negative relationship between the percent non-white in a city and rents. Medium family income was the second strongest predictor of median rents by having a positive impact, as was the case in the original analysis.

Professionalization was significant, but only weakly correlated. *A priori*, as the percentage of professional landlords (those holding 50 or more rental units) increases, there would be more impetus for landlords to collude to keep rents high. The 2000 data shows that the original positive correlation between professionalization and rents has weakened since 1970/1980, but nevertheless still exists at a lesser impact.

Regression Equation: Adding Additional Explanatory Variables

Least-square multiple regression models were used to estimate the explanatory powers of the additional variables on median contract rent, according to the following equation:

$$\textbf{Median Contract Rent} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \ldots + \beta_i X_i$$

where:

α is the constant;

β_i is the partial coefficient for independent variables; and

X_i is the independent variable

Model 2 only included those "economic" variables and excluded sociological variables such as professionalization, and environment variables such as climate. Urban population size showed moderate significance leading median contract rents to increase, which did not happen in all other regression models. Median house value, rental percent, population growth, and family income remain the most significant economic factors that induce higher rents in cities.

The "professionalization" variable is omitted in model 3, while the variable "Amateur Landlord" was added. The addition of this variable had a negative effect on median rent. This finding indicates that "mom-and-pop" landlords (the managers of duplexes, triplexes and four-plexes) tend to charge lower rents. This might be a function of financing, where a prospective landlord would be required to put down up to 20% of the cost of five or more units, but only put down ten, five percent, or with no money down in order to purchase four units or less.

< Table 3 about here>

The variables "Anti-War" and "Same Sex" were added in Model 4 (see table 3). The "anti war" variable is significant and positively affects rent. The theory suggests that those who organized anti-war protests were also savvy enough to galvanize residents for better neighborhoods and communities by lobbying for zoning changes (Capek and Gilderbloom, 1992). There successful campaigns created better communities and had the unintended effect of inadvertently raising rents.

The "same sex" variable attempts to capture the effect of same sex couples (a reasonable proxy for gays) on median rents. This variable was found to positively affect rents in model 4. It is worth noting that there is difficulty in determining the proportion of unmarried same-sex adults sharing homes who are actually gay. One possibility is that both gay partners are employed and perhaps childless and their combined incomes allow them to pay higher rents. Also, gays may prefer to live in the vicinity of arts and cultural centers, where rents tend to be higher (Florida, 2002; Castells, 1983).

In model 5, the variable "Old Rental" was removed and replaced with "Medium Old Rental," which caused rents to fall. The reuse of medium old buildings and the concept of

historic preservation has a depressing effect on rents. Also, the variable "Professionalization" was substituted with "Amateur Landlords." A distinct relationship was found between the percentage of small duplexes, triplexes, fourplexes in a city and lowering of average rents.

In model 6 we added "Unemployment" to this equation, and unemployment was not significant in predicting rents. Our last regression in Model 7 deletes variables that are not close to significance, and tested to see if the correlations hold. The adjusted R square along with size and direction of correlations are nearly identical to Model 6. As highlighted, rents are impacted less by rental vacancy rates, new rentals (an increase in supply), old rentals, or by race. However, rents *are* affected by median house value, median family income (ability to purchase housing), percent rental, anti-war movements (measure of citizen organization and mobilization), same sex (gay measurement) and the level of professionalization of the rental housing market.

Regression Analysis: Removing Homeownership and Median Income

To examine the question of multicollinearity, we looked at the independent variables in two ways. First, we examined the zero order correlation coefficients to see if any of the variables are highly correlated. Two independent variables we are interested in, rental vacancy and race, have moderate/strong correlations (between .50 and .70) with median house value, median family income, and unemployment. Median house value, median family income, and unemployment also had moderately high correlations among them (between .50 and .70). According to Tabachnick and Fidell (2001, p.84), any bivariate correlations .70 or below should not cause significant multicollinearity problems to regression results (see also Gilderbloom et. al., 1992). In our models, all bivariate correlations between control and independent variables didn't exceed this threshold (the highest was .693). However, in order to eliminate any potential multicollinearity concerns, we reran regressions by omitting the aforementioned moderately correlated variables to see if our regression results would change. As shown in Table 4, unemployment was not included in Model 8. Median home value was omitted in Model 9, 10, and 12. Median family income was dropped from Model 11 and 12. After doing all this, race continued to be insignificant in all models. Vacancy rate only started to show a small negative relationship and began to predict rental prices in only Model 12. In the appendix, we put in a table of the zero order correlation coefficients to further demonstrate that multicollinearity is not a problem. While the strength of the correlation were either enhanced or diminished, none of them went from significant to non-significant, or vice versa, and the coefficients did not flip as a result. The amount of explained variation does decrease somewhat.

