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Working Paper 32
March 2001

From the Barrio to the 'Burbs: Immigration and Urban Sprawl in Southern California¹

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Abstract: Research on the spatial distribution of U.S. immigrants has given scant systematic attention to how regional-institutional factors (e.g., welfare availability, cultural affinity, labor market conditions, and the housing market) influence settling initially in the suburbs. Connecting (1) 1990 PUMS, (2) 1980-90 Dun and Bradstreet, (3) 1983-90 Consolidated Federal Funds Report, and (4) 1990-98 INS data at the PUMA level for the five-county southern California region, this paper finds that (1) although the proportion of recent immigrants having settled initially in suburbs rose during the 1990s, approximately two-thirds continued to settle first in urban areas; and (2) both individual demographic characteristics and regional-institutional factors influenced immigrant residential choice. Results challenge the emphasis placed on individual-level determinants in Massey's (1985) original spatial assimilation model, and it is argued that employment and housing, rather than immigration or welfare, policy instruments are more likely to influence whether immigrants settle initially in the suburbs.

Antipathy toward immigrants in the United States is not new (Higham 1994; Simon and Alexander 1993), and the directing force animating this sentiment has been and remains geographic (Burgess 1925; Clark 1998; Waldinger 1989; Ward 1971, 1982; Zavodny 1999). This is not to suggest that foreigners competing for jobs or driving down wages (Butcher 1998; Marcelli, Pastor and Joassart 1999; Reimers 1998), consuming more in public resources than they pay in taxes (Clune 1998), or engaging in controversial or criminal activities (Hagan and Palloni 1998; Marcelli 2001) have been uninfluential in generating xenophobia. But with the production of contradictory scholarly evidence (Smith and Edmonston 1997), sustained economic growth, and federal budget surpluses, public officials have begun to downplay immigrants' negative

¹ I would like to thank Pascale Joassart-Marcelli for her assistance with preparing the Consolidated Federal Funds Report (CFFR) public assistance data; and Manuel Pastor, Jr. for providing the Southern California Association of Governments' (SCAG) job growth data. I would also like to thank John Logan for comments on an earlier draft, and Paul Ong as well as the participants of the November 3, 2000 Southern California Studies Center (SC2)

economic consequences as framed by California's 1994 Proposition 187 and by the 1996 federal-level Illegal Immigration and Welfare Acts. Evidence that the antipathy of the 1990s is undergoing reconsideration includes new amnesty programs, the easing of U.S.-Mexico border cross checking, and union solicitation of legal and unauthorized immigrants.

Historically, rather than overt economic competition between foreign- and U.S.-born residents, it was immigrants' socially undesirable behavior (e.g., illicit drug use) in particular geographic locations that calibrated the nation's first restrictionist U.S. immigration laws (Marcelli 2001). David Ward (1925: 57-58), for instance, argued that the primary source of rapid urbanization was the incapacity of cities to "metabolize" population "expansion" due to an "invasion" or "tidal wave" of immigrants "accompanied by excessive increases in disease, crime, disorder, vice, insanity, and suicide." This moral or social tone of attack should not surprise. Countervailing business and government interest, supportive of foreign-born workers for the economic growth they help generate (Cornelius 1998; Muller 1993), had an instrumental effect on ensuring that restrictionist sentiment would emphasize non-economic factors. The motivating provocation was not that Chinese or Italian immigrants competed effectively with U.S.-born workers in the labor market at the turn of the 20th century, nor is it that Mexican migrant workers do so today. Rather, the restrictionist position has more often been that immigrants have concentrated geographically and engaged in activities deemed socially aberrant.

As the economic arguments against immigrants began to wane and infra-state regions began to consider how to accommodate infrastructural and residential pressures accompanying economic growth in the late 1990s, restrictionist immigration policy sentiment has become more transparently geographic. For instance, a recent study promoted by the restrictionist Federation for American Immigration Reform (FAIR) claims that 95 percent of urban sprawl between 1970

seminar for valuable suggestions. This research would not have been possible without financial support from

and 1990 in California was driven by population rather than consumption growth, and that if the federal government does not alter immigration policy, by 2025 “Californians will be living more densely than do today’s residents of China” (Kolankiewics and Beck 2000: 25).² Researchers have thus begun to ask whether immigrants are contributing to suburbanization or “urban sprawl” (Alba, Logan, Stults, Marzan and Zhang 1999), and to investigate whether linkages exist between any negative labor market and welfare effects generated by recent immigrants and the communities in which they are concentrated (Clark 1998; Marcelli and Heer 1998). Zavodny (1999: 1017) writes of recent public attention that “has focused on why [newer immigrants] settled in particular states and the possible effects on those areas.” And the concentrated geographic distribution of recent immigrants (Frey and Liaw 1998a,b) as contrasted with the aging baby boom generation (Frey and Devol 2000) has led to questions concerning the legitimacy of traditional spatial assimilation theory, which links socioeconomic assimilation with city-suburb mobility (Massey 1985). While in the past immigrants may have been more likely to settle first in urban areas, and then migrate to the suburbs with the passage of time and across generations (Gans 1967; Jackson 1985), fully 43 percent of immigrants who arrived during the 1980s and resided in urban areas were living outside of a central city (U.S. Bureau of the Census 1993, table 13). In short, the increasing probability of new immigrants to leapfrog over urban areas for the historically more ethnically homogenous (e.g., white) suburbs could short-circuit the assimilation process and contribute to regional environmental stress despite evidence indicating that population dispersal remains “largely a product of internal migration” (Frey and Liaw 1998a: 399). The dilution of assimilative forces is possible, that is, if suburbia losses its non-minority

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² A prominent urban scholar recently argued that while sprawl has increased between eight and 15 percent between 1970 and 1990 across U.S. metropolitan areas, population growth has been much slower (Wilson 2000).

homogeneity (Logan and Golden 1986).³ Alternatively, immediately entering suburbia could enable new immigrants to achieve socioeconomic integration more rapidly without having to pursue residential mobility (Alba et al. 1999: 448). A bimodal or more diverse mix of skills among new immigrants would be one factor potentially augmenting this process (Portes and Rumbaut 1996).

Emergent attention to recent immigrants' socioeconomic impact and integration at the regional and local level dovetails conceptually and temporally with the paradoxical rediscovered significance of geography (Pastor, Dreier, Grigsby, and López-Garza 2000; Scott 1998). Although national and regional boundaries were expected by some to diminish with the international spread of contemporary capitalism (O'Brien 1992), just the opposite appears to be occurring. On one hand, local governments are increasingly employing industry "cluster analysis" to investigate how they can harness regional resources to remain or to become economically competitive internationally (Marcelli 2000; Pastor et al. 2000; Porter 2000). On the other hand, regional "Smart Growth" movements are seeking to manage population sprawl in an effort to promote sustainable regional economic development. Put simply, sustained economic growth with minimal environmental and infrastructural pressure is an increasingly important regional policy goal, and immigrants are viewed as potentially contributing to both sides of the cost-benefit equation.

Yet while conversations about the spatial socioeconomic impact and integration of recent immigrants are connected to concerns about global economic competitiveness and environmental sustainability at the regional level, and that various scholars have studied whether immigrants stimulate suburbanization indirectly by displacing others (Frey and Liaw 1998a; Kritz and Gurak

³ Fong and Shibuya (2000) provide a more nuanced perspective, arguing that tenure status, as well as whether one resides in a city or suburb, is needed to understand the assimilation process in contemporary U.S. metropolitan areas.

2001), there is scant research on recent immigrants' direct contribution to urban sprawl (Alba et al. 1999; Alba, Logan, and Crowder 1997; Allen and Turner 1997).

The southern California region is a particularly useful place to study the economic and environmental consequences of recent immigrants because it is here that the majority of new arrivals continue to choose to reside (Passel and Zimmerman 2000). Given the dearth of research on whether recent immigrants are contributing directly to urban sprawl, and that significantly more attention has been paid to the economic effects of immigration (Smith and Edmonston 1997), this paper has two objectives. First, I investigate whether and to what extent recent immigrants directly impacted urban sprawl in southern California between 1990 and 1998. Second, I estimate how (1) individual demographic characteristics, as well as regional (2) labor market conditions, (3) antipoverty public assistance availability, (4) ethno-racial and immigrant concentration, and (5) rental prices help explain the decision of recent legal permanent immigrants (LPR) to settle in urban or suburban areas. I accomplish this by linking data geographically from four sources at the Public Use Microdata Area (PUMA) level: (1) individual-level Immigration and Naturalization Service (INS) settlement data for newly legalized immigrants, (2) group demographic characteristics and rental price information from the five percent 1990 Public Use Microdata Samples (PUMS), (3) labor market demand information from the Southern California Association of Governments (SCAG), and (4) antipoverty expenditures from the Consolidated Federal Funds Report (CFFR).

Knowing whether immigrants are contributing directly to suburbanization and whether job growth, cultural affinity, antipoverty assistance, or rental costs across "neighborhoods" help explain this will provide both regional and federal-level policymakers with valuable information. At a regional level, planners are likely to be interested in the institutional or structural determinants of locational choice for anticipating and planning for new foreign-born in-migrants

(Zavodny 1999). At the federal level, it may be useful for politicians and legislators to know whether the current emphasis on immigration rather than immigrant policy in the U.S. contributes to sprawl and its attendant fiscal and spatial challenges. Finally, spatial assimilation theory posits that against the collective tide of urban ethnic enclave building run individual-level interests motivating outward residential mobility (Alba et al. 1999: 447). Structural economic forces such as local labor market conditions and public assistance availability are generally viewed as providing only contingent influence (Massey 1985). The analysis that follows directly challenges this perspective and suggests that spatially specific economic factors and public policy can have more than a minor influence on where newer immigrants initially reside.

PAST RESEARCH AND THEORY

The Chicago School's explanation of residential organization was premised on a plant ecology model that stressed "the competitive process of invasion and succession whereby different income groups attained a dominance in different concentric zones around the city center" (Ward 1971: 126). It was posited that group-specific population movement away from the city and toward the suburbs occurs across generations and is motivated by individual aspirations for upward socioeconomic mobility. Collective or group interests were viewed as constraints on outward residential and upward pecuniary mobility (Burgess 1925). Massey (1985) formalized this spatial-assimilation model and added that regional factors such as the housing market and the geographic distribution of economic activity, not only ethnic enclaves, may also mediate individual residential choice. This broader choice-within-constraint conceptualization is consistent with Ward's (1971: 143) seminal study, which, while noting that "the increasing pressure of newly arrived immigrants and the unsatisfactory living arrangements of most tenements pushed families . . . from central areas" and that "very few outer suburban developments designed for large families were built for

lower middle-income people,” mainly emphasized the importance of improved local transportation systems for understanding residential patterns. From the earliest scholarly discussions of city growth, then, both individual and institutional explanations of settlement choice were offered.

Alba et al. (1999: 453), building on their earlier work (Alba and Logan 1991), report that “despite high levels of suburban residence among recent immigrants from many groups, the distinction between urban and suburban space underpinning the spatial-assimilation model continues to function in important respects.” Although recency of arrival is found to play a modest role in explaining urban versus suburban residence, for instance, household income, race, and English ability, are important factors. Consequently, the model is seen to be in need of some revision given that suburbia may be increasingly less likely to produce either the shielding effect for the dominant ethno-racial group or the acculturation force on newer immigrants.

Previous research also indicates that the presence of immigrants who migrated at an earlier date is the most important determinant of newer immigrants’ locational choices. While there is little evidence suggesting most foreign-born persons become more dispersed over time (Bartel and Koch 1991), Bartel (1989) finds that the probability of a new male immigrant to settle in a metropolitan area is positively correlated with the percent of his ethnic group residing in that area. Buckley (1996), Dunlevy (1991), and Zavodny (1999) provide corroborating evidence at the state level.⁴ None of these studies, however, focuses on the relationship between immigration and urban sprawl. Additional evidence that ethnic or cultural affinity plays an important role in directing immigrants’ settlement decisions comes from the internal migration of foreign-born persons. Belanger and Rogers (1992) report that when foreign-born persons migrate within the United States, they tend to gravitate toward areas with relatively high levels of co-ethnic

⁴ Kritz and Gurak (2001) also show, contrary to the displacement thesis, that an increase in the number of recent immigrants impacts the out-migration of native-born persons and those from previous foreign-born entry cohorts similarly at the state level.

geographic concentration. Likewise, Kritz and Nogle (1994) and Neuman and Tienda (1994) find that residing in an area with a high concentration of foreign-born persons can dissuade out-migration. Consequently, in addition to individual, family and household characteristics (Alba et al. 1999), being near other immigrants or co-ethnics can have a magnetic effect on migratory activity.

Economic opportunity is a second major factor that has been important for understanding international migration (Easterlin 1961; 1982: 26-28) and for helping to explain the inter- and infra-state out-migration of lower-skilled U.S.-born workers (Frey and Liaw 1998a,b; Muller 1993: 83, 89). However, while the demand for labor is a theoretically appealing migration force, empirical evidence is mixed, and to date no study of which I am aware has estimated whether spatially-based job growth has an independent migration pull effect. Whereas Filer (1992) reports that local labor market conditions do not impact the locational choices of the foreign-born, Bartel (1989) finds the opposite. Specifically, foreign-born adult men are more likely to reside in metropolitan areas with higher wages and higher general assistance payments, and foreign-born Latinos are less likely to live in areas where unemployment is relatively high. Bartel and Koch (1991) and Kritz and Nogle (1994), however, find that higher state and metropolitan area unemployment does not stimulate out-migration among the foreign-born. And Zavodny (1999), although reporting that state-level economic conditions are significant for explaining the residential decisions of new family- and employment-based LPR, finds that they are not for all remaining admission groups (e.g., IRCA legalizations, refugees/asylee adjustments and new refugees) or for all new LPR taken together. One potential drawback of these studies is that they do not measure those economic conditions likely to attract new LPR well. For instance, if new immigrants are more likely to accept lower-paying jobs (many of which are located in the service sector) than are U.S.-born persons, and less likely to access welfare, then the unemployment rate,

manufacturing wage, and public assistance payments may not be capturing the most important economic factor attracting immigrants, namely lower-wage jobs. As noted earlier, Raphael (1998a,b) and Pastor and Marcelli (2000) show that job growth rather than the number of jobs per resident is a better proxy for labor demand.

