

Why Do Gay Men Live in San Francisco?

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San Francisco is known as one of America's loveliest cities—a city with a wealth of natural beauty, a mild climate, unusually elegant neighborhoods, an array of fine restaurants, and a world-class arts and entertainment community. Given the inherent attractiveness of the city, it is hardly coincidental that San Francisco has the highest housing cost of any major city in the continental United States. As Sherwin Rosen (1979) pointed out some two decades ago, in equilibrium people who live in particularly attractive cities must “pay” in the form of higher property rental prices and also possibly lower wages; valued amenities are capitalized into the hedonic rent and wage gradient.

San Francisco is also well known for its unusually large gay (male) community. In this paper we argue that this feature of San Francisco is also not coincidental. Our argument is simple. Gay households face constraints that make having or adopting children more costly than otherwise similar heterosexual or lesbian households. This reduces the lifetime demand for housing (and some other goods, such as children's education) while at the same time freeing lifetime resources to be allocated elsewhere. If “local amenities” are a normal good, gay men will disproportionately sort into high-amenity locations like San Francisco.

This economic argument is quite different from the historical and sociological literature on location decisions of gay individuals. For example, in his historical account of the growth of San Francisco's gay community John D'Emilio (1989) points to the important causal role of gay sailors being discharged from the Navy in San Francisco and then remaining in the area. One might point to other cities that developed large gay communities due to analogous “historical accidents.” While we certainly do not wish to dismiss the importance of such idiosyncratic events, we are persuaded that a simple economic explanation provides a useful, systematic way of understanding the geographic distribution of gay individuals in the United States.

Similarly, other researchers have argued that gay individuals' decisions to reside in any particular urban area depend on the area's prevailing social and political views toward gays.¹ Again, while it seems likely that such considerations are important to location decisions of many gay individuals, we believe that available evidence points to the simple economic explanation as a more useful model for predicting the spatial distribution of gay households.

We view our paper as making two contributions. First, we provide a simple model of location choice, along the lines of Rosen (1974, 1979) and Jennifer Roback (1982), which highlights a number of important issues surrounding city amenities and location choice. We use our model to discuss the location decisions of gay individuals. Second, we provide what we believe to be the first systematic evidence about the spatial distribution of male same-sex partnerships ("gay" couples) across large U.S. urban areas, using the 1990 U.S. Census. (For comparison, we also provide statistics on the geographic distribution of lesbian couples.) We use these data to test the key proposition of our model—that gay men systematically reside in high-amenity urban areas that, like San Francisco, have high housing costs.

In our model, households are heterogeneous with regard to levels of human capital. In general, households that have high levels of human capital, and that therefore have high lifetime income, locate in high-amenity cities since local amenities are a normal good. Similarly, households differ in their lifetime demand for housing, due to differences in the number of children present in the household. Those households with low demand for housing, including a disproportionate number of gays, locate in high-amenity cities.

It is clear that there is a potentially serious complication to an empirical evaluation of our central prediction that gay men will locate in high-amenity cities. Suppose that high-amenity cities are populated by people with high lifetime income potential, that is, by generally well-educated individuals with strong labor-market skills. It seems possible that tolerant social attitudes and education are positively correlated. In this case, it becomes difficult to distinguish empirically between our economic argument about the location decisions of gays, and an alternative view that gay households simply locate where residents have

¹ For instance, Stephen Murray (1996) argues that gays have perceived San Francisco "as a place in which being gay is celebrated, accepted, or at least tolerated as 'no big deal' – whichever was enough to be 'better than where I am now'" (p. 223-24).

generally tolerant attitudes. Fortunately, we can make some headway in evaluating the relative importance of housing costs and social attitudes by using data from the General Social Survey to examine cross-city variation in attitudes towards gays as measured by the responses of residents to questions about homosexual sex.

To the extent that we are correct in arguing that gay households sort disproportionately into high-amenity urban areas, there is a sense in which one can loosely interpret our list of cities ordered by concentration of gay households as a ranking of cities by “adult-related amenities.” Of course, the same economic logic that predicts gay households will sort toward areas with high levels of adult-related amenities predicts that these households will sort away from child-oriented spatially-tied public goods, like a good city public school system. Our “ranking” explicitly excludes such attributes from consideration.² As such, this “ranking” should be thought of as an ordering of metropolitan areas, not as means of ranking intrametropolitan neighborhoods.³

Because our work ties closely to the literature on ranking cities by amenities we turn in Section I to a very brief discussion of this work, adding a simple model that highlights some key issues. In Section II we present empirical evidence. Section III provides concluding remarks.

I. Ranking Cities by Amenities, A Simple Model

American cities provide residents with tremendous variation in the variety and quality of local amenities. It is an inherently interesting question which cities are the “nicest,” and indeed a great deal of energy and effort has been devoted to ranking cities by amenities, both in the popular press and in academic literature. As we mention above, economists have a natural way of thinking about this issue. Rosen (1979) and Roback (1982, 1988) provide clear discussions of how amenities are capitalized in local rental prices and wages, and show how hedonic prices for various valued amenities can be identified and

² Indeed, below we provide some evidence that within metropolitan regions, gay households disproportionately locate away from suburban areas, which might generally have stronger school systems and other child-related amenities.

³ Other researchers have noted that gays and lesbians tend to concentrate geographically within cities (e.g., Stephen Murray, 1996). This may reflect demands for “gay-specific” amenities, such as the proximity to other gays or gay organizations, or may simply reflect Tiebout sorting for goods that gays do not value as highly as other households (e.g., public schools).

used as weights in constructing amenities indices. The Rosen-Roback theory has spurred a growing number of empirical and theoretical papers that take seriously the task of evaluating urban amenities.

