Census Data for Real Estate Decisions

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The changing demographics, economic attainment, and geography of the American population and workplaces will largely determine the nation's transportation needs in 2000, as they have since the first census was conducted more than 200 years ago. The use of census data in decisions on locating the buildings where we will live, work, shop, study, and play in 2000 and beyond, which will determine our needs for travel and communication, are examined in this paper. Many of the decisions are private decisions, those of builders and developers, companies, households, and institutions. On the other hand, they have an important public counterpart in regulation of the use of land. Such information probably plays an even greater role in decisions on development than the census commuting data do on transportation.

Acquiring, developing, and disposing of real estate is an important ingredient of an expanding economy. Often in the past such decisions were based on "gut feelings," rudimentary rules of thumb, or "back of the envelope" calculations. Increasingly, however, such choices are being made through careful analytical procedures and as part of a broad business strategy. A number of emerging trends that appear to emphasize the value of census data in development decisions are identified in this paper. The perspectives of three important participants in real estate—developer, planner, and lender—are examined, and recent case studies of how census data are currently being used for development choices are described.

Greater Need for Better Real Estate Information: Emerging Trends

A number of recent trends point to an increasing need for reliable information on small-area demography and economics:

- The fallout from commercial real estate overbuilding: When real estate values collapsed in the late 1980s and the 1990s, many investors—both private and institutional—experienced large losses. Hundreds of billions of dollars were lost. The response from the investment community generally is to attach a higher risk to commercial real estate and to demand greater documentation, including more careful market studies, to support proposed investments. Among other items, this will increase the need for good small-area demographic data.

Anthony Downs of the Brookings Institute points out that office space vacancy rates in 30 major markets hit 20 percent in 1985, yet bank lending continued (*1*). It must be admitted that the problem was not the quality of the market studies—if they were even done, no one looked at them. The reaction, however, is likely to increase their importance.

- Public information as the price of access to capital markets: The difficulty of obtaining bank financing in the aftermath of the savings and loan cleanup has caused many developers to go to Wall Street. One of the hottest new trends is the establishment of real estate investment trusts (REITs), publicly traded investments that own real estate. Such public offerings will demand better information on properties and markets.
- Finding hidden assets in corporate real estate: Real estate values are central to development decisions but are among the less well-managed assets of corporate America. A study of publicly traded companies (those listed on one of the major stock exchanges) estimated that in 1991, real estate holdings valued at cost accounted for $522 trillion. Those in the active real estate business (developers, brokers, etc.) had assets of just under $2 trillion, whereas passive investors such as REITs had holdings of $250 billion (*2*). A study of 60 leading companies by LaSalle partners found that it is possible to add significant value through reduced occupancy costs and more efficient use of capital—a significant opportunity in times of corporate downsizing, restructuring, and growing international competition (*3*).
- Growing sophistication and competitiveness among retailers: The rise of the "big box retailers," offering wide selection, low prices, and customer-oriented services, is killing off many of the "mom and pop" stores. These retailers can use computers not only for restocking the shelves but also for analyzing their markets.
- Increased regulation in the use of land: There is growing public involvement in what were previously considered private property rights. These take the form of state, regional, and local efforts to manage land use to achieve public goals. There is even a hint that federal regulations on metropolitan planning may focus greater concerns on development patterns. The only objective reading of such trends comes from the decennial census.

Real Estate Information From the Developer's View

Let's look at the process from the developer's point of view. There are eight steps common to the private real estate development process, shown in Figure 1. It is a creative, iterative process in which ideas are successively refined, discarded, fine-tuned, tested, and finally acted on. Information is crucial in the development process, beginning from data sufficient for "back of the envelope" decisions to extensive market studies in later phases (*4*). In the beginning stages, printed census reports may be adequate. Once significant commitments have been made, extensive computer manipulation of detailed census data may be needed.

A project begins with an idea, often the most difficult stage in real estate development and one that can occupy 20 to 30 percent of the time spent on a project. Ideas are generated in many ways. Developers often come upon a site looking for a use. For one reason or another, the owners of a particular parcel want the parcel to be developed. Alternatively, developers might find a use looking for a site, frequently the case when corporations want to expand. Finally, there may be capital-driven opportunities—an individual or group with money wishes to invest in a real estate project (not as likely these days).