The recent call for new amnesty programs for both lower- and higher-skilled unauthorized immigrants is evidence that labor market arguments against immigration have become less important since the mid-1990s, and suggests that pure economic arguments in general have become less convincing. This change is due, in large measure, to increasing demand for both higher- and lower-wage workers in the United States since the late 1970s (Bernstein 1999). Rather, researchers have increasingly emphasized immigrants' local fiscal effects (Clark 1998), welfare's magnetic geographic effect on immigrants (Borjas 1999b), and that immigrants' contribute to urban sprawl (Kolankiewics and Beck 2000). In other words, while concern about immigrants' negative fiscal effects remains prominent (Clune 1998), it is increasingly being expressed in geographic terms. Three types of welfare "magnets" have been identified: that (1) stimulating international migration, (2) impeding return migration, and (3) motivating inter-state residential mobility (Borjas 1999a: 114-118). Although there is virtually no empirical evidence that the availability of welfare represents a significant pull effect on those contemplating migrating to the United States, or that interstate differences motivate inter-state residential mobility among U.S.-born, there is some indication that public assistance reciprocity may dissuade return international migration and influence inter-state residential patterns among the foreign-born. Exceptions exist, however. Buckley (1996: 92), for instance, admits even before the 1996 Welfare Reform restrictions went into effect, that for immigrants "American welfare benefits are more narrowly available than commonly supposed." His statistical analyses reveal that new LPR were more likely to settle in states with higher AFDC benefits, however, and he concludes

accordingly that cutting welfare benefits is likely to prove effective at discouraging unskilled migration to the United States. Similarly, Zimmerman and Fix (1994) find evidence that secondary migration to states with higher levels of public assistance during the 1980s was more likely among refugees, although this was usurped by job opportunity and familial/cultural factors in the 1990s. Zavodny (1999: 1022-1023), however, provides evidence suggesting that Zimmerman and Fix's (1994) findings regarding refugees in the 1980s held at least until the early 1990s as well, but is careful to note that the positive correlation may be partly mediated by government decisions concerning the states to which refugees may initially settle, and that the estimated impact of "welfare" may also be picking up unmeasured aspects of a state's willingness to provide other services refugees desire, such as language classes and job training. Welfare was not found to be a significant explanation for inter-state migration of all other foreign-born persons, however.

A fourth and final spatial factor expected to impact newer LPR residential choices and analyzed in this paper is rental prices. In addition to cultural affinity, job growth, and welfare availability, another potential important cost of living component is the expense of housing.

Unfortunately, the only study to date that directly examines whether newer immigrants are more likely to settle in suburban areas (Alba et al. 1999), while controlling for some of the metropolitan contextual factors discussed above, does not report whether or how these influence residential settlement patterns. Zavodny (1999), alternatively, finds that the presence of other foreign-born residents rather than welfare generosity or general labor market conditions helps determine immigrants' locational choices. The analysis is performed at the state level, however, thus no distinction is made between urban and suburban. As such, neither differentials in intra-metropolitan job opportunities nor whether immigrants are directly contributing to urban sprawl is addressed. The present study builds on Alba et al. (1999) and Zavodny (1999) by incorporating improved measures of local labor demand (Pastor and Marcelli 2000; Raphael 1998a,b) and local

federal antipoverty expenditure (Joasart-Marcelli and Musso 2000) to investigate the importance of geographic contextual factors likely to influence a new immigrant's decision to settle initially in a suburban area.

DESCRIPTION OF DATA AND ESTIMATION METHODOLOGY

The primary data employed in this study are obtained from the Immigration and Naturalization Service (INS) data files (100 percent) and contain information on the demographic characteristics of the 911,266 aliens who became legal permanent residents (LPR) of the United States and reported that they intended to settle in the five-county southern California region between fiscal years 1990 and 1998.⁵ Importantly, recent research indicates that *intended* (reported) and *initial* (observed) settlement patterns are highly similar (Newbold 2000).⁶ Consequently, we may use reported intended residence location as a proxy for initial settlement.

There were four main categories of legalization during the 1990s: (1) family-sponsored, (2) employment-based, (3) refugee and asylee adjustment, and (4) Immigration Reform and Control Act (IRCA) amnesty. The INS data employed here do not include IRCA legalizations, but the new immigrants from the remaining three categories represented from 10 to 16 percent of all aliens who became LPR each year in the United States, and 13 percent on average across all nine years (Figure 1). Importantly, the exclusion of those who were legalized via IRCA does not significantly alter these percentages given that after 1992 relatively few individuals obtained LPR status via amnesty.⁷

⁵ The southern California "region" includes Los Angeles, Orange, San Bernardino, Riverside, and Ventura counties.

⁶ Readers may wish to see Greenwood, McDowell, and Trabka (1991) for a discussion of problems associated with use of the INS data.

A foreign-born person could become a LPR either by arriving in the United States with a valid immigrant visa issued by the U.S. Department of State in the source country (new arrival) or, for those who were already residing in the United States with a temporary visa, by petitioning the INS to be adjusted to LPR status (adjustments). Examples of the latter process include when a resident refugee petitions to become a LPR and is successful, and when a temporary visitor is permitted to upgrade his or her status to LPR.⁸ What Figure 1 reveals is that although there was noticeable fluctuation in the number of new legal immigrants who came to the United States each year during the 1990s and there has been a downward trend overall, the supply to southern California was considerable and constant, hovering close to 100,000.

While the INS data provide valuable information about country of origin, date of admission, age, occupation, marital status, sex, and zip code of intended residence, these must be linked with other data if we wish to learn something about how non-individual factors – such as the demand for labor, public assistance availability, foreign-born geographic concentration, and rental prices – influence residential choice. Three secondary data sources provide what is needed. First, the five percent 1990 Public Use Microdata Samples (PUMS) are used to construct demographic variables at the Public Use Microdata Area (PUMA) level to proxy for foreign-born geographic concentration and to distinguish urban from suburban PUMAs (geographical areas of approximately 150,000 residents and 75,000 employed persons). Because “no uncontested operational definition of ‘suburbia’ exists” (Alba et al. 1999: 448-449), Los Angeles does not

⁷ Although we analyze all non-IRCA legalizations in our descriptive analysis, we exclude refugees and asylees from the regression analyses below given that upon entry the INS may determine where these individuals initially settle (Zavodny 1999: 1023).

⁸ Again, the data employed in this study neither include the two million persons granted LPR status under the amnesty (or legalization) provisions of the 1986 Immigration Reform and Control Act (IRCA) during these years

conform to the traditional central-city versus noncentral-city (or city-suburb) dichotomy that has been employed elsewhere (Alba et al. 1999; Baldassare 1992; Frey and Speare 1988; Guest and Nelson 1978; Massey and Denton 1987, 1988; Schnore 1963), and the pace of non-core urban development rose considerably after 1960, we define a suburban PUMA as one that had a higher percentage of houses built between 1960 and 1990 than was the case for the entire five-county region according to the 1990 PUMS.⁹ While our housing development definition is not as convenient as the traditional Census Bureau central-city/suburb dichotomy, because residents of the Los Angeles metropolitan area tend to be more scattered into pockets of densely population areas, it is more likely to reflect the region's underlying geographic reality.¹⁰

Although the 1990 PUMS permit us to construct static proxies for cultural affinity such as percent of the population who were foreign-born or from a specific ethnic or racial group by PUMA, they do not enable the construction of a job growth variable. Raphael (1998a,b) has shown that job growth is a better proxy for labor demand than jobs per resident, thus it is more likely to capture the economic opportunity that may attract potential in-migrants. With data from and the Southern California Association of Governments (SCAG), Pastor and Marcelli (2000) follow Raphael's (1998a,b) lead by creating a job growth (or decline) variable for Los Angeles

(shown in Figure 1 by the line with the small gaps), the six million LPR who settled outside of the southern California region, or any non-amnestied unauthorized immigrant residents.

⁹ Approximately 42 percent of all houses were built between 1960 and 1990 in the region, and 41 (or 45 percent) of all 92 PUMAs had a percentage of their respective housing units that were built during this 30-year period that exceeded the regional average. Los Angeles County had approximately 16 percent (or 9) of its 58 PUMAs, Orange County had 93 percent (or 13) of its 14 PUMAs, Riverside County had 100 percent of its 6 PUMAs, San Bernardino County had 89 percent (or 8) of its 9 PUMAs, and Ventura County had 100 percent of its 5 PUMAs tagged as suburban. Alternatively, Alba et al. (1999) code a metropolitan-area PUMA in the 1990 PUMS as urban when 95 percent of its population resided in a central city and as a suburb when 95 percent of its population did not. This was done because unlike in the 1980 PUMS, the 1990 PUMS does not provide a dichotomous central-city/suburban variable.

¹⁰ We also investigated how our urban-suburban dichotomous variable would change were we to use the 1970-1990 period to represent suburban development, and only five PUMAs were not categorized as suburban that were using the 1960-1990 selection criterion: #4805 (Fullerton), #4807 (Buena Park, Cypress, La Palma, Los Alamitos, Seal Beach, Stanton), #6000 (Carson), #6515 (Los Angeles City: Sylmar, part of Mission Hills and Granada Hills), and #6516 (Los Angeles City: Canoga Park, Woodland Hills). The 1960-90 threshold conforms better to known residential patterns and confirms that suggested to me by John Landis, whom I would like to thank.

County from 1980 to 1990 by PUMA, and find that it had an independent positive effect on hourly earnings among male workers. We use this variable (JOBS8090) for Los Angeles County in the present study, as well as another for the entire five-county southern California region that measures job growth by PUMA from 1990 to 1994 (JOBS9094).¹¹

A third secondary data source, the Consolidated Federal Funds Report (CFFR), is used to generate a proxy for federal antipoverty public expenditures per poor person by PUMA from the 1988-90 period (ANTIPOV). Several tasks were required to accomplish this. First, because the CFFR data include federal expenditures and obligations by states, counties and cities for over 2,000 government programs including grants, salaries and wages, procurement contracts, payments to individuals, etc., these had to be organized into manageable categories, from which antipoverty programs may be selected. Following work by Persky et al. (2000) and Summers (1999), 31 sub-categories were initially created and organized into 5 broad groupings: (1) retirement, (2) geographically undistributed antipoverty, (3) city-specific antipoverty, (4) other city-specific, and (5) all other, programs. We then combined the geographically undistributed (i.e., individual level transfers such as food stamps, medical assistance, AFDC, SSI, Veterans benefits, unemployment benefits, etc.) and city-specific antipoverty programs (e.g., federal expenditure targeting specific areas such as housing projects, community development, health and education) to produce our ANTIPOV variable. Because the geographically undistributed antipoverty data is grouped at the county level, a second step was necessary to allocate the undistributed funds to each city. These were then added to the city-specific antipoverty expenditures to generate a total antipoverty expenditure figure for each city.

¹¹ As this article is being written, job growth data for 1980 by PUMA that is matched with data from 1990 is unavailable for the entire five-county southern California region. Thus, we primarily employ JOBS9094 in the regression analyses reported below, and use JOBS8090 for Los Angeles County alone as a check on whether results obtained using JOBS9094 for the five-county region are period specific.

About 60 percent of all expenditures, or approximately 350 undistributed programs, are allocated to counties rather than cities. For example, these programs include food stamps, medical assistance, and other important poverty-related programs. Unfortunately, there are no other data on the number of people in each city receiving these specific federal transfers generally available. Consequently, an allocation methodology was developed. In Summers (1999)'s study of Philadelphia, antipoverty expenditures were allocated to each city based on the city's share of the population below the federal poverty level. However, this methodology assumes that federal funds are evenly distributed across poor households.¹² A more reliable method is to allocate the funds based on a set of individual-level predictors obtained from a logistic regression performed on a larger independent sample. Using a sample from the 1992 March Current Population Survey for the southern California region, we logistically regressed both broad and detailed categories of public assistance programs on whether an individual was impoverished. For antipoverty programs, simply being impoverished does not explain a large amount of the variation. In fact, when using the official poverty level as an explanatory variable for receiving poverty-related federal transfers, only 51.1 percent of pairs were concordant.¹³ The predictive power of the model rises, however, when we define poverty at 150 percent of the official poverty thresholds and add gender and age variables.¹⁴ Although the percent of concordant pairs decreases for SSI when run separately, it increases for larger programs such as food stamps and medical assistance, giving us some

¹² Redistribution or antipoverty categories include a wide range of programs such as food stamps, school lunch, medical assistance, scholarship for low income students, and job training. On average, only 20 to 25 percent of expenditures are allocated directly to cities. The remaining 75 or 80 percent need to be allocated using an estimation procedure.