A prominent example of this literature is the ranking given by Glenn Blomquist, Mark Berger, and John Hoehn (1988). These authors estimate hedonic wage and rent equations using extensive county-level data on climate and other environmental factors (e.g., the presence of toxic waste dumps), as well as measures of the crime rate and student-teacher ratios. They then back out an implied price for the county's amenities endowment, and provide a ranking of urban areas by this amenities price. Serious practical problems to this approach include sensitivity to specification, and, importantly, the inability of researchers to quantify and collect data for a great many attributes.⁴

Matthew Kahn (1995) pursues an innovative approach to ranking city quality-of-life that does not require observation of all relevant city attributes. For each of several large U.S. cities, he estimates separate regressions in which wages and housing rental prices are regressed on a variety of individual characteristics. He then forms for each person a prediction of his wages and rent in all cities where the person does *not* live. A city with a high amenity ranking will generally be populated by individuals who have lower wages than they would receive elsewhere or who pay higher rent than they would face in other cities (or both). As Kahn notes, this approach has difficulties of its own if there are unobserved productivity differences among individuals, and if workers who are generally more productive (and who therefore generally have higher wages) locate in cities with a higher amenities levels. We return to this issue momentarily.

In principle, there is a third way of empirically ranking cities by amenities. If one could find exogenous variation in life circumstances, and if this resulted in predictable variation in location choices, such variation could be exploited for studying city amenities. We draw out this point in the illustrative model that follows. Our model is intended to provide a useful vehicle for discussing some of the issued

⁴ Mark Stover and Charles Leven (1992), using the Blomquist, *et al.* data, but employing a different specification, give a ranking of urban areas that differs substantially from the Blomquist, *et al.* rankings (the Spearman rank order correlation between the two rankings is zero). Joseph Gyourko, Matthew Kahn, and Joseph Tracy (1996) provide an overview of the issues at hand. They conclude that this type of empirical research on urban quality-of-life is likely to be subject to serious data problems. They argue that "there appears to be no econometric or methodological solution on the horizon. Data on more urban areas

involved in ranking of locations by amenities, and also allows us to frame our arguments about location decisions of gay men.⁵

We consider a case in which there are two cities, a and b , each with a different level of a location-tied amenity A . This amenity affects individuals' utility, but has no direct effect on firms' production costs. There are a fixed number of individuals who wish to live in the two cities. These individuals have the same class of preferences over housing (H), non-housing consumption (X), and the local amenity, characterized by a simple Stone-Geary utility function. For any individuals residing in location i ($i=a, b$),

$$(1) \quad U_i = 2A_i(X - \mathbf{a}_X)^{1/2}(H - \mathbf{a}_H)^{1/2}.$$

Notice that our specification is "reduced form" in the following sense: the parameters that drive demand for housing and non-housing consumption, the α terms in (1), are determined by other factors, some of which are themselves decisions of the household. For example, the housing demand parameter might depend on family size. For the moment, we abstract from this issue and for the moment we assume also that the parameters in the utility function are the same for all individuals.

We imagine that each individual has a human capital endowment s that is supplied inelastically to the local market, with the return to s in market i given by w_i . If we then let the price of the non-housing good X be the numeraire (assuming that this price is the same in the two cities) and let r_i be the rental price of housing, we can easily derive the indirect utility function. For an individual with endowment s locating in site i ,

$$(2) \quad V_i = A_i r_i^{-1/2} (w_i s - \mathbf{a}_X - r_i \mathbf{a}_H).$$

Notice that indirect utility is an increasing linear function of s , and moreover that the slope of the function rises with A , making this an especially easy case to analyze.

Assuming costless mobility, each individual will choose to locate in the city that provides higher indirect utility. Intuitively, we might expect that since the amenity is a normal good, equilibrium will

will help, and richer databases that more fully describe local amenity, environmental, and fiscal conditions are absolutely necessary."

entail individuals with high endowments sorting into the high-amenity location. This intuition turns out to be correct.

Let $A_a > A_b$ so that site a has a higher level of the local amenity. If in equilibrium there are people located in both cities, there must be some value of the human capital endowment, say \hat{s} , for which $V_a = V_b$. An individual with such an endowment would be indifferent between the two sites. Notice that by definition,

$$(3) \quad A_a r_a^{-1/2} (w_a \hat{s} - \mathbf{a}_X - r_a \mathbf{a}_H) = A_b r_b^{-1/2} (w_b \hat{s} - \mathbf{a}_X - r_b \mathbf{a}_H).$$

This latter condition can hold, of course, only if the differential amenity level is capitalized in the wage, the rental price, or both. Suppose, as an extreme example, that production costs to employers are the same in the two sites (which would generally be true only if land is not a factor of production) so that wages are the same in the two cities. Then clearly $r_a > r_b$. More generally, if land is a factor in production, firms will hire workers in both locations only if equilibrium wages are lower in the site with higher rental prices, or $w_a < w_b$.

With this in mind, consider Figure 1, which graphs indirect utility in each city as a function of s . Given that the wage is lower and/or the rental price is higher in a , the horizontal intercept of V_a , $s_a = (\mathbf{a}_X + r_a \mathbf{a}_H) / w_a$, must be to the right of the corresponding intercept of V_b . Indirect utility is of course increasing in s in each city, but increases at a more rapid rate in city a .⁶ Individuals with endowment \hat{s} will be indifferent between locations, individuals with higher endowments will locate in the city with the higher amenity level, and those with lower endowments locate in the low-amenity city.

Our example highlights an unavoidable difficulty to ranking cities by amenity levels. As Kahn (1995) points out, if a city is a high-amenity site, an individual living in that city would earn a higher return to their human capital endowment and/or face a lower rental price in the alternative city. While *returns to the human capital endowment (that is, "wages")* in the high-amenity city a are indeed lower

⁵ For a more general discussion, see Rosen (1974, 1979), Roback (1982, 1988) and the nice review article by Gyourko, Kahn, and Tracy (1996).