The first screening the developer does is a "back of the envelope pro forma." Developers typically use their concept of the tenant to project the tenant's willingness to pay for a particular type of space with appropriate services in a particular location. The income per square foot is then reduced by operating costs per square foot projected over the project leasable square feet to calculate a net income stream. The present value of this income stream is calculated by applying a capitalization rate. The resulting net value is then compared with estimates of cost, including land plus site development plus costs per square foot of building. If value exceeds cost, the idea lives to the next stage. If not, back to the drawing board. This is

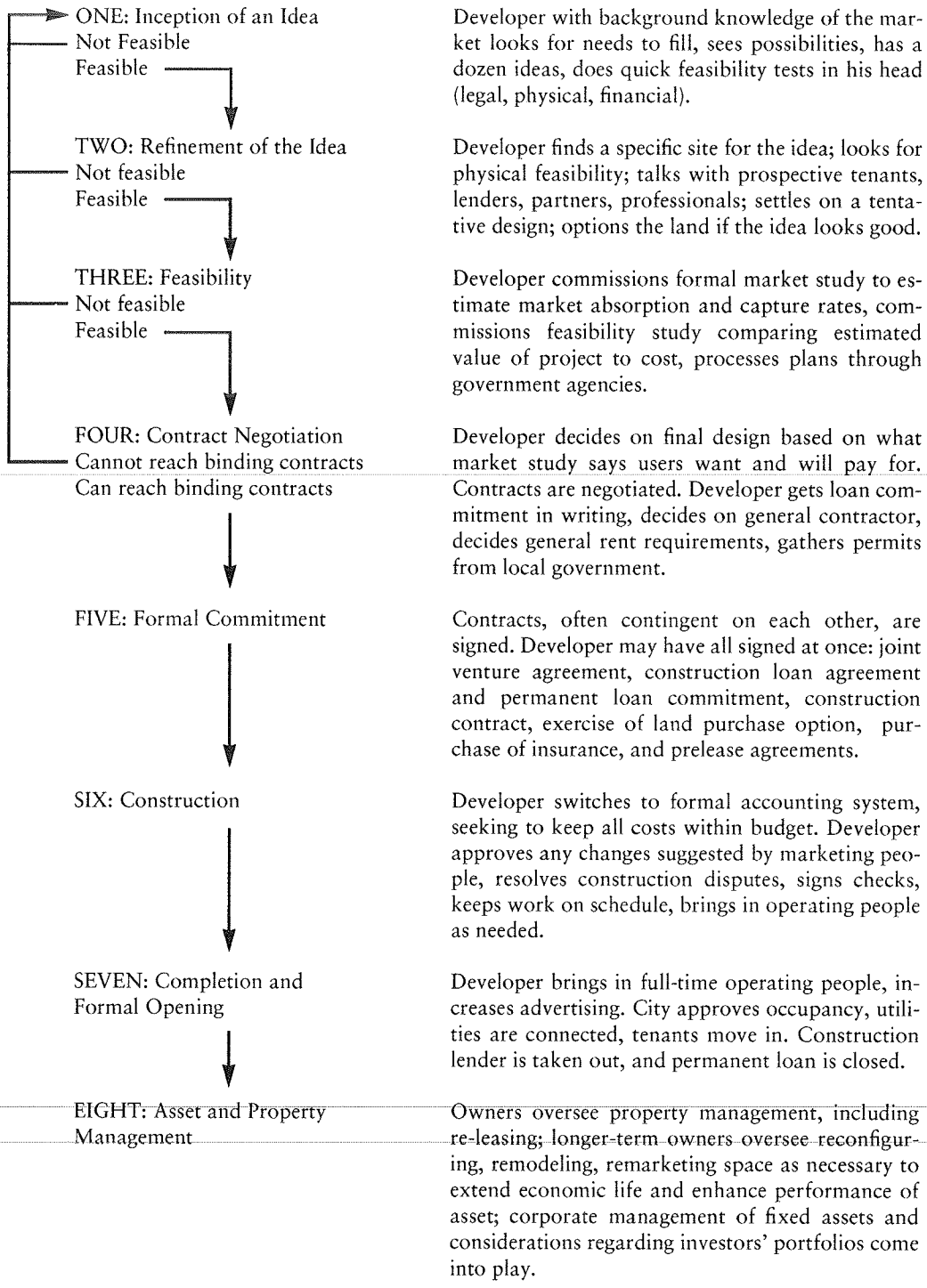

FIGURE 1 Eight-stage model of real estate development (7).