¹³ Poverty-related transfers include Aid to Families with Dependant Children (AFDC), Supplemental Security Income (SSI), food stamps, medical assistance, energy assistance, housing assistance, school lunch.

¹⁴ Because the official poverty level is very low, many people who qualify for government assistance are not officially considered poor. Raising the poverty level to 150 percent of the official threshold allows us to capture that share of the population more accurately. Moreover, age and gender variables permit us to target the recipient population better given the fact that women, children and elderly are more likely than others to receive aid. Further, studies using a cost-of-living versus earnings approach show that employing 200 percent of the official poverty thresholds is not an unreasonable method for estimating the number of persons earning below what certain

confidence in using poverty, gender and age as predictors for all programs combined.¹⁵ Thus, by using 1990 Census Data (STF3) – specifically the number of (1) persons who were impoverished, (2) adults aged 18 to 64 years, and (3) female by city – we can predict with 76.3 % accuracy the number of people who received poverty-related transfers in each city.¹⁶ We next computed a three-year average by city (from 1988 to 1990) to dampen the large annual variations in some redistributive expenditures, and transformed these figures into per capita averages to permit meaningful city comparisons. We then multiplied the per capita amount by the city population to generate city-specific expenditure figures and aggregated to the PUMA level. If there were more than one city in a PUMA, we summed these to get a PUMA-level figure, and if a city crossed PUMA boundaries we attributed the entire city value to the PUMA that contained the largest portion of the city’s land area. Finally, we divided the total amounts by the number of poor people living in each PUMA to obtain the PUMA-level federal antipoverty expenditure per poor person.¹⁷

With our INS data partitioned by zip code and our cultural affinity, labor demand, public assistance, and rent data separated by PUMA, the remaining task was to match zip codes to

government programs consider necessary for maintaining a regional standard of living (Ciscel 2000; More et al. 2000).

¹⁵ Logistically regressing having received a poverty-related federal transfer on being poor, an adult, and female produce the following parameter estimates and standard errors significant at the $p < .01$ level:

VARIABLE	PARAMETER ESTIMATE	STANDARD ERROR
POOR (150%)	+ 1.965	.0018
ADULT (18-64)	- 1.811	.0018
FEMALE	+ 0.046	.0018
INTERCEPT	- 0.675	.0016
Number of Observations:	7,570	
Concordant Pairs:	76.3%	

¹⁶ This assumes, however, that the regional predictors of receiving federally funded assistance are the same in each city.

¹⁷ See Joassart-Marcelli and Musso (2001) for another description of this methodology, but at the city rather than the PUMA level.

PUMAs.¹⁸ This was accomplished by overlapping zip code and PUMA boundary files and, similar to how we matched cities to PUMAs, when a zip code spanned multiple PUMAs, we assigned the zip code to that PUMA that enveloped the largest share of the zip codes territory. Aggregating the INS data (originally at the zip code level, the CFFR data (initially at the city level), and the SCAG and PUMS data (categorized at the PUMA level) at the PUMA level – although not as desirable as having all data categorized initially at the same geographical level, enables us to investigate how individual-demographic characteristics and spatial-institutional factors influence new immigrants' settlement choices.

In the first phase of our regression analysis, a logistic regression model is employed to investigate the individual-demographic determinants of initial suburban settlement for the five-county southern California region. Each LPR's PUMA of settlement, or more precisely, its designation as either urban or suburban (SUBURB), is logistically regressed on her/his demographic characteristics (AGE, AGESQ, FEMALE, MARRIED, LATINO, ASIAN); the within-PUMA foreign-born geographic concentration (FBPCT), a proxy for the demand for labor (JOBGROW), public assistance spending (ANTIPOV), and rental prices (RENT and RENTSQ); and controlling for year of entry (Y_t is a vector of eight dummy variables representing 1991 through 1998, with 1990 omitted).

$$\begin{aligned} \text{SUBURB}_{ipt} = & \alpha + \text{AGE}_{ipt}\beta_1 + \text{AGESQ}_{ipt}\beta_2 + \text{FEMALE}_{ipt}\beta_3 + \text{MARRIED}_{ipt}\beta_4 + \\ & \text{LATINO}_{ipt}\beta_5 + \text{ASIAN}_{ipt}\beta_6 + \text{FBPCT}_{ip, 90}\beta_7 + \text{JOBGROW}_{ip, 90-94}\beta_8 + \\ & \text{ANTIPOV}_{ip, 88-90}\beta_9 + \text{RENT}_{ip, 90}\beta_{10} + \text{RENTSQ}_{ip, 90}\beta_{11} + Y_t + \varepsilon_{ipt}, \quad [1] \end{aligned}$$

¹⁸ P.O. Box numbers are excluded because they are not attached to residences.

Thus, $SUBURB_{ipt}$ is a dichotomous variable equal to one if individual i intended to settle in a suburban PUMA, p , or to zero if in an urban PUMA, in year t . Equation [1] is estimated using annual individual-level INS data and includes 793,131 (or 87 percent) of the 911,266 newly legalized aliens who reported southern California as their intended place of settlement.¹⁹

<<< TABLE 1 ABOUT HERE >>>

Each explanatory variable is defined in Table 1, and the anticipated directional influence on $SUBURB$ is indicated by the sign inside the parentheses immediately following each variable name. For instance, relatively younger (e.g., working-age) recent immigrants are expected to be less likely to settle initially in the suburbs given (1) that employment opportunities are more abundant in cities, and (2) older immigrants' relative financial ability to live in the suburbs or their need to do so to be with their families. This quadratic relationship between age and suburban settlement is captured by the expected negative coefficient on AGE and positive coefficient on $AGESQ$. Among the four remaining individual demographic variables, we expect that being $MARRIED$ or $ASIAN$ (Li 1997, 1998) is likely to have a positive impact on the probability of newer immigrants settling in the suburbs. In short, recent immigrants who are older, married, or Asian are expected to be more likely to settle in the suburbs. Being Latino, on the other hand, is expected to have a negative impact on suburban settlement given this group's historic urban concentration and relatively low skill endowment. However, absent convincing theoretical reasons about how being $FEMALE$ is likely to impact individual residential locational choices, we refrain from making any predictions concerning gender.

¹⁹ The 118,135 observations (13 percent) that are excluded were refugees and asylees adjusters. Alternatively, 268,827 LPRs (29.5 percent) were non-refugee adjusters and 524,303 (57.5 percent) were new arrivals.

While we control for specific spatial-institutional characteristics of suburban neighborhoods using FBPCT, JOBGROW, ANTIPOV, RENT, and RENTSQ, coefficients on these variables merely indicate differences between urban and suburban PUMAs rather than how these factors influenced individual suburban settlement.

A more traditional locational choice model, as developed below, is needed to determine how extra-individual factors influenced residential choice. Here we expect each spatial-institutional variable to have an independent positive impact on the likelihood to settle in the suburbs. FBPCT is expected to have a magnetic effect given that new LPR are likely to desire to reside near their compatriots for both psychological and material reasons. We anticipate such an effect from JOBGROW theoretically because employment growth may provide individuals with attractive economic opportunities, and because empirical work in the southern California region indicates that recent job growth has occurred disproportionately in suburban rather than urban areas (Pastor and Marcelli 2000). We hypothesize on both theoretical and empirical grounds that ANTIPOV will also increase the probability of settling in the suburbs. First, public assistance can provide relatively impecunious individuals with an income source. And second, recent evidence regarding antipoverty public spending in the five-county southern California region has shown that per capita antipoverty spending is higher in relatively wealthy suburban areas (Joassart-Marcelli and Musso 2001). Finally, because rental prices reflect quality of housing, we hypothesize that average rental price (RENT) is likely to impact the probability of settling initially in the suburbs positively but only up to a certain threshold, after which it is likely to have the opposite effect (RENTSQ).

Equation 2 represents such a locational choice model. Here we regress the natural log of the total number of recent non-IRCA legalized immigrants (NL_LPR) on our regional-institutional variables, controlling for year fixed effects (Y_t) from 1990 to 1998, by PUMA. We do

so first for all 88 PUMAs for which we have data (four PUMAs lack sufficient antipoverty data), and then separately for the remaining 50 urban and 38 suburban PUMAs.

$$\begin{aligned} \text{NL_LPR}_{pt} = & \alpha + \text{SUBURB}_p\beta_1 + \text{FBPCT}_{p,90}\beta_2 + \text{JOBGROW}_{p,90-94}\beta_3 + \\ & \text{ANTIPOV}_{p,88-90}\beta_4 + \text{RENT}_{p,90}\beta_5 + \text{RENTSQ}_{p,90}\beta_6 + Y_t + \varepsilon_{pt}, \end{aligned} \quad [2]$$

Because there are nine values for NL_LPR per PUMA (one for each year from 1990 to 1998), there are a total of 792 observations (88 PUMAs multiplied by nine years). Thus, NL_LPR_{pt} is equal to the log of the number of LPR who settled in a particular PUMA, p, in year t.

After summarizing suburban settlement trends among new LPR in southern California during the 1990s, we proceed with multivariate logistic and OLS analysis of initial suburban settlement, highlighting the differential impact of individual characteristics and four regional institutional factors at the neighborhood level.

DESCRIPTIVE AND ESTIMATION RESULTS

Analysis of regional origin reveals that foreign-born Asians (44 percent) and Latinos (38 percent) led immigration to southern California from 1990 to 1998. European immigrants represented only 14 percent of the 911,266 new immigrants, and foreign-born persons from other regions of the world represented merely 4 percent. Further, whereas Latino immigration rose from 27 to 51 percent of the LPR flow, European immigration fell from 18 to 8 percent and Asian immigration fell from 51 to 36 percent (Figure 2).

<<< ***FIGURE 2 ABOUT HERE*** >>>

Although not shown here, there were more legal Mexican immigrants (23 percent) who obtained LPR status between 1990 and 1998 in southern California than any other national origin group. Only by summing the next three largest source nations, Philippines (10 percent), Vietnam (7 percent), and El Salvador (6 percent), do we reach the number of LPR equal to that of Mexican origin.

While Los Angeles County continued to attract the largest proportion of the 911,266 new immigrants in the 1990s, the remaining four counties became increasingly popular (Figure 3). The proportion of LPR who settled in Los Angeles County, for instance, equaled 76 percent in 1990, but had fallen to 68 percent by 1998. Meanwhile, Riverside County experienced the largest rise (3.2 percent), San Bernardino County saw a modest rise of 1.8 percent, and Orange and Ventura Counties each gained about one percent each.

<<< **FIGURE 3 ABOUT HERE** >>>

Applying our housing development definition of suburban and urban areas to the entire the five-county southern California region, we find that the proportion of LPR who settled initially in a suburban rather than an urban PUMA rose from 29 to 37 percent. Overall, 33 percent gravitated toward the suburbs over the entire 1990-98 period. Consequently, although L.A. remains the dominant destination for most immigrants legalized during the 1990s and two of every three new LPR decided to live in an urban area, it is also the case that the proportion of new LPR leapfrogging over the city for the suburb has been rising. We may tentatively conclude, therefore, that newer legal immigrants are indeed contributing to suburbanization in the greater Los Angeles region, but a trickle rather than a stream is perhaps the more appropriate metaphor for the inflow to date.

Figure 4 and Maps 1-2 illustrate why the slight rise in the proportion of LPR going to the suburbs should be interpreted with caution. It is the result of the number of new LPR settling in urban areas declining and the number headed for the suburbs remaining fairly constant throughout the 1990s, not substantially more LPR choosing the suburbs over the city. Still, an additional 30,000 to 40,000 LPR moving to the suburbs annually increases the demand for housing and contributes to the need for greater public investment in infrastructure.²⁰

<<< **FIGURE 4 ABOUT HERE** >>>

<<< **MAPS 1 & 2 ABOUT HERE** >>>

Table 2 provides descriptive statistics for the individual-demographic and regional-institutional explanatory variables that are used to investigate variation in the decision to reside in an urban or a suburban PUMA upon receiving LPR status.

<<< **TABLE 2 ABOUT HERE** >>>

What is immediately apparent is that, excepting regional origin, there is little difference among the demographic profile of urban and suburban settlers. The mean age of LPR entering either an urban or a suburban area is 31, and the percent who were female or married are almost identical. Likewise, regardless of urban or suburban destination, very similar proportions of LPR were likely to report Service, Professional, or Management occupations (e.g., lower-skilled occupations) and to have obtained their LPR status via family-related (family-sponsored or

²⁰ Heer (2000) argues that one possible explanation for the decline in the proportion of new immigrants choosing to reside initially in southern California during the 1990s is regional labor market saturation countervailing forces of cumulative causation.

immediate relative) rather than employment-based or refugee provisions. Conversely, LPR from Asian nations were more likely than others to have settled directly in a suburban PUMA – a dynamic that has led to the conceptual development of the *ethnoburb* (Li 1997; 1998) – and those from European nations were more than twice as likely to have settled in an urban neighborhood.

The regional-institutional factors hypothesized to influence urban-suburban differences in initial residential choice vary more significantly than individual characteristics, however. But first, as a second check on whether our criterion for separating urban from suburban PUMAs is reasonable, we see that the 41 PUMAs (45 percent of those in the region) tagged as suburban represented approximately 60 percent of southern California's population.²¹ While there exist no perfectly comparable estimates of the proportion of southern California residents who were or are suburbanites, as of 1990 approximately 40 percent of the region's population resided outside of Los Angeles County. Assuming, conservatively, that at least one-third of the remaining residents of Los Angeles County live in suburban rather than urban areas, then our estimate that about 60 percent of the southern California population live in suburbs has some credibility (Fulton et al. 2000; Wolch et al. 2001).