⁶ If not, then utility would be higher in city b for all individuals. For future reference note that for an equilibrium in which individuals reside in both cities, we must have $A_a r_a^{-1/2} w_a > A_b r_b^{-1/2} w_b$.

than in b , $income$ may well be higher for individuals in city a , as residents of a have higher endowments of s . If all relevant components of s (experience, education, ability, *et cetera*) are observed, then wages can be inferred and used to rank the two locations. If, on the other hand, the unobservable component of s is sufficiently large, inference about the ranking of amenities will not be possible using income data; the revealed preference approach will not work for such instances.⁷

Similar concerns pertain to the estimation of hedonic price equations. Suppose a measure of city attribute A is available, along with income (and hours worked) data for individuals in a number of cities like our cities a and b in the model above. A regression of income per hour worked against an observed measure of the amenity A will give an inconsistent estimate of the effect of the amenity on local returns to the individuals' endowments, and might even give the wrong sign. (Including observable components of s , like education, in the regression will help, but is unlikely to resolve the problem; earnings equations seldom explain half of the variation in the data.) A further practical problem in applying the hedonic approach, as we have mentioned, is that consistent parameter estimates (and therefore index weights) can be had only if all relevant amenities are included.⁸

Our simple model suggests an alternative approach to the problem of ranking cities by amenities. In particular, suppose that there is exogenous variation in individuals' preference parameters, \mathbf{a}_X and \mathbf{a}_H . For simplicity, imagine that there are two groups. Individuals in both groups draw a human capital endowment s from the same distribution, but the second group has a lower value of one of the preference parameters.⁹ From the arbitrage condition, note that individuals live in the higher-amenity city when s

⁷ Although we do not model the problem here, similar concerns arise on the housing side. At issue is how one infers how much an individual in one city would have to pay for an equivalent housing unit in some other city. Typically we only have data (from the Census) on a limited number of characteristics—number of rooms, vintage, etc. There could be large unobservable characteristics in housing units across cities that are correlated with local amenities. Thus, a typical three-bedroom town-house vintage 1950-59 in a high-amenity city might be quite different from a corresponding unit in a lower-amenity city.

⁸ Kahn (1995, p. 224) provides a nice discussion of this point.

⁹ Given the simple form of our model, it is easy to generalize by assuming that the two groups are assigned preference parameters randomly drawn from distinct distributions. Similarly, we can specify the utility function to allow individuals to have different tastes for the amenities. These complications muddle notation and provide no additional insight.

equals or exceeds $\hat{s} = \mathbf{q}_0 \mathbf{a}_X + \mathbf{q}_1 \mathbf{a}_H$, where \mathbf{q}_0 and \mathbf{q}_1 are positive constants.¹⁰ Thus individuals in the second group will have a lower \hat{s} . Equivalently, a higher fraction of this second group will prefer to locate in the high-amenity location.

The idea is straightforward. Suppose there is a group for whom the minimum level of housing consumption is lower than for other individuals, that is, a group for whom \mathbf{a}_H is relatively small. These individuals would optimally allocate a higher fraction of lifetime resources to “goods” other than H , including the local amenity. In equilibrium a larger proportion of such individuals will locate in high-amenity sites.

Notice that our argument requires that observed differences in individuals be exogenous. As a counter-example, suppose the heterogeneity at issue is housing demand due to variations in family size. Fertility outcomes and location choices will generally be the result of a joint decision, and even if all families have precisely the same tastes, we would expect to observe systematic variation in family size across different cities. It is not easy to predict how this variation would correlate with the amenity.

Here we are proposing one potentially convincing exogenous source of variation—differences in sexual orientation. A considerable amount of evidence suggests that sexual orientation is at least in large measure determined when men are quite young.¹¹ Further, gays face quite different lifetime constraints than other individuals, especially different constraints on having children. As we demonstrate below, men in our Census sample who identify themselves as living with a same-sex partner are far less likely to have children than other similar men and women (including women who live with a same-sex partner).¹² We find further that, not surprisingly, gay couples tend to live in smaller housing units than other households.

¹⁰ Using equation (3), we find $\mathbf{q}_0 = (A_a r_a^{-1/2} - A_b r_b^{-1/2}) / (A_a r_a^{-1/2} w_a - A_b r_b^{-1/2} w_b)$, and $\mathbf{q}_1 = (A_a r_a^{1/2} - A_b r_b^{1/2}) / (A_a r_a^{-1/2} w_a - A_b r_b^{-1/2} w_b)$. Recalling the equilibrium condition in footnote 6, these two constants are clearly positive.

¹¹ Using the 1994 survey of *Advocate* readers, Janet Lever (1994) finds that 90 percent of the gay males asserted that they “were born with their orientation.” In a survey of gay men attending a “homophile organization,” Barry Dank (1971) finds that 88 percent of the respondents had determined they were gay before age 25. In his survey of 299 gay men from the Bay area, Murray (1996) notes that the median age for first homosexual experience is 17 and the median age for “coming out” is 22.

¹² Not only is it more costly for gay men to have own children, but state adoption agencies are often unwilling to allow gay couples to adopt children. While only two states proscribe gay and lesbian

In short, gay individuals face different life circumstances than other individuals, and will invariably make differing optimal choices along a number of dimensions.

Assume that gay men have similar levels of the human capital endowment to other individuals, and assume further that because of differing constraints these individuals will optimally allocate a higher fraction of their lifetime wealth to “purchasing” local amenities.¹³ Then a higher fraction of gay men than other individuals will live in high-amenity locations. Of course, given that very few gay households have children, our logic applies specifically to “adult-related amenities.” We would expect gay individuals to sort away from neighborhoods in which high property taxes are used to support unusually high-quality public schools. We return to this issue shortly.

Before looking at empirical evidence about location decisions of gay individuals, though, it is worth noting an interesting implication of our model. If gay individuals do indeed make location decisions as suggested by our model, disproportionately sorting into high-amenity cities and “paying” for these amenities in the form of generally lower wages, then they will be observed empirically to have lower income than their straight counterparts. This is true even when both groups have the same distribution of the productivity endowment. Also, in a cross-section regression, gay individuals would appear to have a lower return to the endowment (assuming the econometrician could observe the endowment).¹⁴ This observation complicates interpretation of estimates of the effect of gay status on earning outcomes (e.g., Lee Baggett, 1995).

II. Empirical Evidence

Our central argument is that economic incentives result in gay households being over-represented in high-amenity cities. We cannot test this proposition directly, but we do provide some evidence on this

individuals from adopting children, only 13 states and the District of Columbia allow individuals in gay and lesbian partnerships to both have legal standing in the adoption (Carole Collum, 1993).