<Table 4 about here>

In addition to the correlation test, we also performed a tolerance test, which is another form of measuring multicollinearity, and checked for tolerance scores for all variables in every model. All tolerance scores were higher than .20, which confirmed that there is no multicollinearity issue in our models.

Region was significant only in model 12 after median house value and median family income were removed from the regression, arguing that areas in the South and in warmer climates resulted in lower rents. Urban population has no statistical significance, but population growth (1990 to 2000) is significant in all five specifications (Gilderbloom and Ye, 2007). Depending on the specification of the equation, older rental units have a negative correlation on rents. Non-white continues to show to be statistically insignificant. The median family income (Gilderbloom and Ye, 2007) is shown to be the most powerful indicator, even when median house value has been removed from this regression model. The lack of plumbing variable continues to show no relationship, while for climate, three of the five models showed a positive relationship between good climate and higher rents. As the number of amateur landlords increase, median rents fall.

The strength of anti-war organizing continues to show a positive impact on median rents. Same sex households also have a positive impact on rents. As the percentage of same sex households increases, the rents increase. We believe that this correlation needs more study before a claim is made that it is casual. In this regression analysis, unemployment becomes significant in Models 11 and 12, showing that as employment increases, rents will decrease.

Policy Implications/Conclusions

Creating and maintaining affordable housing in any U.S. city is a major challenge. No real effort has been made to develop a dynamic theory of inter-city rent variation beyond the simplistic supply and demand model. This theory has found only spotty empirical support. It is critical to find out the sociological elements that cause rents to increase or decrease across cities in conjunction with economic factors. Ray Pahl (1975) argues that urbanists need to find out the factors that cause a scarce basic necessity such as housing to vary in price across cities. Why are rents high in some cities and low in others? Pahl argues that "urban problems are too big to leave to traffic engineers, economists and what have you" (1975, p. 200).

This study is among the first to fill this void. Conventional wisdom sees the "housing crisis" as an inadequate number of housing units available. If enough additional housing is created and brought to market, vacancy rates will increase, the price of rent will drop, and there will be ample affordable housing. The greater the housing supply, the lower the rents. The larger the market of available housing, the more competitive the urban area will be in attracting new growth. In addition, newer housing stock is always preferable to older housing stock. By eliminating older housing stock and replacing it with newer housing stock, housing will cease to be problematic, even for high income earners.

Our analysis suggests that vacancy rates are mostly insignificant in 8 of the 12 specifications. Of the four specifications that are significant, one shows a significant relationship in the opposite direction, and three show a small negative correlation indicating that large vacancy increase can cause rents to fall only a small amount. However, this small increase is never enough to make rents affordable for the millions of renters paying unaffordable rents. Tenants could save more by learning to cut coupons for groceries.

Newer housing stock which tends to be much higher in price than older stock only exacerbates the affordability problem by pushing rental prices even higher.

The previous study done by Gilderbloom and Appelbaum (1988) using the 1970 and 1980 data indicated that the presence of non-whites caused average rents to fall in the city, that as the percentage of non-whites increased, the price of median rents fell. However, this is no longer the case when looking at the same cities for the year 2000. This needs further analysis to see whether this is a causal relationship or not. Newly available data creates an imperfect proxy variable "same sex households" for measuring the percentage of gays in cities. Same sex households have a positive correlation with rents, but we cannot say for sure whether it's a causal relationship or whether one causes the other. A similar criticism could be made of the anti-war protest movement. Did the culture of the anti-war movement "bring the war home" for a higher quality of neighborhood life through zoning, planning, historic preservation, bike lanes, crime prevention programs, two-way streets? More research needs to be done that identifies whether this holds as a casual relationship but in this paper we don't want to overreach in our conclusions. Moreover, a more complete analysis of variation in rents could be done by adding in certain social variables, such as banking, planning, zoning, and real estate organizations.