When we turn to examining differences in the four regional-institutional variables, we see that the suburbs had a lower proportion of foreign-born residents, experienced limited but positive job growth, and required a renter to pay about \$50 more per month on average. Mean monthly antipoverty expenditure per poor person, on the other hand, was almost identical in urban and suburban PUMAs. From these simple descriptive characteristics it would thus seem reasonable to suspect that certain geographic factors would have more than a modest influence on where new

²¹ The first check was simply to observe the list of PUMAs falling into the suburban category and verify with regional experts that our categorizations are reasonable. Four PUMAs were questionable using our 1960-90 housing development criterion (Santa Ana, Anaheim, Fullerton, and Riverside), but as we shall see below redefining these as urban has little effect on regression results. Most studies distinguish the suburbs from central cities (using the census definition) and from rural areas. In short, by 1990 approximately one half of the U.S.

immigrants decide to settle. Maps 3-6 show the spatial distribution of the 1990 foreign-born population (Map 3), the percentage change in the number of jobs from 1990-94 (Map 4), the average antipoverty expenditures per poor person (Map 5), and the average median monthly rent in 1990 (Map 6).

<<< MAPS 3-6 ABOUT HERE >>>

Figures 5-8 take this descriptive analysis a step further by providing scatter diagrams of the bivariate relationship between the percentage of LPR and each of our four regional-institutional variables by PUMA. While the percentage LPR increases at a decreasing rate as the 1990 foreign-born concentration (Figure 5) or average median monthly rent (Figure 8) rise – indicating that LPR is positively related to these regional-institutional variables up to some threshold – job growth (Figure 6) and federal antipoverty expenditures (Figure 7) are negatively related.

<<< FIGURES 5-8 ABOUT HERE >>>

Logistically regressing whether individual LPR initially settled in an urban or suburban PUMA suggests, as anticipated, that those who were younger were less likely to settle initially in the suburbs and being married had the converse effect (Table 3, Column 1). Further, being female, Latino, or Asian also positively influenced the probability of a LPR having settled in the suburbs. For instance, even after controlling for regional-institutional factors (Columns 2), females were 70

population resided in the suburbs – defined as “municipalities and places in metropolitan areas outside of the political boundaries of the large central cities” (Baldassare 1992: 476).

percent more likely to settle in the suburbs than their male counterparts.²² While those who were married were three times as likely to have settled in a suburban PUMA, Latinos were 17 times, and Asians were 15 times, more likely than non-Latino white LPR.

<<< *TABLE 3 ABOUT HERE* >>>

The coefficients on the regional-institutional variables indicate that the foreign-born were less concentrated, that job growth was greater, that per capita antipoverty expenditures were slightly lower, and that rent was somewhat higher in the suburbs vis-à-vis cities. These findings confirm that the regional-institutional differences between urban and suburban areas reported in Table 2 above hold under multivariate scrutiny. But they tell us nothing concerning how these factors influenced the decisions of LPR whether to settle initially in the suburbs.²³

In Column 3 we employ OLS and regress the log of the total number of recent LPR on our four regional-institutional variables across 88 PUMAs from 1990 to 1998. From the coefficient on SUBURB, we see that recent LPR were not drawn to particular neighborhoods simply because they were tagged as suburban by our housing development definition. Rather, other characteristics of PUMAs seem to have had greater influence on the locational choices of LPR in southern California during the 1990s. First, as hinted at above, the cultural affinity hypothesis finds some support. A 10-point increase in the percent resident foreign-born within a given PUMA at the mean had the independent effect of attracting approximately 177 additional

²² This percentage is computed by multiplying the coefficient for female in the second column of Table 3 (.031) by the mean of the dependent variable (.3295) and one minus this mean. This computation converts the coefficient into a probability and is used to interpret all remaining coefficients. Marcelli and Cornelius (2001) also find that female Mexican migrants are more likely than their male compatriots to settle permanently in the United States.

²³ This is because each of the 92 PUMAs are assigned a value of 1 or 0 for the dependent variable (suburb), and each PUMA has a unique value for each of the four regional-institutional factors. Thus, reported coefficients simply indicate whether differences in these characteristics are statistically significant.

LPR.²⁴ Alternatively, a 10-point increase in number of jobs within a PUMA dissuaded some 56 LPR from settling there. While perhaps counterintuitive, this result is unsurprising given that immigrants are more likely to (1) move to poorer areas less likely to have experienced job growth, and (2) target larger geographical areas (e.g., a region or the suburbs) rather than a specific neighborhood (PUMA) to capitalize on employment opportunities.²⁵ And lastly, while the level of federal antipoverty assistance apparently had little or no effect on the number of LPR settling by PUMA, at the mean number of LPR arriving each year by PUMA an increase in average rent of \$50 resulted in an additional 250 LPR. However, RENTSQ is also significant, and as we saw from Figure 8, the percent LPR begins to decline when monthly rent reaches \$675, a figure that is a mere three dollars above the mean rent for the entire region (\$673). Such a result is consistent with the idea that the housing market may provide a check to individual-level motivations for suburban settlement (Massey 1985). In sum, these five regional-institutional variables explain 47 percent of the variation in LN_LPR.²⁶

When we analyze how the various regional-institutional factors influenced settlement choice by neighborhood within suburban (4) and urban (5) areas separately, all coefficients are signed similarly. Several differences, however, are worth highlighting. First, the impact of FBPCT on neighborhood choice was almost double in the suburbs than it was in urban areas. The implication is that when selecting a specific neighborhood in which to reside, new LPR who

²⁴ The figure of 177 is computed in the following way. The coefficient of 2.081 represents the impact of a unit change in FBPCT on LN_LPR. A one unit change in this case is not useful given that our independent variable (FBPCT) ranges from .1 to .8. To arrive at the number of additional LPR that would have settled in a PUMA in a given year resulting from a 10 percent rise in FBPCT requires taking the exponential of the mean of LN_LPR (6.6417) to obtain the number of LPR (766), and then adding the equivalent of a 10 percent change (.2081, which is 10 percent of the coefficient) to the mean of LN_LPR (thus giving 6.8498), computing its exponential to obtain the new number of LPR (943), and subtracting (943 - 766 = 177).

²⁵ Recent research in Los Angeles County indicates that poorer immigrants tend to be more flexible in their modes of transportation (Ong and Houston 2001).

²⁶ Given that there are only 88 independent data points in this regression after employing a geographic cluster correction technique (StataCorp 1999), this level of explanatory power is unsurprising and is also the explanation for showing statistical significance levels from .01 to .20.

settled in the suburbs relied more heavily on cultural affinity than did those who settled in the more traditional urban core. While JOBGROW is negatively associated with neighborhood settlement, implying that new LPR are more likely to settle initially in job-poor neighborhoods regardless of whether in urban or suburban locations, those who choose the latter destination tend to settle in relatively less economically deprived (e.g., job-poor) areas. And lastly, while welfare availability does not appear to be an important determinant of settlement choice at the neighborhood level within cities or suburbs, the difference in the RENT coefficients suggests that new immigrants are less responsive to rental price increases in urban areas. It is unlikely, however, that this finding reflects individual choice per se. Rather with the passage of Proposition 13 in 1978, former suburban areas began to incorporate and to institute zoning regulations to ensure a higher tax base. In short, this had and continues to have the effect of creating more housing segregation in suburban compared to urban areas, effectively excluding many immigrants and lower-income minority residents from higher rent communities.²⁷

CONCLUSION

Prominent immigration scholars have recently announced that “suburban settlement is emerging as a hallmark of contemporary immigration in the United States” (Alba et al. 1999: 446). Controlling for individual demographic characteristics, this study investigates the impact of four regional-institutional factors (foreign-born concentration, job growth, welfare availability, and rental prices) on the decision to settle in the suburbs among legal permanent residents (LPR) who chose to reside in the five-county southern California region between 1990 and 1998. Like most

²⁷ An indication that our dependent variable (SUBURB) is independent from our four regional-institutional variables is that the highest correlation is between SUBURB and FBPCT (- 0.59). The next highest correlation is with JOBGROW (+ 0.44), and the two lowest were with ANTIPOV (- 0.005) and RENT (+ 0.17). Thus, we have some confidence that these factors are contributing information independent from the proportion of houses that were built between 1960 and 1990. Further, to check whether our regression results are period specific, we reran

previous research (Bartel 1989; Belanger and Rogers 1992; Buckley 1996; Dunlevy 1991; Kritz and Nogle 1994; Massey 1986; Neuman and Tienda 1994; Zavodny 1999), we find that the desire to reside near other foreign-born persons is the most important factor influencing where recent LPR initially settled during the 1990s in southern California. While foreign-born concentration (still highest in urban areas) may have represented a powerful drag on the probability to settle initially in the suburbs, it is estimated that a 10-point increase in the percent foreign-born by neighborhood throughout the region would have attracted 177 additional LPR on average. The stronger neighborhood pull effect found in the suburbs implies that connecting with one's compatriots is relatively more important for those settling in the suburbs (Li 1997, 1998).

Employing an improved proxy to estimate labor market conditions (Pastor and Marcelli 2000; Raphael 1998a,b), we also find that while the suburbs experienced job growth, urban areas did not in the early 1990s. Thus, new LPR settling in the suburbs were less likely to move into a neighborhood that was jobs-poor relative to those settling initially in urban areas. This is supportive of Heer's (2000) labor market saturation hypothesis as well as previous work suggesting that labor market conditions may influence immigrants' residential choices (Bartel 1989). It is inconsistent, however, with other work indicating that labor market conditions are relatively unimportant (Bartel and Koch 1991; Filer 1992; Kritz and Nogle 1994; Zavodny 1999).

Similar to Zavodny (1999) but contrary to Borjas (1999a,b) and Buckley (1996), welfare availability does not appear to have impacted new immigrants' residential choices. One explanation for this is that this study is analyzing residential decision making among new immigrants at too small a geographic level and therefore misses required variation in poverty spending. This does not appear to be the case, however. The annual antipoverty expenditure variable constructed from various Consolidated Federal Funds Report (CFFR) programs ranges

all models with a JOBGROW variable created from 1980-90 data for L.A. County only. Results were very similar,

from about \$900 to \$6,300 per poor person. A more feasible explanation is that refugees and asylees were intentionally excluded from the above regression analyses, and past work suggests these two groups may have been more likely than other foreign-born entrants to use welfare (Zavodny 1999; Zimmerman and Fix 1994).

Similar to cultural affinity and labor market conditions (but unlike antipoverty spending) rental prices also influenced whether LPR settled in the suburbs. LPR, like many other residents, desired to reside in more attractive (e.g., expensive) neighborhoods, but at a certain rental threshold this no longer effectively influenced locational choice in a positive direction. Further, evidence provided here suggests that the threshold factor was a more important determinant for those headed for the suburbs than for those moving into urban areas.

Our finding that a rising proportion of newer immigrants settled initially in the suburbs during the 1990s in southern California should be interpreted with some caution. This was primarily driven by a decreasing number of LPR arriving in urban areas rather than an increasing number settling in the suburbs. Still, almost one third (or 300,000) of all new LPR who came to southern California in the 1990s settled in suburbia.

While it is clear that regional-institutional factors were important determinants of suburban settlement, certain individual characteristics influenced newer legal immigrants' decision to settle in the suburbs as well (Alba et al. 1999). Specifically, being younger, female, married, and Asian or Latino had a positive impact on the probability of newer LPR in southern California to settle initially in the suburbs. While these results are consistent with the individual-level emphasis given in Massey's (1985) well-known model of spatial assimilation, our finding that foreign-born concentration and suburban job growth had a magnetic rather than a constraining effect on newer immigrants' initial settlement in the suburbs calls into question the notion that collective forces

as they were when we redefined the four "questionable" PUMAs that were defined as suburban.

only constrain individual-level motivations. Thus, although some support is found for the original spatial assimilation model at the individual-demographic level, like Alba et al. (1999), the present study's results suggest the need for some modification.²⁸

The main methodological contribution of this paper, building on Pastor and Marcelli (2000) and Joassart-Marcelli and Musso (2001), is to connect various data at a lower geographical level than most past research to investigate what impact four spatial-institutional factors (e.g., federal antipoverty expenditures per poor person, job growth, and rental prices) had on suburban settlement among recent legal immigrants in southern California. Alba et al. (1999), for instance, while arguing convincingly that past assimilative forces in the suburbs may be waning due to increasing concentrated suburban settlement among U.S. immigrants, do not include any spatial explanatory variables in their study. Alternatively, Zovodny (1999) does include spatial-institutional factors in her locational choice model, but does not address the question of suburbanization.

The primary theoretical contribution, emanating directly from the empirical results outlined above, is that while individual-level characteristics remain important determinants of suburban settlement, collective forces (e.g., suburban employment growth) may stimulate rather than simply constrain (e.g., urban foreign-born concentration or high rent in the suburbs) urban sprawl. We find very little evidence, however, that federal antipoverty spending impacted the locational choices of newer legal immigrants. Thus, it seems unlikely that spatially differentiated antipoverty spending is likely to greatly influence whether newer immigrants decide to settle in the suburbs.