¹³ In terms of our model, one can think of this heterogeneity as a “taste shifter,” with gays having generally lower values of one of the preference parameters, \mathbf{a}_X or \mathbf{a}_H . In a more generally specified theory that modeled also constraints on fertility choices, the heterogeneity would appear as changes in these lifetime constraints.

¹⁴ Hae-shin Hwang, Robert Reed, and Carlton Hubbard (1992) provide a discussion of this issue in other labor market contexts.

issue. In particular, we look to see if cities where gays live in large numbers appear to be similar to San Francisco, i.e., have high amenities and high property values.

We use data on the spatial distribution of gay households taken from the 5 percent Public Use Sample (PUMS) of the 1990 U.S. Census.¹⁵ Beginning in 1990, the Bureau of the Census allowed respondents to identify themselves as unmarried partners. Of the roughly 6 million households in the PUMS data, there are 5,712 same-sex couples identified as unmarried partners,¹⁶ of whom 3,162 are male, and 2,550 are female.¹⁷ We are interested primarily in the male partnered couples (“gay couples”).

Some of the demographic characteristics give evidence that the gay male couples identified from the Census are quite distinct from the general population. They are highly educated (more than 46% have college degrees) and relatively young (mean age 36). Further, they rarely have children in the household (about 95% do not have a child in the house) and 81% of the group has never been married. These later demographics provide additional evidence that these gay men are often aware of their sexual orientation early enough to affect important life choices like marriage and children. As one might suspect, gay couples generally live in smaller housing units than other households.¹⁸

We would like to also be able to say more about the spatial distribution of the gay individuals who are not in partnerships, but the Census is not helpful in dealing with this issue. There is reason to believe, though, that the spatial distribution of gay partnerships across urban areas is quite similar to the distribution of the gay population more generally. As we discuss below, one piece of evidence favoring this contention is the high correlation between 1990 AIDS death rates of white men age 25 to 44 (which at

¹⁵ To our knowledge, Lisa M. Krieger (1993) was the first to identify gay and lesbian households from the Census.

¹⁶ This count of gay and lesbian households excludes couples where one or both of the partners are under age 18 or had age, sex, or relationship to the householder allocated.

¹⁷ In another paper (Dan Black, Gary Gates, Seth Sanders, and Lowell Taylor, 1998), we provide considerable additional detail about these demographic groups.

¹⁸ In a regression that specifies the number of rooms in the housing unit as a function of household income and household type (married couple, non-married heterosexual couple, or gay couple), gay couples are found to live in units that are 1.06 rooms smaller than married couples (and this effect is significant at the 0.01 level). Also we examined a regression that examines expenditure on heating as a function of household income, age of the housing unit, heating type (e.g., natural gas), and city fixed effects for the fifty largest cities in the country. When we evaluated home and apartments separately, we find evidence that within cities gay couples have substantially lower heating bills than other households (and that this effect is significant at the 0.01 level). This again suggests that gay couples live in smaller housing units.

that time were especially high among gays) and the concentration of same-sex male couples in urban areas as measured in the 1990 U.S. Census.¹⁹

One practical problem is defining a “city” for the purpose of our study. Some attributes of a metropolitan region are likely to apply to any neighborhood within the region. Any resident in San Francisco metropolitan area, for example, benefits from the region’s mild climate and the city’s world-class symphony. Other attributes, like public school quality, are likely to differ widely across the different municipalities in the metropolitan area. The economic reasoning in our paper suggests that general amenities will be an important consideration in gay individuals’ decision to a metropolitan region, but within that region we would expect considerable sorting based on more localized amenities. This means that our ordering of metropolitan regions will be sensitive to how we draw boundaries on cities.

Because our sample of gay couples is relatively small, we must confine attention to large metropolitan areas. We thus consider only the 50 metropolitan areas in the United States with populations higher than 700,000. For the most part, we use the Census definitions, Metropolitan Statistical Areas (MSA’s) and Consolidated Metropolitan Statistical Areas (CMSA’s). CMSA’s are generally comprised of more than one metropolitan area. For example, the San Francisco CMSA includes Oakland and San Jose, as well as San Francisco. These later areas are termed Primary Metropolitan Statistical Areas (PMSA’s).²⁰ Of the gay couples in the Census, approximately 81 percent reside in these 50 cities. By way of comparison, about 52 percent of the total US population resides in these cities.

In Panel A of Table 1, we provide a list of large metropolitan areas (MSA’s or CMSA’s) in the United States, ordered by the concentration of gay couples within the area. For each metropolitan area,

¹⁹ Of course AIDS deaths are also only an imprecise indicator of where gay men live, as some HIV infections were also transmitted via heterosexual sex, injection drug use, blood transfusions, and other means. Nonetheless, as of the early nineties, about 85 percent of HIV/AIDS cases among white non-Hispanic men were in men who had sex with men (CDC, 1993).

²⁰ The US Office of Management and Budget is responsible for defining CMSA’s, PMSA’s, and MSA’s. To be considered, the area must contain a large population with a “high degree of economic integration and social integration” (*Statistical Abstract of the United States, 1996*, p. 937), a condition which generally relies on commuting pattern information from the Census. An MSA must either contain a city with at least 50,000 residents, or be a Census Bureau-defined urbanized area with a metropolitan population of at least 100,000 (75,000 in New England). If an area meets the requirements to be an MSA and has a population of at least 1,000,000 the area may be recognized as a CMSA if it meets two requirements: there must be at least two distinct areas within the CMSA, and local opinion must support the particular distinction. See *Statistical Abstract of the United States, 1996*, 937-38.

we provide a statistic indicating the fraction of the city's population identified as same-sex male partners divided by the corresponding fraction for the country as a whole, so that a value of 1.0 indicates that for our sample the concentration of gay couples in the city is the same as in the rest of the country. Five of the metropolitan areas, indicated by asterisks in the table, are CMSA's that have more than one PMSA with population exceeding 700,000. For these five areas, in Panel B we provide a further breakdown of the gay couple concentration by PMSA's.