Supply-and-demand models ignore sociological factors such as the effects of banks, social organizing of landlords, developers, planners and governments which undoubtedly obstruct market forces. They went on to demonstrate not only that in reality do housing markets deviate from Olson's (1969) assumptions, but also, that such departures are likely to influence rents.

The heart of sociology is examining the social aspects of life and how groups can impact life chances. This analysis shows that, at the very least, there is a correlation in terms of how landlords are organized socially and their impact on rents, as well as

showing how race, same sex households, and the presence of urban movements that creates and impacts culture play a role in shaping rents. This analysis shows the power of a sociological analysis that incorporates economic and social features as an analytic tool. An economic analysis by itself without a social context provides an incomplete analysis of how rents are structured.

What can planners and policy makers do to create more affordable housing? Planners can preserve and encourage rehabilitation of older rental stock, improve existing housing affordability by moderating median home values, and limit large scale rental developments that encourage landlord professionalization. Professional landlords can afford to keep vacancy rates higher while maintaining higher rental prices while amateur landlords cannot. Either it is some rent or no rent. For someone controlling 100 apartment units with a 5% vacancy rate, having five vacant apartment units is not a big cost and is calculated as a part of the business plan to paint, refurbish, and upgrade so that the landlord can charge higher rents. Decentralizing ownership by encouraging more "mom and pop" landlords is another way to reduce rent burdens or encouraging condominiums conversions which makes homeownership more affordable. The new or old urbanist idea of having a secondary unit in the basement, attic or garage or converting an old 3,000 square foot house into two, three or four units is a proven strategy to create greater housing affordability for both homeowners and renters.

Older rental stock is available at lower rental rates and tends to preserve existing neighborhoods and their amenities. You cannot build new housing for the price of old housing. We also found that mom and pop landlords, duplexes, triplexes, four-plexes have lower rents, planners should insist on supporting these kinds of units over large mega-structures. Policies can be implemented which encourage infill housing and policies that places rental housing and condominiums in existing neighborhoods where utility

infrastructure is available. Also, allowing homeowners to develop secondary apartment units is also a proven strategy to reduce rental housing costs. These strategies create more sustainable communities that cut back on wasting resources.

Finally, the fact that the price of homeownership is highly correlated with rents should cause policy makers to see the two as not separate, but as one interconnected policy. The price of housing creates a ceiling of what renters will pay. If the ceiling on housing prices can be held steady, then rents will not increase as much. However, if housing prices go up, rents will also follow. One way of cutting the price of homeownership is to allow for condominiums and small scale cottages, shotguns and camelbacks to be integrated into housing developments, both old and new.

Our theory is grounded in empirical research demonstrating how sociological factors, in conjunction with public policies and economics, help shape the rental housing market. We contend that sociology needs to be put back into the equation, because without it any analysis of rental housing markets would be incomplete.

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Table 1: Factors Affecting Median Monthly Rent Across a Sample of Cities, 2000

Descriptive Statistics (N=149)

	Minimum	Maximum	Mean	Std. Deviation
Median Contract Rent	261	886	447.01	100.21
Region	0	1	.46	.50
Median House Value	35500	469300	94759.73	49521.41
Rental Vacancy	1.82	18.32	8.870	2.90
Rental Percent	28.46	62.39	44.51	7.22
Urban Population	10732	1952132	221449	259625
PopulationGrowth90to00	-12.23	85.40	8.81	14.48
New Rental (Built in last five years)	.08	20.30	5.99	3.97
Old Rental (Built before 1960)	9.55	80.03	37.21	16.82
Medium Old Rental (Built between 1950-1970)	27.27	69.80	49.01	8.48
Nonwhite	3.49	80.49	32.20	16.71
Median Family Income	26415	71293	42907.95	7708.21
Lack of Plumbing	.00	2.02	.77	.35
Unemployment	2.53	14.04	7.38	2.33
Professionalization	3.15	37.41	13.14	5.34
Amateur Landlord	8.85	59.59	23.49	9.36
SameSex[1]	.15	1.68	.60	.26
Climate[2]	238	903	530.34	105.87
Anti War[3]	0	2	.095	.41