Conversely, our results suggest that generating attractive employment opportunities and affordable housing in urban areas could reduce the probability of newer legal immigrants settling

²⁸ To be fair, Logan and Molotch (1987) and Massey and Denton (1993) have recognized that African Americans and nonwhite minorities may be exceptions to the original spatial assimilation model, and others have suggested

in the suburbs. And although this study does not employ multivariate analysis to investigate differences in the probability of suburban settlement between employment- and family-based entrants, by occupation, or by industry directly, descriptive statistics suggest that there are few differences by these categories. Consequently, simply shifting emphasis in immigration policy toward employment-based preferences is unlikely to alter patterns of urban sprawl already underway. In sum, if the goal is to slow the current trickle of recent new legal permanent immigrants to the suburbs in southern California, changes in employment and housing policy, rather than to immigration or welfare policy are more likely to be effective. The analysis and results reported here are considered a first step toward trying to understand how individual-demographic and spatial-institutional factors influence the propensity for immigrants to settle in the suburbs. One promising direction for future research would be to investigate further, with different data from other regions in the United States, whether and to what extent lower institutional barriers to suburban settlement (Alba et al. 1999) and the saturation of economic opportunity in urban areas (Heer 2000) influence immigrants' suburban settlement decisions. Such an endeavor would be consistent with the view that more than focusing on welfare and immigration policy is needed. Rather, employment and housing policy intervention at both a regional and extra-regional level is required to alter path-dependent processes such as urban sprawl (Atkinson and Oleson 1996).

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TABLE 1: Variables Used in Logistic Regression Analysis of Legal Permanent Resident (LPR) Suburban Settlement

DEPENDENT VARIABLE	
<i>SUBURB</i>	Dummy variable set to 1 if new LPR intended to settle in a suburban PUMA
INDIVIDUAL CHARACTERISTICS	
<i>AGE (-)</i>	Age of LPR
<i>AGESQ (+)</i>	Age of LPR squared
<i>FEMALE (?)</i>	Dummy variable set to 1 if LPR is female
<i>MARRIED (+)</i>	Dummy variable set to 1 if LPR is married
<i>LATINO (?)</i>	Dummy variable set to 1 if LPR is from a Latin American Nation
<i>ASIAN (+)</i>	Dummy variable set to 1 if LPR is from an Asian nation
REGIONAL-INSTITUTIONAL FACTORS	
<i>FBPCT (+)</i>	Percent foreign-born by PUMA, 1990
<i>JOBGROW (+)</i>	Percent change in the number of jobs by PUMA, 1990-94
<i>ANTIPOV (+)</i>	Mean monthly antipoverty expenditure per poor person by PUMA, 1988-90
<i>RENT (+)</i>	Average Median monthly rent by PUMA, 1990
<i>RENTSQ (-)</i>	Mean monthly rent squared by PUMA, 1990
RISIDUAL	Error term

Table 2: Descriptive Statistics by Urban/Suburban Area, Southern California, 1990-1998

	URBAN	SUBURBAN
DEMOGRAPHIC		
Age (Mean)	31	31
Female (%)	54.7	55.6
Married (%)	50.0	50.8
Regional Origin		
Latin America	38.9	36.6
Asia	40.7	51.0
Europe	17.2	8.4
Other	3.2	4.0
Occupation of Persons Aged 16 or Older (%)		
Professional & Management	22.2	21.7
Technical & Admin. Support	10.9	9.1
Service	43.1	46.5
Farming, Forestry, & Fishing	2.1	2.8
Higher-Skilled Labor	6.6	5.8
Lower-Skilled Labor	15.2	14.2
Immigrant Class of Admission (%)		
Family-Sponsored	28.8	32.1
Employment Based	15.0	12.8
Immediate Relative	27.9	33.5
Refugee/Asylee	13.6	11.7
Other*	14.9	9.9
Number of LPR Observations, 1990-98	615,167	296,099
Percent LPR by Area, 1990-98	67.5	32.5
1990-98 LPR as % of Area's 1990 Population	10.8	3.5
REGIONAL		
Number of PUMAs	51	41
PUMAs, % of Urban-Suburban Area	55.4	44.6
Population, 1990	5,721,839	8,498,174
Population, % of Urban-Suburban Area	40.2	59.8
Foreign-Born, 1990 (%)	47.3	29.6
Job Growth, 1990-94 (%)	-9.4	1.0
Antipoverty Expenditure Per Poor Person (Mean), 1988-90	\$1,924	\$1,900
Rent, 1990 (Mean)	\$654	\$703

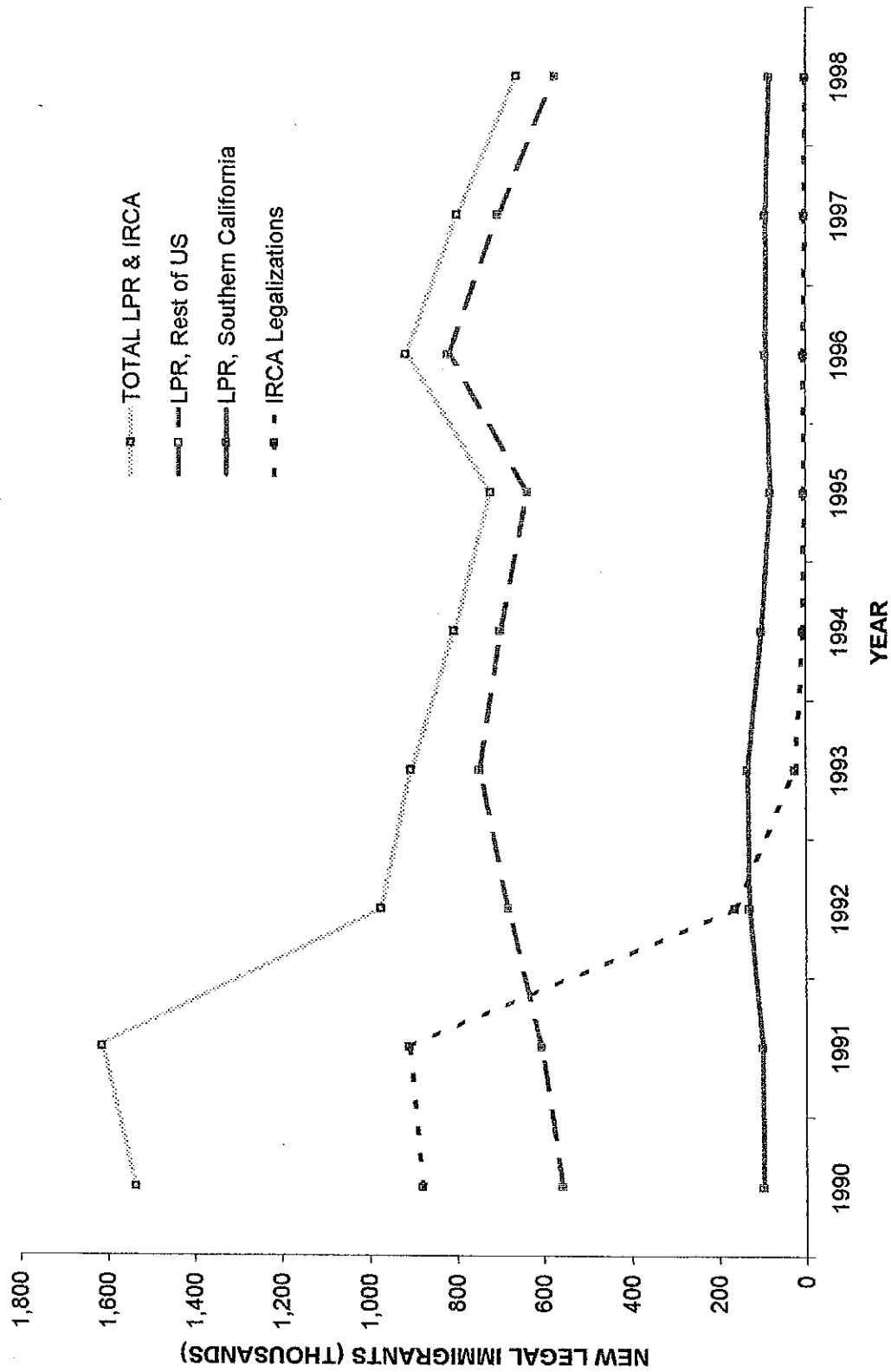
Source: 1990-98 INS Legal Public Use Tapes; 1990 PUMS; 1990-94 SCAG; and 1988-90 CFFR

TABLE 3: LOGISTIC (COLUMNS 1-2) AND OLS REGRESSION ANALYSIS (COLUMNS 3-5) OF INITIAL LEGAL PERMANENT RESIDENT (LPR) SETTLEMENT, SOUTHERN CALIFORNIA, 1990-98

INDIVIDUAL CHARACTERISTICS	(1)	(2)	(3)	(4)	(5)
AGE	-0.023 *** (0.003)	-0.022 *** (0.003)			
AGESQ	0.000 *** (0.000)	0.000 *** (0.000)			
FEMALE	0.036 *** (0.009)	0.031 * (0.016)			
MARRIED	0.222 *** (0.033)	0.130 *** (0.033)			
LATINO	0.137 (0.316)	0.776 *** (0.283)			
ASIAN	0.392 # (0.334)	0.677 *** (0.230)			
REGIONAL-INSTITUTIONAL FACTORS					
SUBURB			0.005 (0.097)		
FBPCT		-11.337 ** (4.458)	2.081 *** (0.371)	1.748 *** (0.479)	3.560 *** (0.510)
JOBGROW		7.608 *** (2.759)	-0.752 ** (0.295)	-1.454 * (0.787)	-0.392 # (0.273)
ANTIPOV		-0.001 * (0.001)	-0.000 # (0.000)	-0.000 (0.000)	-0.000 (0.000)
RENT		0.038 *** (0.014)	0.005 *** (0.002)	0.005 * (0.003)	0.002 # (0.002)
RENTSQ		-0.000 *** (0.000)	-0.000 ** (0.000)	-0.000 # (0.000)	-0.000 # (0.000)
PERCENT CONCORDANT PAIRS	67.1	85.2	0.47	0.35	0.58
R-SQUARED			792	450	342
N	775,433	766,555			

NOTE: ***p<.01; **p<.05; *p<.10; #p<.20

Figure 1: Traditional New Legal Permanent Residents (LPR) and Immigration Reform and Control Act (IRCA) Legalizations, United States, 1990-1998