As our theory suggests, we find high concentrations of gay households in several cities that are generally thought to be high-amenity cities—coastal metropolitan areas with mild climates like San Francisco, Fort Lauderdale, Los Angeles, San Diego, and Seattle. Other cities with high concentrations of gay households include New York, Washington, Austin, and Atlanta. Many of the lower ranked cities, such as Buffalo, Cleveland, St. Louis, and Detroit, are declining industrial mid-western and eastern cities (whose initial comparative advantage in location perhaps stemmed from nineteenth century trade and industrial production considerations). In addition, Las Vegas ranked quite low, as did the industrial city of Birmingham, and two cities in North Carolina, Charlotte and Greensboro. As we discuss below, one might wonder if one of the metropolitan characteristics that influence these later outcomes is these area's general political and social acceptance of gay individuals.

There are interesting location patterns within the five larger metropolitan areas with more than two large PMSA's. In Los Angeles, for example, the concentration of gay couples is much higher in the city than in the surrounding heavily-populated "suburban" areas of Orange County and Riverside County. Similarly, in New York, the suburban Long Island PMSA of Nassau-Suffolk counties and suburban Middlesex and Monmouth counties in New Jersey have much lower concentrations of gay partnerships than the New York PMSA. We believe that it is likely, consistent with the general Tiebout hypothesis, that gay couples are sorting away from suburban areas where high property taxes or property values reflect especially high quality public schools and other child-related amenities (including, perhaps, low risk of criminal victimization).

Given our economic arguments, there is a sense in which our ordering ranks cities by adult-related amenities, i.e., this list is consistent with the interpretation that metropolitan areas of San

Francisco and Washington have higher adult-related amenities than Birmingham and Buffalo.²¹ Of course, our list is also consistent with an interpretation that these latter two cities simply have unusually strong family- or child-related amenities.

More generally, one might wonder if there is any empirical evidence that the geographic distribution we present is tied to urban amenities at all.

As a starting point we compare our list of cities with recent quality-of-life rankings. As we mention above, Kahn (1995) orders a small number of large U.S. cities using an intuitively appealing revealed preference approach. Using two somewhat different methods for constructing indices, Kahn provides a 1990 ranking: (1) San Francisco, (2) Los Angeles, (3) New York, (4) Chicago, (5) Houston. Using the same city definitions as Kahn (PMSA's), we find that the Kahn list also orders these cities by concentration of gay couples.²² Another recent popular press ranking (David Savageau and Geoffrey Loftus, 1997) is constructed in a largely *ad hoc* fashion. Interestingly, though, the Spearman rank-order correlation between their ranking and the ordering in Table 1 is reasonably high, 0.46.

A very rough way of evaluating city amenities is to compare housing costs across amenities. In the Rosen framework, high-amenity cities should generally have high rental prices. As we mention above, it is a difficult econometric task to compare housing costs across metropolitan regions. Nonetheless, if our central argument about the location decisions is correct, it would be quite surprising if urban concentrations of gay couples were not at least moderately (positively) correlated with existing measures of housing costs.

Even if such a correlation were found, though, we might worry that in general high-income, high-cost cities tended to be populated with more “liberal” residents, and that this is the reason for the correlation between housing costs and gay concentration. To evaluate this issue we run a sequence of regressions using the following data: The dependent variable is the urban gay concentration index

²¹ In compensating differential theory, it is generally assumed that there are no costs to mobility. To the extent that people have social, family, or business ties—that is, individuals face costs—our list (or any other ranking method for that matter) reflects factors other than amenities. While gay individuals undoubtedly find relocation costly, it may be that they have lower costs to mobility than the population as a whole. From the 1990 Census PUMS, 62.1 percent of men living with a same-sex partner are currently living in a state other than where they were born, compared to 38.2 percent of the population as a whole.

presented in Table 1. Independent variables are a measure of the attitude toward gays within the city, and an index of the cost of a mortgage in the city taken from Savageau and Loftus (1997).²³ To measure attitudes toward gays, we used the General Social Survey (GSS) that is conducted regularly by the National Opinion Research Center (NORC) at the University of Chicago. GSS asks questions about a variety of social attitudes, including attitudes towards homosexuality. For our measure of attitudes towards gays, we selected a question that asks whether sex between members of the same sex was always wrong, almost always wrong, wrong only some of the time, or not wrong at all.

Of course, such a question is at best a noisy measure of attitudes towards gays, but we face several additional problems. First, because we are interested in local variation in attitudes towards gays, we must use the confidential city identifiers codes, which Tom Smith of NORC kindly provided us. Unfortunately, the GSS is a relatively small survey and for any given year, the sample size in cities was small. We therefore combined samples for all years in which the GSS that used the 1980 sampling frame. This covers the years 1983 to 1993. Because the GSS is a stratified within cities, our measure for the city represents citizens of only a few randomly selected blocks from each city. In addition, because the GSS is also stratified across cities, many of our cities are not in the 1980 sampling frame. In such cases we used responses from the 1990 sampling frame (years 1993 to 1996). Using this strategy we are able to get this measure of attitudes towards gays for 46 of the 61 PMSA's with population of at least 700,000. Altogether we use over 9,000 GSS survey responses in measuring attitudes across these 46 cities.

Nationally, 74.9 percent of the sample said that homosexual sex was always wrong, but there is considerable regional variation.²⁴ San Francisco is more tolerant than, say, Oklahoma City, and furthermore this regional variation is correlated with the location of gay couples. In column (1) of Table

²² Gay household concentration indices for the five PMSAs are, respectively, 12.23, 2.74, 2.47, 1.50, and 1.28.

²³ We were concerned about the accuracy of this measure so we compared it to the median price of home sales from the US Bureau of the Census, 1996, Table 1186. The correlation was 0.92. Moreover, as a robustness check we estimated all of the regressions reported below using the median price instead of the mortgage index. Results were completely unaffected.

²⁴ By way of comparison with our measure, Grant Lukenbill (1995) reports that data from Yankelovich Monitor, a data set collected by the marketing firm of Yankelovich Partners, Inc., indicate that from 1979 to 1993, between 41 percent and 55 percent of Americans would "prefer not to be around gay people." Perhaps one reason for the high rate of disapproval for homosexual sex in our sample is that the AIDS epidemic was particularly severe for a good portion of our sampling period (1983 to 1993).