Data Source: Decennial Census, Summary File 3 (SF3)

1. Decennial Census, Summary File 1 (SF1)
2. David Savageau and Geoffrey Loftus. (1997). *Place Rated Almanac (5th Edition).* Macmillan Publishing Company.
3. Stella Capek and John I. Gilderbloom. 1992. Community Versus Commodity. Albany, NY: SUNY Press

Table 2. Comparisons of Original Gilderbloom-Appelbaum Model

	1970	1980	Model 1 (2000)	Model 2 "Economic Model"
(Constant)	-	-	40.193	64.943
Region	9.90300**	-8.48***	-11.471	-13.137
	[-.29]	[-.12]	[-.057]	[-.066]
Median House Value	.00080***	.0002**	.888***	.943***
($1,000)	[.14]	[.34]	[.439]	[.466]
Rental Vacancy	.48695	1.407‡	-3.114	-2.275
	[.07]	[.10]	[-.090]	[-.066]
Rental Percent	.1424	.77‡	2.384***	2.801***
	[.05]	[.14]	[.172]	[.202]
Urban Population	-1.66486	-.000001	2.234	4.026*
(100,000)	[-.02]	[-.01]	[.058]	[.104]
Population Growth	.06881***	.1697‡	1.638***	1.712***
(10 year period)	[.15]	[.12]	[.237]	[.247]
New Rental	.50023**	.20	-.657	-1.628
(Built in last five years)	[.24]	[.05]	[-.026]	[-.065]
Old Rental	-.10073‡	.5190***	.120	-.119
(Built before 1960)	[-.10]	[-.21]	[.020]	[-.020]
Medium Old Rental				
(Built between 1950-70)	-	-	-	-
Nonwhite	.01216	-.296***	.391	.290
	[.07]	[-.12]	[.065]	[.048]
Median Family Income	.00771**	.0070**	4.024***	3.931***
($1,000)	[.49]	[.45]	[.310]	[.302]
Lack of Plumbing	-.02019	3.711***	5.911	8.251

	[-.004]	[.13]	[.020]	[.029]
Climate	.0048 [.03]	.040*** [.12]	.030 [.031]	-
Professionalization	.34*** [.06]	.1965*** [.12]	1.828* [.097]	-
Amateur Landlord	-	-	-	-
Anti War	-	-	-	
Same Sex	-	-	-	-
Unemployment	-	-	-	-
F Statistics	49.86564	29.023	72.949***	82.744***
R Square	.87	.75	.875	.869
Adjusted R Square	-	-	.863	.859
N	112	140	149	149

Beta values in brackets. Unstandardized regression coefficients are first.
*** Significant at .001 level ** Significant at .01 level * Significant at .05 level ‡ ≤ .10

Table 3. Additional Explanatory Variables (N=149)

	Model 3	Model 4	Model 5	Model 6	Model 7
(Constant)	46.622	109.393	265.915***	281.242***	199.190***
	(50.232)	(46.189)	(56.807)	(58.749)	(43.004)
Region	-12.974	-4.769	1.150	.277	
	(8.422)	(8.138)	(7.185)	(7.234)	
	-.065	-.024	.006	.001	
Median House Value	.874***	.892***	.993***	.989***	.059***
($1,000)	(.111)	(.099)	(.098)	(.098)	(.082)
	.432	.441	.491	.489	.474
Rental Vacancy	-2.786	-1.424	-1.910	-1.928	
	(1.442)	(1.315)	(1.253)	(1.253)	
	-.081	-.041	-.055	-.056	
Rental Percent	3.250***	584**	1.423*	1.503*	1.721***
	(.571)	(.583)	(.555)	(.561)	(.499)
	.234	.114	.103	.108	.124
Urban Population	3.076*	2.356	2.013	1.809	
(100,000)	(1.323)	(1.230)	(1.162)	(1.179)	
	.080	.061	.052	.047	
Population Growth	1.707***	1.417***	1.302***	1.346***	1.351***
90to00	(.385)	(.348)	(.321)	(.324)	(.219)
	.247	.205	.188	.194	.195
New Rental	-.616	.556	-.622	-.655	
(Built in last five years)	(1.360)	(1.299)	(1.170)	(1.171)	
	-.024	.022	-.025	-.026	
Old Rental	.493	.183			
(Built before 1960)	(.392)	(.373)			
	.083	.031			
Medium Old Rental			-2.058***	-1.979***	-1.617***
(Built between 1950-70)			(.540)	(.545)	(.474)
			-.174	-.167	-.137
Nonwhite	.241	.086	.312	.398	
	(.280)	(.251)	(.244)	(.258)	
	.040	.014	.052	-.066	
Median Family Income	4.140***	3.488***	3.392***	3.085***	3.417***
($1,000)	(.737)	(.668)	(.623)	(.691)	(.514)
	.318	.268	.261	.237	.263
Lack of Plumbing	13.420	5.405	3.470	3.502	
	(11.517)	(10.384)	(9.851)	(9.849)	
	.046	.019	.012	.012	
Climate	.014	-.017	-.033	-.031	
	(.036)	(.032)	(.031)	(.031)	
	.015	-.018	-.035	-.033	
Professionalization					
Amateur Landlord	-1.540**	-1.157*	-2.239***	-2.196***	-2.092***
	(.486)	(.459)	(.478)	(.480)	(.462)
	-.144	-.108	-.209	-.205	-.195
Anti War		31.483***	31.943***	33.306***	34.070***