**Figure 2: New Legal Permanent Residents by Regional Origin,
Southern California, 1990-98**

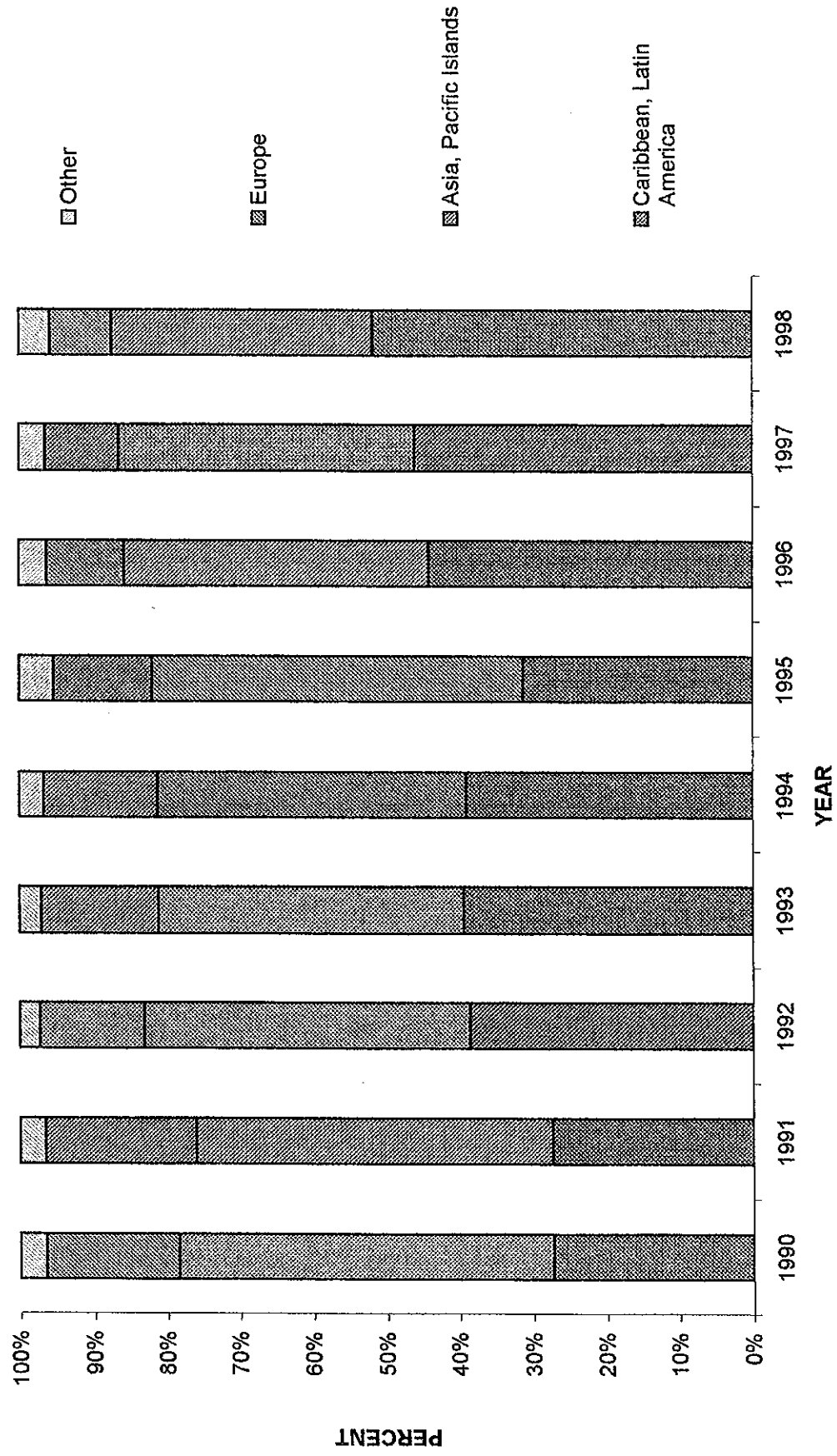
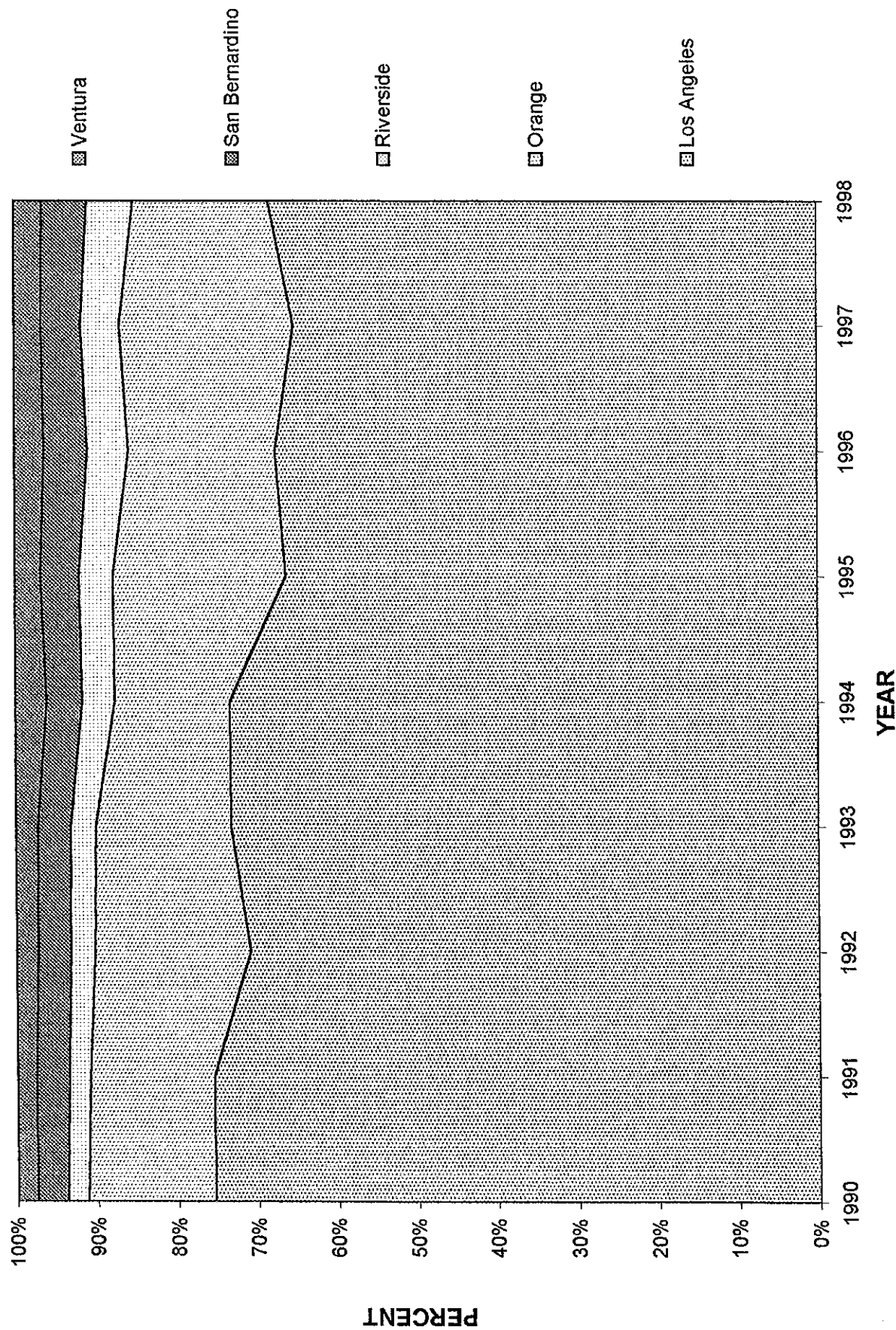


Figure 3: Intended County of Residence, New Legal Permanent Residents, Southern California, Percent, 1990-98



Source: INS Legal Immigrant Public Use Files, FY 1990-98

Figure 4: Intended Urban or Suburban Residence, New Legal Permanent Residents, Southern California, 1990-98



Figure 5: Percent Legal Permanent Resident (LPR), 1990-98, and Percent 1990 Foreign-Born Resident Concentration, by PUMA, Southern California

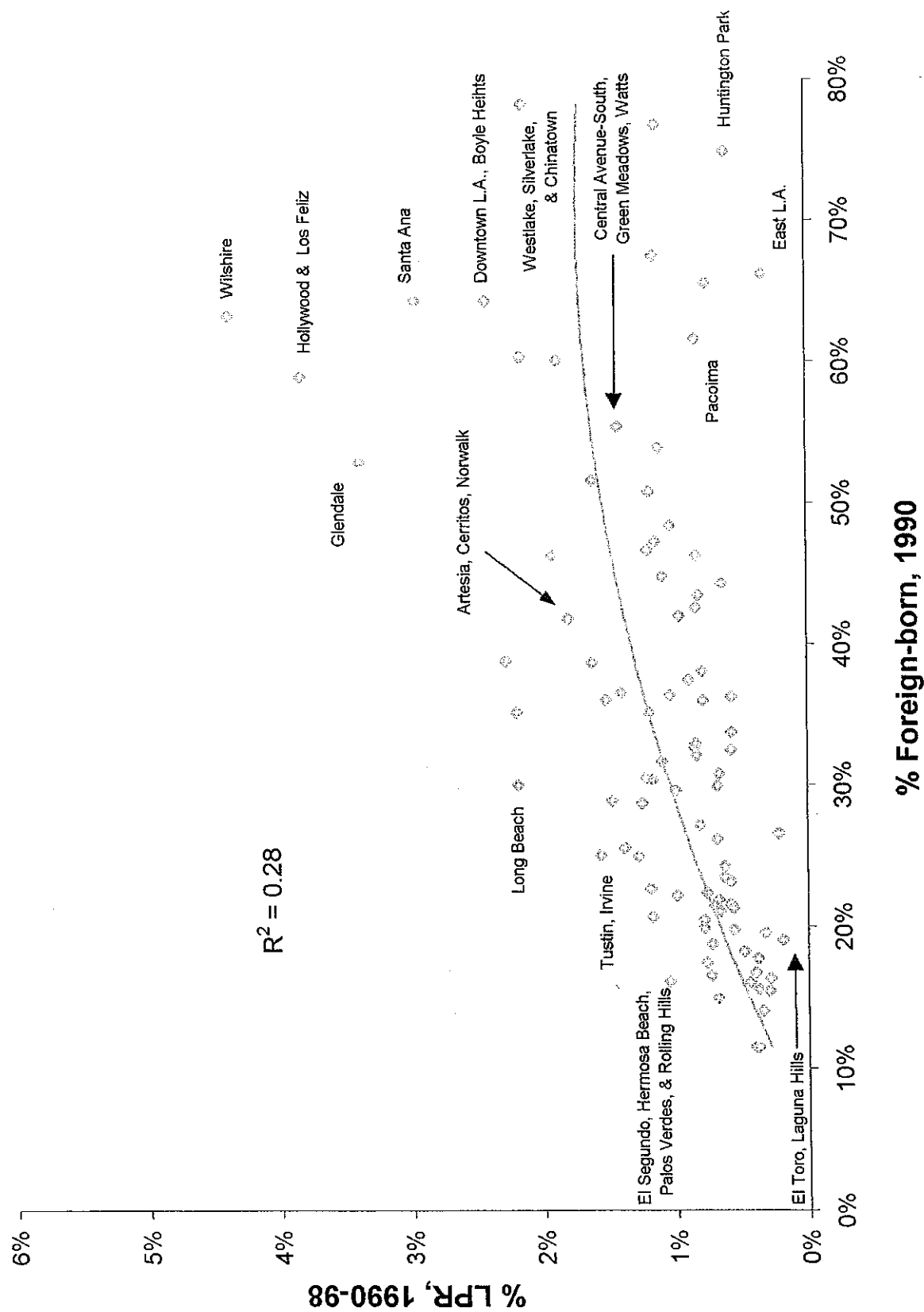


Figure 6: Percent Legal Permanent Resident (LPR), 1990-98, and Percent Change in Number of Jobs, 1990-94, by PUMA, Southern California