2, we regress our index of gay couple concentration against the measure of “gay unfriendliness.” Cities with a higher proportion of the population that thinks homosexual sex is always wrong have a lower proportion of gay couples, and despite what we imagine to be substantial measurement error in the variable, the coefficient is statistically significant. A much different story arises, however, when we include the local mortgage cost in our regression. The magnitude of the coefficient on measure of gay unfriendliness is only about one tenth the size once we condition on mortgage costs. The coefficient on the mortgage cost index is positive and statistically significant.²⁵

One might wonder if gay couples disproportionately live in large cities, which in turn generally have higher housing prices, and that this causes the strong positive correlation between the mortgage cost index and the gay concentration index. However, when we include city population in our regressions, the coefficient on city population is not significantly different than zero, and other coefficients are essentially unchanged.

As we mentioned above, another way of constructing an index of gay concentration for large cities in the United States is from death certificates that report deaths from AIDS in 1990. In particular, for each of the cities in our sample we calculate for white males age 25-44 an index that closely parallels our gay concentration index. Thus, for each city we find for white males age 25-44 the fraction of all AIDS deaths in the US that occur in that city. This is divided by the fraction of white males age 25-44 nationwide that resides in the city. Again, an index of one indicates a city where the AIDS death rate for this demographic group is the same as the population as a whole. In comparison to the gay couple concentration index, the AIDS death index has the advantage of reflecting both single and partnered gay men. It is also less susceptible to the possibility that partnership occurs at a higher rate in cities in which housing prices are high.

We find a high rank order correlation (a Spearman correlation of 0.72) between this AIDS death index and our city index of gay couples. More to the point, as indicated in the second panel of Table 2,

²⁵ Because of the serious measurement problems for all of the variables in our regression, we are reluctant to draw too much from the point estimate. At face value, though, this coefficient is quite large. The mean value of the mortgage index in our sample is 128 (indicating that the mean city in our sample has mortgage costs 28 percent above the national average), and the mean gay couple index is 1.5. Using our

when we estimate our regressions using the AIDS death index as the dependant variable, the results are qualitatively similar.

For comparison, we replicate our regression results for lesbian partnerships. Many of these couples do have children present in the household. Of the lesbian couples in our sample, 21.8 percent have children living in the households (compared to just 5.1 percent of the gay couples).²⁶ We thus would not expect an ordering of urban areas by concentration of lesbian households to correspond to a ranking of adult-related amenities (as we argued for gay households). Moreover, because females traditionally have lower earnings than males, one might suspect that these couples have less wealth to spend in the consumption of amenities.

When we do not control for the cost of housing, we find that, as with gay couples, lesbians couples are less likely to locate in gay unfriendly cities, but this relationship disappears once we control for the mortgage cost index. Moreover, while the coefficient on the mortgage costs is highly significant in the lesbian equation, its magnitude is only about 40 percent the magnitude of the corresponding coefficient from the gay equation.²⁷ This is consistent with our notion that on average lesbian individuals optimally allocate fewer lifetime resources to “buying” local amenities than their gay counterparts.

Finally, as a specification check, we present results for heterosexual partnerships (married couples and different-sex partnerships). Not surprisingly, there is no relationship between the location decision of heterosexual partners and our measure of gay unfriendliness. Indeed, there is some evidence, significant at the 10 percent confidence level, that heterosexual partners avoid cities with high property prices.

Of course, the sample of heterosexual couples includes a small number of couples who, like most gay couples, do not have children nor are likely to ever have children in the household. Consider, for example, married couples in which the female is age 45 to 55, and has never had a child. Some of these couples may have made location decisions based on an assumption that they would have children, but others will have planned to never have children. If the economic arguments in our paper are correct,

regression coefficient, at the mean, a ten percent increase in mortgage costs predicts a 0.32 increase in the gay index. This is large enough to move the city from about rank 14 to rank 8 in our 50-city list.

²⁶ The presence of children in lesbian partnerships is often the result of previous marriages.

these latter couples should make location decisions that are similar to those made by gay couples. It is thus interesting to note that the city that has the highest concentration of these married couples (female age 45-55, with no children ever born) is San Francisco. Further, for our 50 cities the Spearman rank-order correlation between the gay couple index and an index of these households is 0.52 (significantly different from 0 at the 0.0001 level). Finally, it is worth noting that if we run the regressions listed in Table 2 with an index of these no-children married couples, the pattern of coefficients is similar to the pattern for gay couples.²⁸

We repeated our regression exercises with various measures of social attitudes, including the political orientation of the city's population and the fraction of the city that identified themselves as religious fundamentalists. The empirical patterns are quite similar to our measure of gay unfriendliness. While there is often evidence that social attitudes are indeed correlated with gay location decisions, the magnitude of the correlation is substantially reduced once we control for the costs of mortgages. Of course, given our concern about the quality of the gay unfriendliness and other attitude variables, we do not want to suggest that local attitudes towards gays and lesbians play no role. These results do highlight, however, the extremely strong correlation between housing prices and the concentration of gay couples and the positive though weaker correlations between housing prices and the concentrations of both lesbian couples and middle-age childless heterosexual couples.

For interest sake, in Table 3 we list the 50 cities ordered by the concentration of lesbian couples, along with the indices analogous to those we constructed for gay households. As we might have expected, the ordering is quite different. While the highest concentration of lesbian households is in San Francisco area, Minneapolis-St. Paul has the second highest concentration. Cities such as Portland, Nashville, Albany, Baltimore, and Indianapolis are among the 20 cities with the highest concentration of lesbian

²⁷ An F-test rejects the equality of the coefficients at a one percent confidence level.