		(8.786)	(8.238)	(8.344)	(7.221)
		.127	.129	.135	.138
Same Sex		71.543***	57.604***	57.266***	72.566***
		(15.662)	(14.793)	(14.795)	(13.847)
		.182	.147	.146	.185
Unemployment				-1.824	
				(1.786)	
				-.042	
F Statistics	75.308***	84.062***	94.041***	88.257***	169.050***
R Square	.879	.905	.914	.915	.906
Adjusted R Square	.867	.894	.904	.904	.901

Numbers in parentheses are standard errors. The first row is unstandardized coefficients. The last row is standardized coefficients (Beta values). Tolerance scores for every model were checked and there is no Multicollinearity issue, with all the tolerance scores higher than .20. *** Significant at .001 level ** Significant at .01 level * Significant at .05 level

Table 4. Regression Analyses: Removing Homeownership Price and Household Income (N=149)

	Model 8	Model 9	Model 10	Model 11	Model 12
(Constant)	40.193	-10.227	6.148	446.039***	305.089***
	(51.140)	(61.656)	(68.998)	(48.844)	(73.030)
Region	-11.471	-17.649	-14.741	.215	-24.788*
	(8.574)	(10.215)	(9.386)	(7.732)	(11.489)
	-.057	-.088	-.074	.001	-.124
Median House Value	.888***			1.212***	
($1,000)	(.112)			(.090)	
	.439			.599	
Rental Vacancy	-3.114	-4.184*	-4.415*	-2.820*	-8.643***
	(1.479)	(1.614)	(1.628)	(1.322)	(1.912)
	-.090	-.121	-.128	.082	-.250
Rental Percent	2.384***	2.719***	2.717***	1.389*	3.181***
	(.581)	(.727)	(.726)	(.599)	(.893)
	.172	.196	.196	.100	.229
Urban Population	2.234	.246	.238	1.892	-.553
(100,000)	(1.478)	(1.560)	(1.550)	(1.260)	(1.909)
	.058	.006	.006	.049	-.014
Population Growth	1.638***	1.445***	1.458***	1.587***	2.233***
90to00	(.391)	(.441)	(.430)	(.342)	(.518)
	.237	.209	.211	.229	.323
New Rental	-.657	-.267	-.261	-.472	.531
(Built in last five years)	(1.394)	(1.644)	(1.551)	(1.250)	(1.911)
	-.026	-.011	-.010	-.019	.021
Old Rental	.120	-.149			
(Built before 1960)	(.357)	(.472)			
	.020	-.025			
Medium Old Rental			-.422	-1.857**	.955
(Built between 1950-70)			(.693)	(.582)	(.831)
			-.036	-.157	.081
Nonwhite	.391	.544	.608	.360	.637
	(.286)	(.335)	(.341)	(.275)	(.421)
	.065	.091	.101	.060	.106
Median Family Income	4.024***	6.451***	6.643***		
($1,000)	(.747)	(.860)	(.788)		
	.310	.496	.511		
Lack of Plumbing	5.911	19.465	19.002	-9.411	-8.399
	(11.736)	(12.946)	(12.899)	(10.036)	(15.403)
	.020	.067	.066	-.033	-.029
Climate	.030	.128***	.126***	-.060	.147***
	(.036)	(.035)	(.035)	(.032)	(.043)
	.031	.135	.133	-.063	.155
Professionalization	1.828*				
	(.742)				
	.097				
Amateur Landlord		-1.317*	-1.681**	-.243***	-1.479
		(.579)	(.632)	(.512)	(.780)