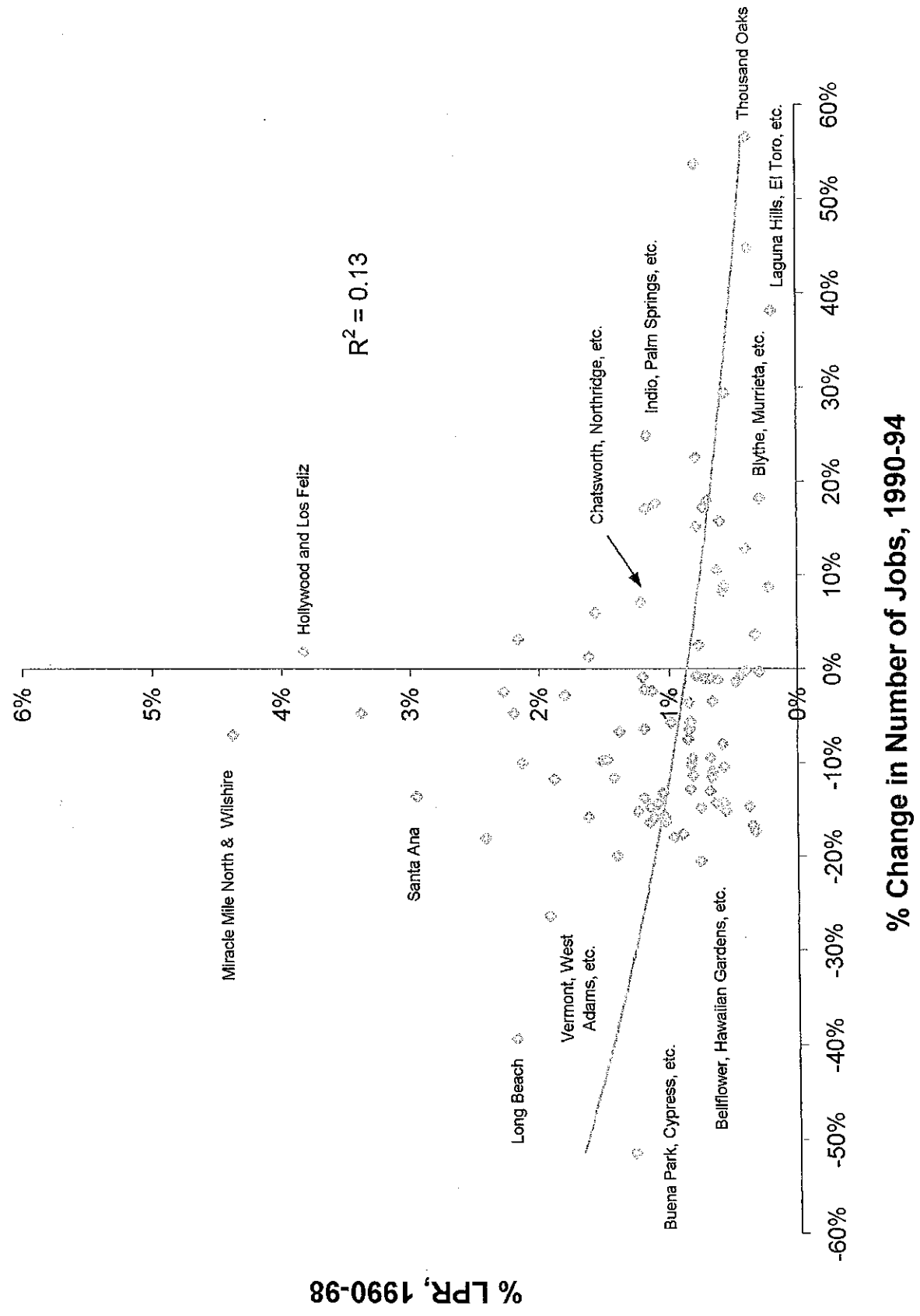
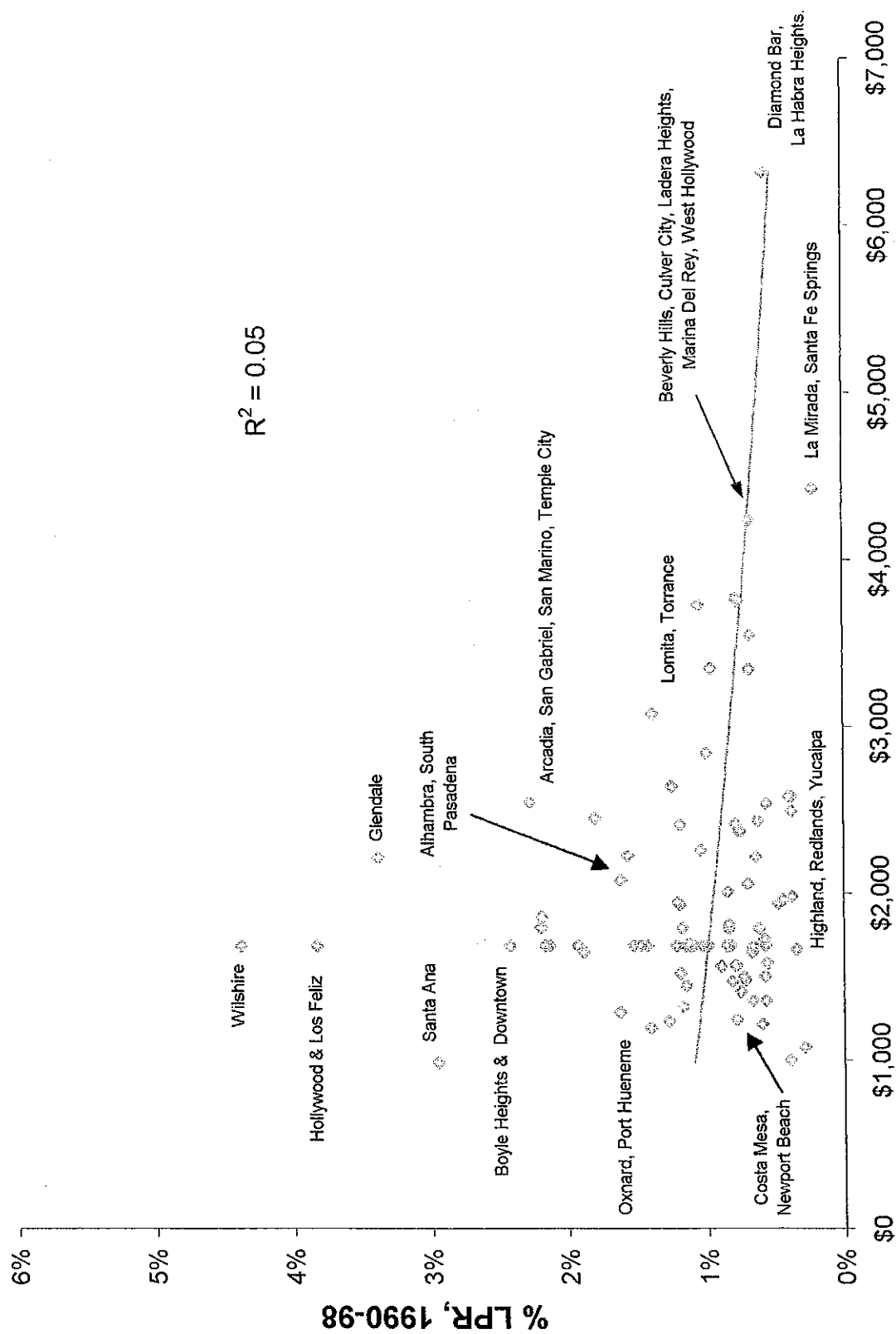
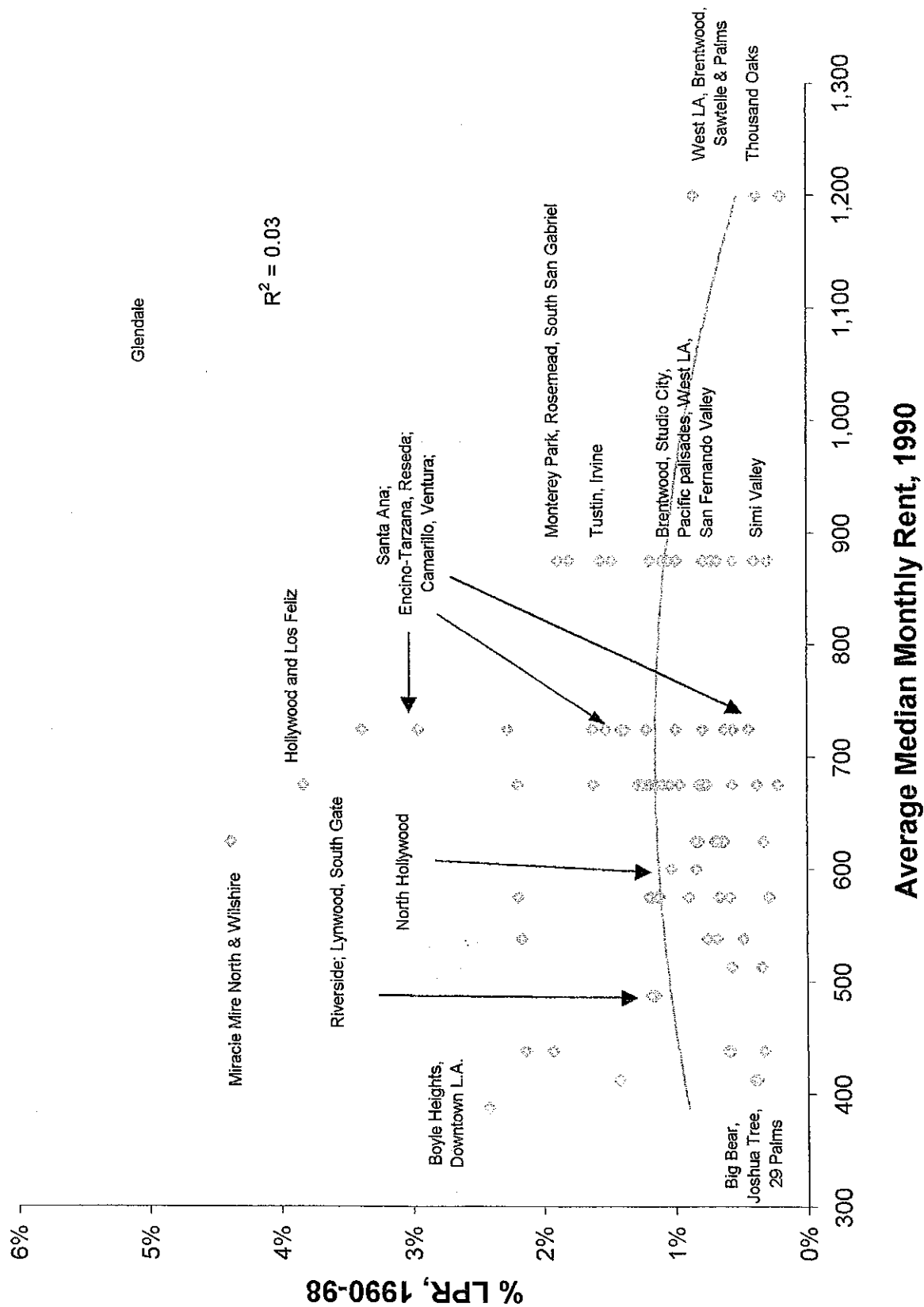


Figure 7: Percent Legal Permanent Resident (LPR), 1990-98, and Mean Federal Antipoverty Expenditure per Poor Person, 1988-90, by PUMA, Southern California

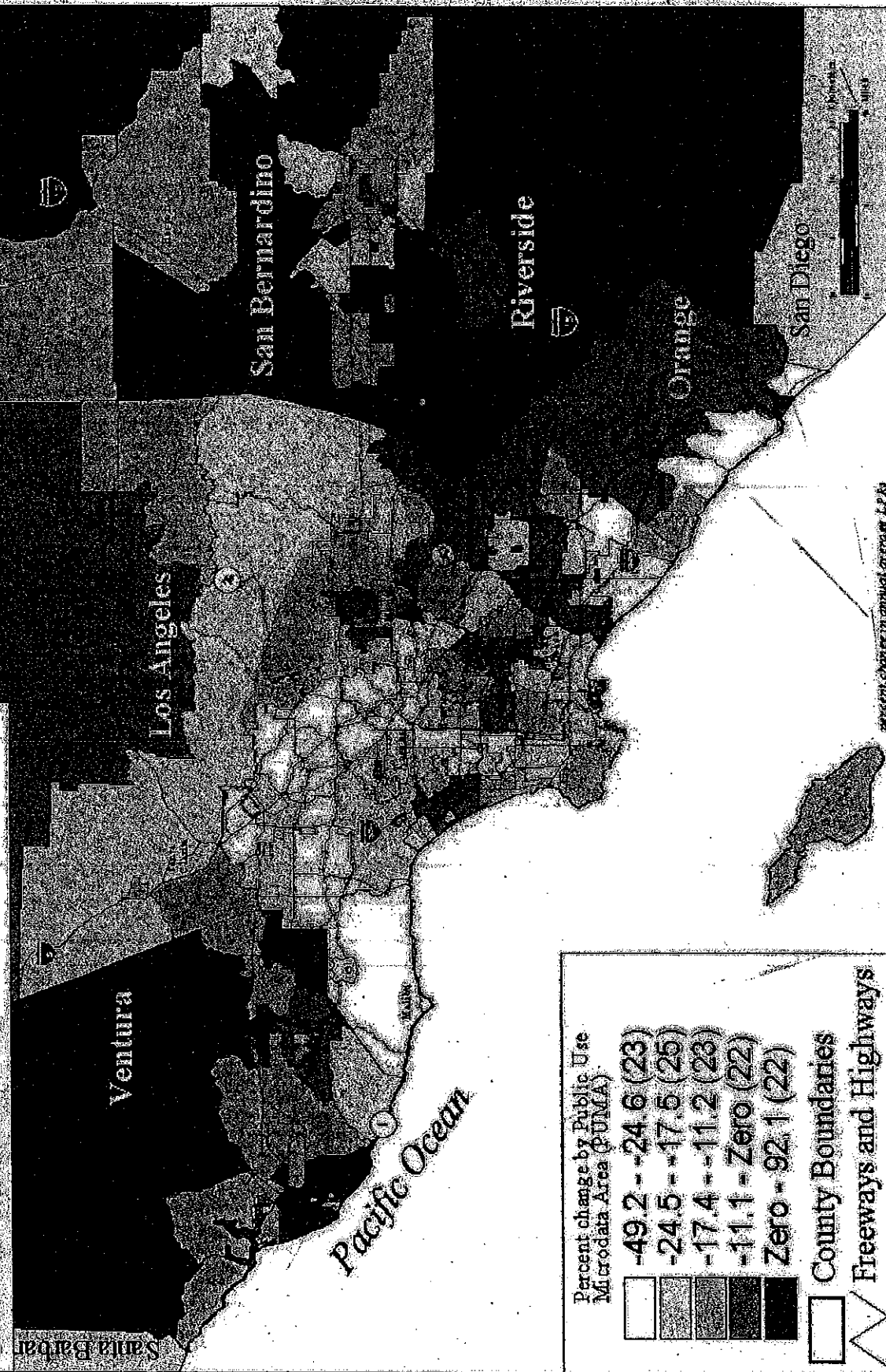


Mean Federal Antipoverty Expenditure per Poor Person, 1988-90

Figure 8: Percent Legal Permanent Resident (LPR), 1990-98, and Average Median Monthly Rent, 1990, by PUMA, Southern California



Percent Change in Annual Average of IPRs Arrivals in Southern California, 1990-93 and 1994-96



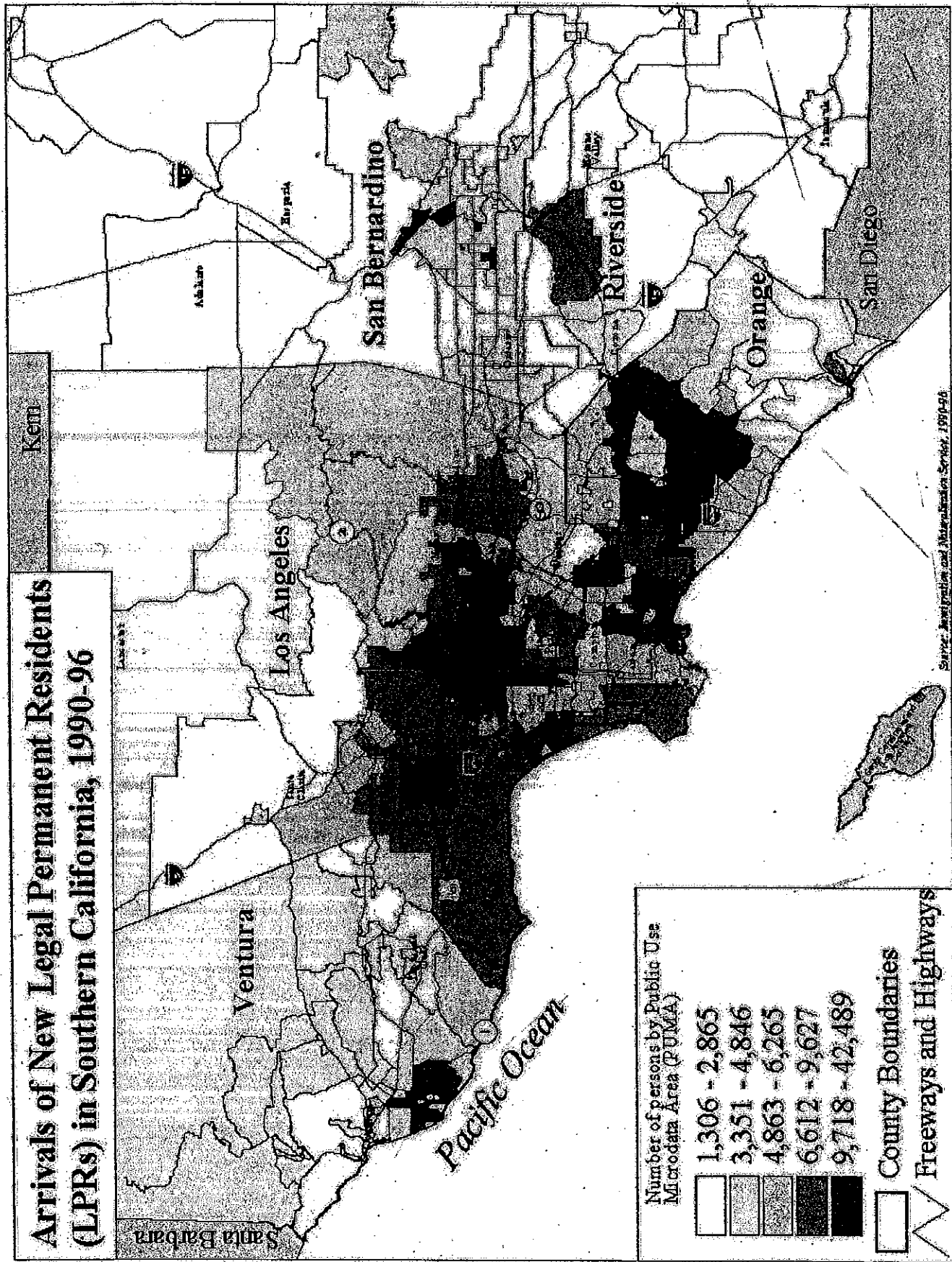
Percent change by Public Use
Microdata Area (PUMA)