²⁸ In a regression with the no-children married-couple index as a dependent variable, the coefficient on "fraction of city residents believing homosexual sex is always wrong" is -0.007 (t-statistic 2.3) and the variable on "city mortgage cost index" is 0.002 (t-statistic 2.4). In contrast to heterosexual couples more generally, these couples appear to be residing in cities with higher housing costs.

couples, but are not among the 20 cities with the highest concentration of gay couples.²⁹ (Overall, however, the Spearman rank-order correlation between the gay and lesbian ordering is quite strong, 0.74)

In Tables 1 and 3 we present statistics only for cities of at least 700,000 people. In part, this is because it is difficult to get reliable estimates for smaller cities due to the low incidence of gay and lesbian couples in the data. The problem is particularly acute when trying to differentiate cities with few gay and lesbian partnerships, where a single observation could substantially alter a city's concentration measure. With this caveat in mind, in Table 4 we list the 10 cities with populations between 200,000 and 700,000 that have the highest concentration of gay and lesbian couples.

We observe that the Bay Area dominates these lists as well, as both Santa Cruz and Santa Rosa are a part of the San Francisco CMSA. Apart from Jersey City (which is about 3 miles from lower Manhattan) and Santa Rosa, eight cities are either state capitals (Madison, Montgomery, Columbia, and Lansing) or have major state universities (Santa Cruz, Lexington, Eugene, Madison, Ann Arbor, Columbia, and Lansing).³⁰

III. Concluding Remarks

This paper focuses on residence location decisions. We set out a simple model arguing that when the population is heterogeneous, some individual will choose to allocate an atypically high fraction of lifetime income to spatially-tied amenities, generally locating in high-amenity cities. We argue that because gay individuals face very high costs to having children in their households, these individuals fall disproportionately into this latter category. When we list large metropolitan areas according to the concentration of gay couples we find an ordering that seems to us at least a plausible rough ranking of

²⁹ Of the lesbian households in the Census, 69 percent live in these 50 CMSA's compared with 52 percent of the US population and 81 percent of the gay population.

³⁰ In addition, Lexington is 20 miles from the state capital. It is possible that capitals and universities generate adult-related amenities. To the extent that labor market sexual-orientation discrimination is lower in government or academic employment, however, part of the location decision may be the results of attempts to avoid such discrimination, rather than the choice of amenities. Interestingly, from Table 1, of the 20 cities with the highest concentration of gay couples, 9 are state or national capitals (Washington, Austin, Atlanta, Boston, Sacramento, Denver, St. Paul, Honolulu, and Phoenix), while Table 3 shows that among the 20 cities with highest concentration of lesbian couples, 11 are state or national capitals (St. Paul, Sacramento, Austin, Boston, Washington, Denver, Atlanta, Nashville, Albany, Indianapolis, and

cities by amenities. Coastal cities with mild climates, such as San Francisco, Fort Lauderdale, Seattle, and San Diego, tend to rank high, while declining industrial mid-western and eastern cities like Buffalo, Cleveland, St. Louis, and Detroit tend to rank lower.

We note that for the subset of our cities ranked by Kahn (1995) using a revealed-preference approach, his quality-of-life rankings correspond exactly to our ordering of cities by gay household concentration. Consistent with our conjecture that gays are sorting into high-amenity (and therefore high cost-of-living) cities, there is strong evidence that gay households tend to locate disproportionately in metropolitan areas with high housing costs. In addition, we use the General Social Survey to evaluate cross-city variation in general attitudes, as measured by average responses to questions about same-gender sex and other political or religious views. We find that gays do disproportionately locate in cities that have less hostile attitudes toward gays. Having conditioned on metropolitan housing cost, however, we find that none of the measures we use are significantly correlated with the concentration of gay couples in metropolitan areas.

Our central argument, of course, is that the location decisions of gay individuals is the result of a predictable economic process. In this respect our work differs markedly from previous work. Some scholars have emphasized the importance of prevailing social attitudes in location decisions of gay individuals. Others have pointed to the importance of historical or other idiosyncratic events such as the discharge from the Navy of gay sailors in San Francisco. We are persuaded that a simple economic explanation is more helpful in predicting location decisions of gay individuals. There is a reason, we would argue, why gay sailors remained in large numbers in San Francisco but not in, say, the Norfolk urban area, even though San Francisco has some of the highest real estate prices in the country. Our explanation is that gay individuals find it optimal to locate in high-amenity, high cost-of-living cities to a higher degree than other individuals.

Columbus). In contrast, if we simply rank cities on the basis of population, only 5 of the 20 most populous cities are state or national capitals (Washington, Boston, Atlanta, St. Paul, and Phoenix).

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Table 1: CMSA/MSA's Ranked by Concentration of Gay Couples,
Population of at Least 700,000

Panel A:

	Gay Concentration		Gay Concentration		
1	San Francisco*	4.86	26	Dayton	1.17
2	Washington	2.87	27	Oklahoma City	1.15
3	Austin	2.87	28	Nashville	1.15
4	Atlanta	2.66	29	Richmond	1.02
5	San Diego	2.54	30	Albany	0.90
6	Los Angeles*	2.10	31	Baltimore	0.90
7	Seattle	1.92	32	San Antonio	0.87
8	Boston	1.78	33	Memphis	0.87
9	Sacramento	1.74	34	Indianapolis	0.86
10	Orlando	1.60	35	Kansas City	0.85
11	Miami-Fort Lauderdale*	1.56	36	Norfolk	0.80
12	Rochester	1.54	37	Philadelphia	0.80
13	Denver	1.53	38	Pittsburgh	0.77
14	New York*	1.50	39	Salt Lake City	0.74
15	West Palm Beach-Boca Raton	1.45	40	Milwaukee	0.73
16	Minneapolis-St. Paul	1.42	41	Detroit	0.68
17	Tampa	1.41	42	Louisville	0.68
18	Dallas*	1.36	43	Cincinnati	0.63
19	Honolulu	1.31	44	Charlotte	0.60
20	Phoenix	1.27	45	St. Louis	0.57
21	New Orleans	1.24	46	Greensboro-Winston Salem	0.55
22	Columbus	1.22	47	Cleveland	0.41
23	Houston	1.20	48	Las Vegas	0.35
24	Chicago	1.20	49	Birmingham	0.31
25	Portland	1.17	50	Buffalo	0.20

*Indicates CMSA.