		-.123	-.157	-.210	-.138
Anti War		27.938*	28.426*	40.768***	46.939***
		(11.172)	(11.045)	(8.738)	(13.357)
		.113	.115	.165	.190
Same Sex		73.345***	68.197***	59.728***	82.544***
		(19.756)	(19.563)	(15.801)	(24.049)
		.187	.174	.152	0.211
Unemployment		-2.773	-2.490	-5.289**	-13.013***
		(2.361)	(2.366)	(1.719)	(2.481)
		-.065	-.058	-.123	-.303
F Statistics	72.949***	49.571***	49.690***	81.249***	31.632***
R Square	.875	.848	.849	.902	.768
Adjusted R Square	.863	.831	.832	.891	.743

Numbers in parentheses are standard errors. The first row is unstandardized coefficients. The last row is standardized coefficients (Beta values). Tolerance scores for every model were checked and there is no Multicollinearity issue, with all the tolerance scores higher than .20. *** Significant at .001 level ** Significant at .01 level * Significant at .05 level

Appendix

Correlation Matrix (N=149)

	Rent	Region	Rental Vacancy	Rental Percent	Population Growth	New Rental	Old Rental	Medium Old Rental	Nonwhite	Lack Plumbing
Rent	1	-.219(**)	-.594(**)	.320(**)	.489(**)	.288(**)	-.334(**)	.060	-.024	-.037
Region	-.219(**)	1	.345(**)	.025	.032	.155	-.435(**)	.395(**)	.372(**)	-.078
Rental Vacancy	-.594(**)	.345(**)	1	-.156	-.282(**)	-.130	.105	.040	.258(**)	.032
Rental Percent	.320(**)	.025	-.156	1	-.129	-.090	.162(*)	-.177(*)	.467(**)	.343(**)
Population Growth	.489(**)	.032	-.282(**)	-.129	1	.768(**)	-.638(**)	.027	-.166(*)	-.153
New Rental	.288(**)	.155	-.130	-.090	.768(**)	1	-.641(**)	-.052	-.179(*)	-.258(**)
Old Rental	-.334(**)	-.435(**)	.105	.162(*)	-.638(**)	-.641(**)	1	-.592(**)	-.031	.318(**)
Medium Old Rental	.060	.395(**)	.040	-.177(*)	.027	-.052	-.592(**)	1	.233(**)	-.171(*)
Nonwhite	-.024	.372(**)	.258(**)	.467(**)	-.166(*)	-.179(*)	-.031	.233(**)	1	.450(**)
Lack of Plumbing	-.037	-.078	.032	.343(**)	-.153	-.258(**)	.318(**)	-.171(*)	.450(**)	1
Unemployment	-.332(**)	.116	.305(**)	.347(**)	-.295(**)	-.299(**)	.257(**)	-.005	.576(**)	.425(**)
Free Utility	-.163(*)	-.278(**)	.079	.041	-.442(**)	-.433(**)	.591(**)	-.231(**)	-.197(*)	.092
Same Sex	.550(**)	-.093	-.322(**)	.567(**)	.087	-.018	.075	-.123	.278(**)	.265(**)
Professionalization	.342(**)	.035	-.069	.236(**)	.136	-.013	-.248(**)	.207(*)	.182(*)	.143
Amateur Landlord	-.240(**)	-.300(**)	-.018	.278(**)	-.315(**)	-.235(**)	.655(**)	-.693(**)	-.049	.279(**)
Climate	.322(**)	-.053	-.002	.223(**)	.035	-.066	.048	.017	.147	.011
Median House Value	.844(**)	-.217(**)	-.524(**)	.263(**)	.286(**)	.143	-.223(**)	.180(*)	-.033	-.054
Urban Population	.311(**)	.012	-.144	.118	.268(**)	.129	-.245(**)	.087	.215(**)	.111
Median Family Income	.723(**)	-.193(*)	-.547(**)	-.094	.460(**)	.350(**)	-.428(**)	.146	-.385(**)	-.392(**)
Anti War	.297(**)	-.424(**)	-.243(**)	.338(**)	-.151	-.340(**)	.288(**)	-.165(*)	.075	.232(**)