clearly a data-intensive process to the developer, one in which information is as often picked up "on the fly" or even guessed at in the early phases. However, the ready availability of small-area census data is critical.

Real Estate Information From the Planner's View—Guiding Growth

Real estate from the developer's view is typically a profit-oriented, near-term, parcel-based, bottom-up exercise in finding the "highest and best use" for land. In contrast, the comprehensive planner's view is from a public-purpose, long-term, and community level. From this view, real estate is a top-down exercise in determining an appropriate pattern of uses. Such perspectives are not mutually exclusive. Many developers have projects requiring a long-term view, and planners need to recognize market realities. However, developers and planners often find themselves in opposition at the project level. In some cases this may revolve around factual data, including the demographic and economic characteristics available from the census bureau. There appear to be two significantly different levels of information use in planning, depending on whether the data are used as background for planning purposes or as input to growth models.

Comprehensive Planning

As described in the APA book on the planners use of information, decennial data from the census of population and housing fall into the category of information from secondary sources. Some are "tabulated for individual city blocks and for census tracts and are published in census tract and block statistics for the SMSAs and for a few smaller sites that made prior arrangements to pay for special publications" (*5*, p. 56). Since the original book was published soon after the 1980 census, it does not recognize the increasing data sophistication currently available.

Acknowledging the problems of a data source that only appears every 10 years, author Alan Feldt points out that "since there are prolonged periods during which no current information on population size and characteristics are available, other countries have mid-decade census and continuous registration systems" (*5*, p. 58). Apparently the availability of the special tabulations of transportation data was not widely known in the planning community outside of transportation specialists, since there was no mention of traffic zone data or the Census Transportation Planning Package. The lack of sophistication of many planning offices in using information is evident in the storage of many local records, which, although "technically open to the public, in practice . . . are inaccessible because . . . of how they are kept . . . ledger books, 3 × 5 cards, old cartons or footlockers filled with file folders" (*5*, p. 64).

Urban Growth Models

The difference in technical sophistication between planners who use models of urban growth and those who map data with colored pencils is the difference between data kept in geographic information systems and those in shoe boxes. It is for such computerized urban models that the lack of currency in census data is not a severe problem, since these tools take a longer-term perspective. Data on 1980 to 1990 trends, for example, are almost as good as data on 1984 to 1994 trends. Such models are voracious users of census data and in many cases are structured around these data.

One of the latest and most popular of these urban models includes a disaggregated regional allocation model for projecting residential location and an employment allocation model for projecting employment location. These two models are currently in use in 14 metropolitan areas, and 15 more are expected to be on line in 1993 (*6*). Just as retailers are depending on greater use of technical analysis of markets, planners are getting on board as well. Such

information will also help inform private decisions. As an example of how such insights can offer a competitive edge, even without a model, North Carolina developer Will Thurow, unlike many competitors working in the Research Triangle area, viewed the cities making up the Research Triangle area as a converging market area, assuming office growth would spread beyond the Research Triangle Park along transportation corridors. Such insights made it possible to get out in front of an emerging market (*7*).

Real Estate Information From Buyer's and Lender's View

One aspect of real estate decisions not as well understood as development and corporate real estate management is appraisal—the valuation of real estate assets. Appraisers are the underappreciated "bean counters" of real estate. They have been much criticized for their role in the commercial real estate collapse. Downs points out that in such an environment of low liquidity and future uncertainty over commercial property markets, appraisal has become extraordinarily difficult. The key issue, a particularly critical one for banks holding commercial loans, is how to value the assets on banks' books. In part this is a problem of whether the banks are forced to divest into a buyers' market or are allowed to hold on and hope for a cyclical recovery.