Panel B:

	Gay Concentration		Gay Concentration		
San Francisco CMSA		New York CMSA			
1	San Francisco	12.23	1	New York	2.47
2	Oakland	3.02	2	Bergen	0.65
3	San Jose	1.37	3	Newark	0.48
Los Angeles CMSA			4	Middlesex	0.47
1	Los Angeles	2.74	5	Nassau-Suffolk	0.45
2	Anaheim	1.51	6	Monmouth	0.27
3	Riverside	0.80	Dallas-Fort Worth CMSA		
Miami-Fort Lauderdale CMSA			1	Dallas	1.72
1	Fort Lauderdale	2.37	2	Fort Worth	0.57
2	Miami	0.98			

Source: Authors' compilations from the 1990 US Census, 5 percent PUMS.

Table 2: Gay Location and Toleration of Homosexuality,
Regression Results

	(1)	(2)
<i>Dependent Variable: City Index of Gay Couples</i>		
<i>Independent Variables:</i>		
Fraction of city residents believing homosexual sex is always wrong	-0.069 (2.41)	-0.005 (0.18)
City mortgage cost index	---	0.025 (3.76)
<i>Dependent Variable: Index of AIDS Deaths White Men, 25-44</i>		
<i>Independent Variables:</i>		
Fraction of city residents believing homosexual sex is always wrong	-0.055 (2.28)	-0.013 (0.49)
City mortgage cost index	---	0.016 (2.74)
<i>Dependent Variable: City Index of Lesbian Couples</i>		
<i>Independent Variables:</i>		
Fraction of city residents believing homosexual sex is always wrong	-0.034 (2.25)	-0.006 (0.40)
City mortgage cost index	---	0.010 (2.89)
<i>Dependent Variable: City Index of Heterosexual Couples</i>		
<i>Independent Variables:</i>		
Fraction of city residents that believes homosexual sex is always wrong	0.004 (1.32)	0.001 (0.17)
City mortgage cost index	---	-0.001 (1.69)
N	46	46

Absolute value of t-statistics are in parentheses.

Sources: The dependent variables are indices of concentration of the specified couples in PMSA's compiled by the authors from the 1990 US Census, 5 percent PUMS. The measure of mortgage costs is taken from Savageau and Loftus (1997). The urban-area measure of attitudes toward homosexual sex are compiled by the authors from the GSS.

Table 3: CMSA/MSAs Ranked by Concentration of Lesbian Couples,
Population of at Least 700,000

	Lesbian concentration		Lesbian concentration		
1	San Francisco	3.22	26	San Antonio	0.96
2	Minneapolis-St. Paul	3.14	27	Oklahoma City	0.95
3	Sacramento	2.84	28	Houston	0.90
4	Austin	2.75	29	Chicago	0.89
5	Seattle	2.74	30	Las Vegas	0.89
6	Portland	2.38	31	Cleveland	0.85
7	Boston	2.08	32	West-Palm Beach-Boca Raton	0.81
8	Washington	1.85	33	Charlotte	0.78
9	Denver	1.75	34	Milwaukee	0.77
10	Tampa	1.60	35	Dayton	0.76
11	Atlanta	1.59	36	Dallas	0.75
12	San Diego	1.52	37	St. Louis	0.74
13	Nashville	1.51	38	Kansas City	0.67
14	Albany	1.49	39	Cincinnati	0.66
15	Baltimore	1.47	40	Norfolk	0.66
16	Orlando	1.44	41	Louisville	0.64
17	Indianapolis	1.43	42	Detroit	0.64
18	New York	1.29	43	Salt Lake City	0.64
19	Columbus	1.27	44	Honolulu	0.59
20	Los Angeles	1.27	45	Richmond	0.58
21	Phoenix	1.26	46	Birmingham	0.42
22	Rochester	1.23	47	Pittsburgh	0.40
23	Miami-Fort Lauderdale	1.18	48	Greensboro-Winston Salem	0.29
24	New Orleans	1.12	49	Memphis	0.27
25	Philadelphia	1.06	50	Buffalo	0.00

Source: Authors' compilations from the 1990 US Census, 5 percent PUMS.

Table 4: 10 MSAs with Highest Concentration of Same-Sex Couples,
Population 200,000 to 700,000

Gay Couples	Lesbians Couples
1 Santa Cruz, CA	1 Santa Rosa, CA
2 Santa Rosa, CA	2 New Haven, CT
3 Lexington, KY	3 Santa Cruz, CA
4 Eugene, OR	4 Madison, WI
5 Jersey City, NJ	5 Albuquerque, NM
6 Madison, WI	6 Salinas, CA
7 Ann Arbor, MI	7 Salem, OR
8 Montgomery, AL	8 Modesto, CA
9 Columbia, SC	9 Ann Arbor, MI
10 Lansing, MI	10 Boulder, CO

Source: Authors' compilations from the 1990 US Census, 5 percent PUMS.

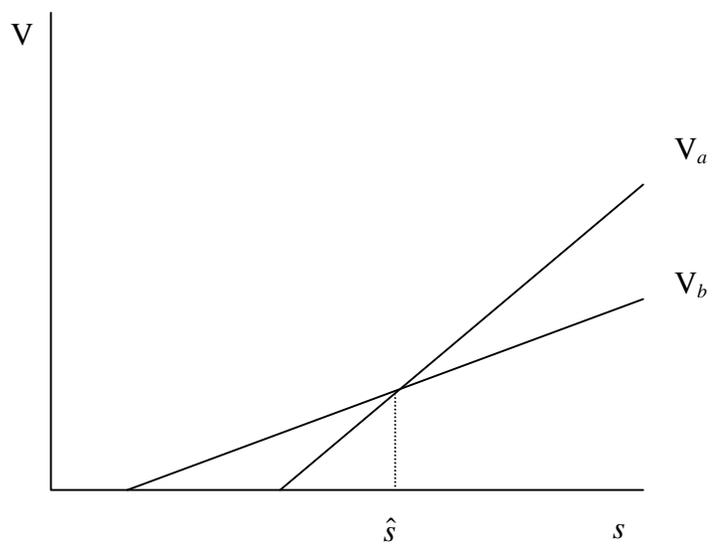


Figure 1. Indirect utility in each location, V_a and V_b , depends on the human capital endowment, s . Individuals with $s > \hat{s}$ locate in the high-amenity site a , others in b .