Correlations Correlation Matrix (N=149) (Cont'd)

	Unemployment	Free Utility	Same Sex	Professionalization	Amateur Landlord	Climate	Media House Value	Urban Population	Medium Family Income	Anti War
Rent	-.332(**)	-.163(*)	.550(**)	.342(**)	-.240(**)	.322(**)	.844(**)	.311(**)	.723(**)	.297(**)
Region	.116	-.278(**)	-.093	.035	-.300(**)	-.053	-.217(**)	.012	-.193(*)	-.424(**)
Rental Vacancy	.305(**)	.079	-.322(**)	-.069	-.018	-.002	-.524(**)	-.144	-.547(**)	-.243(**)
Rental Percent	.347(**)	.041	.567(**)	.236(**)	.278(**)	.223(**)	.263(**)	.118	-.094	.338(**)
Population Growth	-.295(**)	-.442(**)	.087	.136	-.315(**)	.035	.286(**)	.268(**)	.460(**)	-.151
New Rental	-.299(**)	-.433(**)	-.018	-.013	-.235(**)	-.066	.143	.129	.350(**)	-.340(**)
Old Rental	.257(**)	.591(**)	.075	-.248(**)	.655(**)	.048	-.223(**)	-.245(**)	-.428(**)	.288(**)
Medium Old Rental	-.005	-.231(**)	-.123	.207(*)	-.693(**)	.017	.180(*)	.087	.146	-.165(*)
Nonwhite	.576(**)	-.197(*)	.278(**)	.182(*)	-.049	.147	-.033	.215(**)	-.385(**)	.075
Lack Plumbing	.425(**)	.092	.265(**)	.143	.279(**)	.011	-.054	.111	-.392(**)	.232(**)
Unemployment	1	.060	.068	.000	.216(**)	.081	-.276(**)	-.094	-.651(**)	.189(*)
Free Utility	.060	1	-.065	.089	.291(**)	.022	-.065	-.157	-.216(**)	.092
Same Sex	.068	-.065	1	.410(**)	-.032	.323(**)	.383(**)	.345(**)	.143	.262(**)
Professionalization	.000	.089	.410(**)	1	-.340(**)	.112	.193(*)	.518(**)	.126	.002
Amateur Landlord	.216(**)	.291(**)	-.032	-.340(**)	1	-.090	-.156	-.273(**)	-.264(**)	.272(**)
Climate	.081	.022	.323(**)	.112	-.090	1	.433(**)	.113	.068	.149
Median House Value	-.276(**)	-.065	.383(**)	.193(*)	-.156	.433(**)	1	.128	.660(**)	.227(**)
Urban Population	-.094	-.157	.345(**)	.518(**)	-.273(**)	.113	.128	1	.127	-.040
Median Family Income	-.651(**)	-.216(**)	.143	.126	-.264(**)	.068	.660(**)	.127	1	.081
Antiwar	.189(*)	.092	.262(**)	.002	.272(**)	.149	.227(**)	-.040	.081	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

END NOTE

[1] After consulting the Kentucky State Data Center (KYSDC), there is no data on the square footage of cities nor broken down by houses on the average. The 2000 Census questionnaire revealed no questions were asked on housing unit size or city size in square feet. Also, Summary File 3 of 2000 census revealed no such data exist. A demographer at the KYSDC, stated that some square footage data is available on the American Housing Survey (AHS) of the U.S. Census Bureau, however, this is done for a sample of cities (not a 100% count), and the cities in the sample changes from survey point to survey point. The only other way to acquire complete data on square footage of cities and for housing units would be to individually contact city tax assessors and we simply don't have the resources to do that. Even if the data were found, we don't think the regression coefficients would have been changed in any significant manner.

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