Even in more normal times appraisals are critical, if less visible, in the orderly transfer of real estate. This is important to families shopping for a home, businesses looking for a new location, and landowners looking for a developer. An appraiser must be aware of "the factors that contribute to urban growth patterns and . . . analyze the neighborhood or district where the subject property is located and . . . determine how the area affects the quantity, quality, and duration of the property's future income stream or amenities that create value." In analyzing a local market, a knowledge of trends in the formation of households and household characteristics is crucial. The age, size, income, and other characteristics of households must be considered to determine the demand for housing. The demand for commercial and industrial real estate is created by a population's demand for the goods and services to be produced and distributed at these sites. It is recommended that appraisers look to the census to provide detailed information on population and housing characteristics (larger statistical areas) as well as census tracts and blocks in metropolitan areas. It is further recommended that within neighborhood and district boundaries, if possible, the appraiser obtain accurate data on ages, occupations, incomes, and education levels of neighborhood residents. Appraisers also recognize that neighborhoods have a life cycle beginning with growth, then stability, decline, and eventually revitalization (*8*). Myers points out that the release of 1990 census data allows analysts to measures trends of the 1980s and recalibrate models for market analysis, emphasizing that census data are "ideal for use in appraisals and market analysis, where conclusions must be defensible" (*9*).

Census Data and Private Data for Real Estate Decisions

Just as demographic data are one of many types of information used in real estate decisions, census data are only one of many such sources. It is the Rodney Dangerfield of data sources—getting no respect when they are often embedded in other references. There is a story in Washington about members of Congress who criticize the costs of the decennial census and ask, "Why do we need the census? When I need information, my staff simply looks it up in the statistical abstract." Of course, the data they are referring to were reprinted from the census. Whereas there are many valuable private sources of demographic data, it is important to recognize the role of the census data as the original, unimpeachable, affordable source. It should not be a matter of choosing between census and private data sources, but rather understanding the advantages of each.

- The original source: Just as in the story of the members of Congress, there are many sources of demographic information that come from decennial census sources, either directly

or as derivatives. Many local and state data sources generated sizable income from selling census data, and much research that used the information attributed it to the reseller rather than the original source. Other data sources key back to small-area census data. One private data source investigated for its use in transportation planning in the late 1970s used proprietary data to identify household structure type and automobile ownership but census tract data to develop an income model (*10*).

- The unimpeachable source: For both public and private sources, decennial census data carry the imprimatur of the U.S. Bureau of the Census. Despite some of the battles over the undercounted population, there is no more credible source of small-area demography. Census data are accepted by all levels of government for a variety of programs. Concerned about how much of a difference there can be in small-area estimates and projections offered by several of the nation's private data companies, the International Council of Shopping Centers decided to find out by comparing them with census tract data. Although generally all were close, the council calculated that a business considering targeting upper-income households in Baltimore County might go ahead if the high numbers were used but abandon the deal if the low set of estimates was chosen (*11*).
- The affordable source: As indicated, many private sources of demographic information are available, at a price. Paying premium prices for information may be possible for owners of high-cost projects with large profit margins. However, many others—local planning offices, nonprofit development corporations, interested citizens, and of course graduate students—are involved in real estate decisions, for whom such costs are prohibitive. Mark Kissel, a real estate consultant based in Washington, D.C., tells a story of a small project that did not justify a large expense in data but where tract maps were not publicly available. The day was saved when an employee found the information in the Library of Congress. It is for such individuals, with modest capabilities or finances, that Myers recommends keeping it simple—going first to printed census data, with computerized sources only as a last resort (*12*).

There are other data sources, many of them more current and richer in data, such as those described later. However, the census data have provided common ground for real estate decisions that generally have a mix of public and private interests. It is important that decisions on content and sampling recognize this history and preserve the essentials of a demographic safety net, which the decennial census of population and housing has traditionally provided.

Information for Real Estate Decisions—Case Studies

The following examples illustrate the range of census data and census-derived data in real estate decisions. They demonstrate a range of uses of census data.