- 49.2 - -24.6 (23)
- 24.5 - -17.5 (25)
- 17.4 - -11.2 (23)
- 11.1 - Zero (22)
- Zero - 92.1 (22)

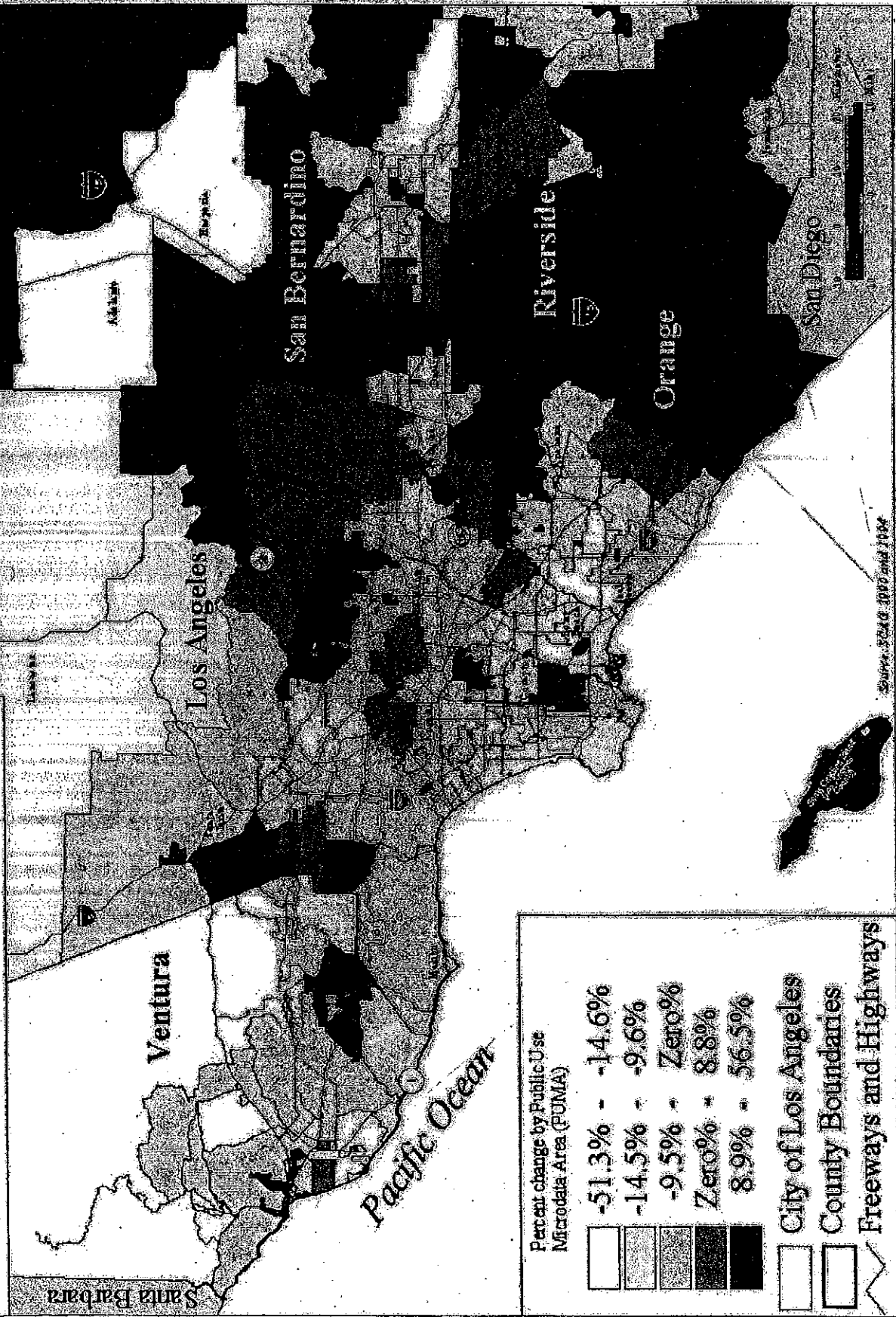
County Boundaries

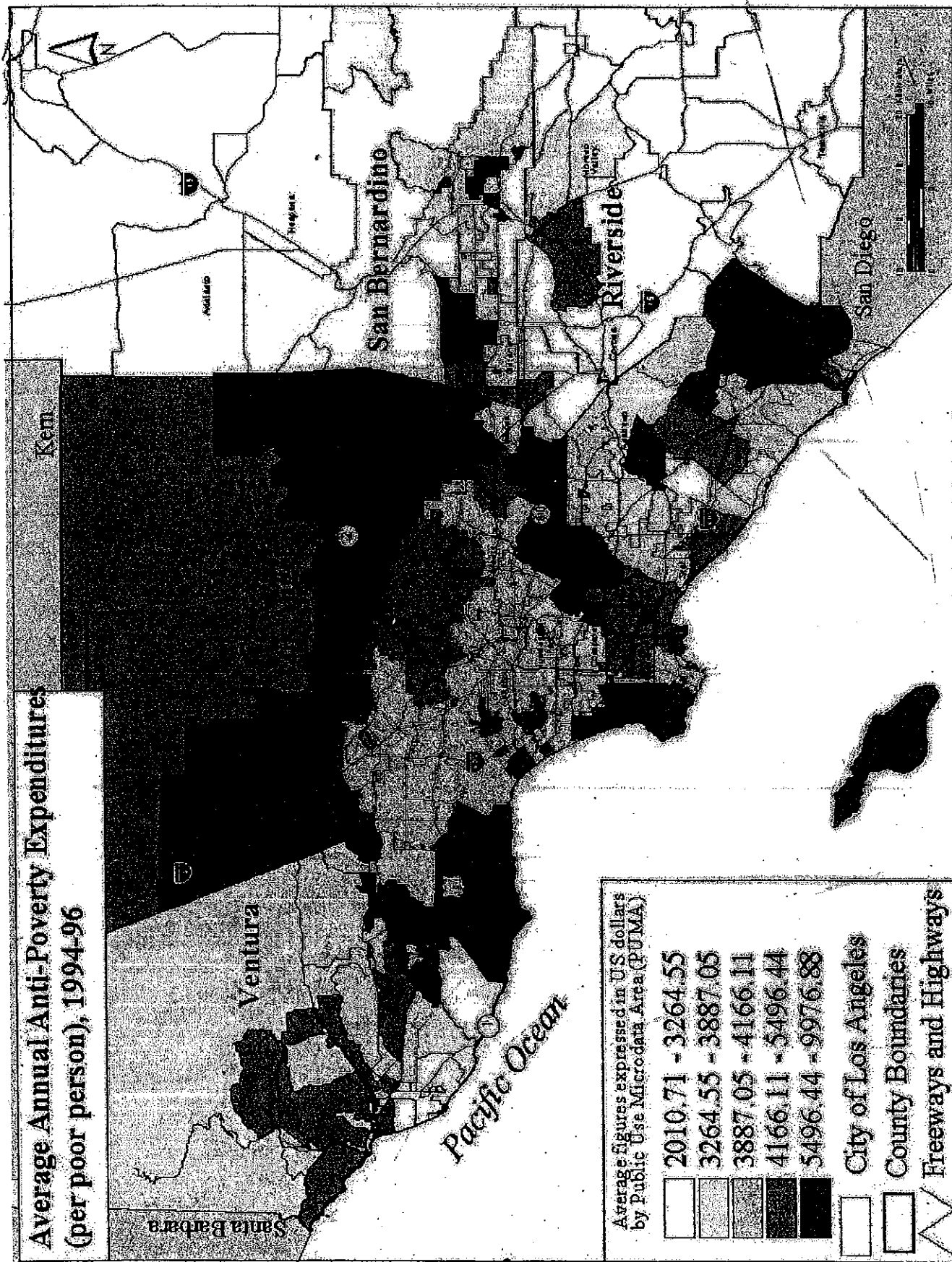
Freeways and Highways

Arrivals of New Legal Permanent Residents (LPRs) in Southern California, 1990-96



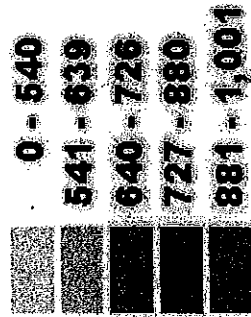
Map 7. Percent Change in Number of Jobs in Southern California Between 1990 and 1994



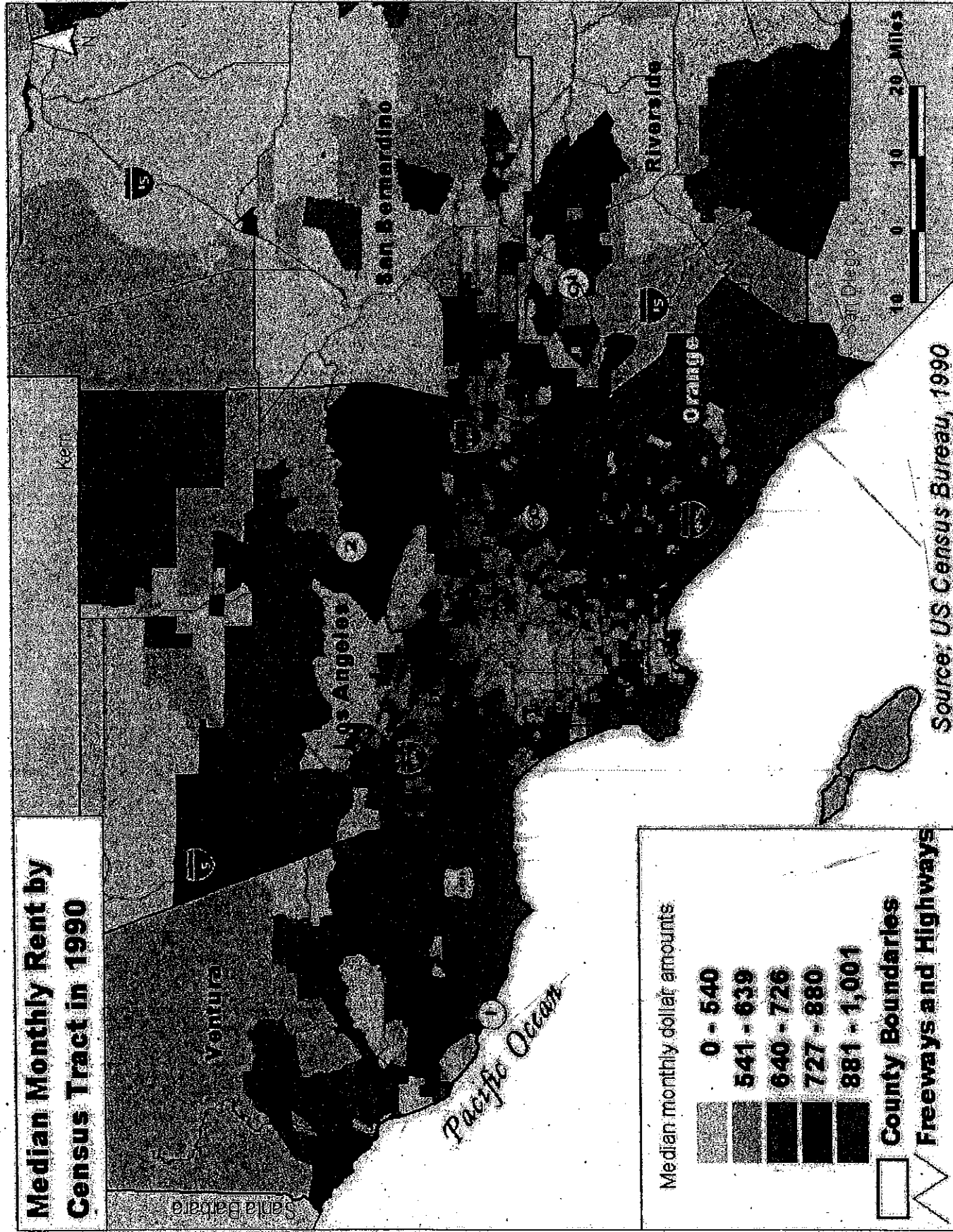


Median Monthly Rent by Census Tract in 1990

Median monthly dollar amounts:



County Boundaries
Freeways and Highways



Source: US Census Bureau, 1990