- Multifamily: Memphis, Tennessee—This is an upscale, multifamily project that is part of a planned unit development in East Memphis. A market study was conducted for the first phase, 384 garden apartment units in 16 buildings, most located on a golf course. The characteristics of the neighborhood were identified as "entirely different from those of the larger MSA." Census data used in the study supported the statement that the area was "one of the most affluent and desirable in the area." Whereas the proprietary data base offered updated distributions of age and income, other detailed characteristics of occupation, educational attainment, households with seniors and children, housing tenure, and rents were based on the 1980 census, to support current data on rent levels collected by field surveys (Coldwell Banker, unpublished data, 1987).
- Retail: Bethesda/Chevy Chase, Maryland—This mixed use project is located at the hub of one the most desirable markets in the Washington, D.C., area. It has the highest concentration of mature, urbane, affluent households in the region. The project includes hotel, office space, and retail space. The market study completed in 1986 was particularly complex because retail sales were estimated to come from two sources: residents of the primary trade area and office workers and shoppers from outside the primary trade area. In addition, there was considerable

competition from current and planned retailers. Part of the demographic and economic analysis was drawn from the 1980 census tract data for parts of Washington, D.C., and Montgomery County, Maryland, as shown in Tables 1 and 2. Whereas some of the averages were updated to a current and short-range forecast period, the complete distributions from the decennial census were useful to contrast the market area with a competitive market (Coldwell Banker, unpublished data, 1986).

- Economic development: Long Beach—The composite of individual housing projects and retail, office, and industrial developments represents overall growth and economic development in a community. This public interest in economic development is illustrated in the third annual economic forecast of Long Beach, California. Not the arcane stuff that only an economist could love, there is an outlook section as well as sections on real-world issues, such as strategies for economic growth, reuse of an abandoned military base, and a shoreline development strategy (precipitated by the Walt Disney Company's decision to build a new theme park in Anaheim rather than Long Beach). Extensive use of 1980 and 1990 census data helped in understanding some of Long Beach's strengths and weaknesses compared with those of California and the rest of the country. Census data showed the changing composition of jobs and the work force, especially critical issues considering the sharp cutbacks at McDonnell Douglas. One insight available only because of the journey-to-work data was the finding that Long Beach residents are "a very different group of people than the Long Beach employees." Such insights derived from census data help public officials understand their communities and adjust to the economic realities of the 1990s (*13*).

These examples show a small cross section of how decennial census data have been used in real estate decisions, from both the private and public perspective. Some of these applications are not well known to those outside the Bureau of the Census, including those responsible for funding decisions. They clearly demonstrate the pervasiveness of census data in decisions on where America will grow.

SUMMARY

This paper has examined the use of decennial census data in private-sector decisions on real estate development as well as complementary public-sector actions involved. Such decisions affect a very large part of the American economy, going well beyond those actively involved in real estate to embrace real estate as an important tool of production. Seen in this context, it is an immense category, and there are a number of trends that indicate increased professionalism in real estate decisions, including those made by organizations that do not consider themselves to be in the real estate business.

Decisions on real estate were examined from the perspective of three principal participants—developers, planners, and lenders. Each requires access to information. In some cases the information is shared, and in some cases it is closely guarded. Census data play an important and pervasive role in all.

Supplements to census data are available through private sources, generally to those who can afford the higher prices. Some perspectives on the relationship of census data compared with the alternatives have been offered. The census is seen as the original, authoritative, and affordable source. This is not intended as a criticism of private data sources. It is a recognition of the standing of census information as an irreplaceable data base, an important message to those with control over the decennial census planning. Selected examples illustrate the range of applications of small-area census data.

This paper has demonstrated the immense role that real estate decisions play in growth and development in America and the pervasiveness of census information as a technical foundation of those choices. A number of trends suggest that this will be even more important in the future. The value of census data in such applications may have been underappreciated in the past, in part because the census is not given proper attribution or credit. However, as we look to planning for the 2000 census, it is important to keep these uses in mind, since decisions on real estate appear to be hooked on the census.

TABLE 1 Comparative Trade Area Socioeconomic Characteristics—Income Distribution, Property Values, and Age Distribution (National Decision Systems; Coldwell Banker Real Estate Consultation Services)

CHARACTERISTIC	BETHESDA-CHEVY CHASE PRIMARY TRADE AREA		WASHINGTON SMSA		TYSON'S CORNER, 5-MI RADIUS		FAIR OAKS, 5-MI RADIUS		INDICES OF RELATIVE DIFFERENCES, WASHINGTON SMSA = 100		
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	CHEVY CHASE PAVILION	TYSON'S CORNER	FAIR OAKS
Household Income Distribution—1979											
All households	52,296	100.0	1,115,400	100.0	57,922	100.0	35,259	100.0	100	100	100
$50,000 and over	14,622	28.0	125,817	11.3	12,129	20.9	6,266	17.8	248	186	158
$35,000 to $49,999	8,577	16.4	183,483	16.5	12,824	22.1	9,471	26.9	100	135	163
$25,000 to $34,999	7,719	14.8	212,930	19.1	11,521	19.9	7,873	22.3	77	104	117
$15,000 to $24,999	9,581	18.3	271,154	24.3	11,996	20.7	6,396	18.1	75	85	75
$7,500 to $14,999	7,185	13.7	192,853	17.3	6,371	11.0	3,395	9.6	79	64	56
Under $7,500	4,607	8.8	129,163	11.6	3,081	5.3	1,858	5.3	76	46	46
1980 Owner-Occupied Property Values											
All owner-occupied housing units	23,276	100.0	592,339	100.0	28,596	100.0	23,630	100.0	100	100	100
Under $100,000	3,368	14.5	413,690	69.8	14,124	49.4	13,318	56.4	21	71	81
$100,000 to $149,999	9,024	38.8	121,074	20.4	9,322	32.6	7,926	33.5	190	159	164
$150,000 to $199,999	5,563	23.9	35,244	6.0	3,005	10.5	1,836	7.8	402	177	131
$200,000 and over	5,321	22.9	22,331	3.8	2,145	7.5	551	2.3	606	199	62
Age Distribution											
14 and under	15,948	13.4	653,506	21.4	33,859	20.8	27,272	24.9	63	97	116
15 to 19	7,939	6.7	279,462	9.1	14,839	9.1	11,354	10.4	73	100	113
20 to 24	8,925	7.5	292,930	9.6	13,277	8.2	8,151	7.4	78	85	78
25 to 34	18,587	15.6	594,125	19.4	28,001	17.2	18,474	16.8	81	89	87
35 to 44	15,509	13.1	426,386	13.9	25,170	15.5	20,021	18.3	94	111	131
45 to 54	13,893	11.7	320,784	10.5	20,924	12.9	13,142	12.0	112	123	114
55 to 59	8,283	7.0	149,679	4.9	9,697	6.0	4,717	4.3	143	122	88
60 to 64	7,344	6.2	113,866	3.7	6,655	4.1	2,721	2.5	166	110	67
65 to 74	12,787	10.8	146,312	4.8	6,899	4.2	2,435	2.2	225	89	46
75 and over	9,864	8.3	84,481	2.8	3,384	2.1	1,338	1.2	301	75	44
Average		41.93		32.81		33.59		30.54	128	102	93

TABLE 2 Comparative Trade Area Socioeconomic Characteristics—Average Household Income Trends (National Decision Systems; Coldwell Banker Real Estate Consultation Services)

CHARACTERISTIC	BETHESDA-CHEVY CHASE PRIMARY TRADE AREA ($)	WASHINGTON SMSA ($)	TYSON'S CORNER, 5-MI RADIUS ($)	FAIR OAKS, 5-MI RADIUS ($)	INDICES OF RELATIVE DIFFERENCES, WASHINGTON SMSA = 100		
					CHEVY CHASE PAVILION	TYSON'S CORNER	FAIR OAKS
1979 actual	40,737	27,876	36,127	34,940	146	130	125
1985 estimated	57,583	40,658	48,557	52,453	142	119	129
1990 projected	76,833	55,696	62,125	73,568	138	112	132

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