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Rosen, Kenneth T.

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THE APARTMENT MARKET: A CHANGING DEMOGRAPHIC AND ECONOMIC ENVIRONMENT

By

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KENNETH T. ROSEN

WALTER A. HAAS SCHOOL OF BUSINESS

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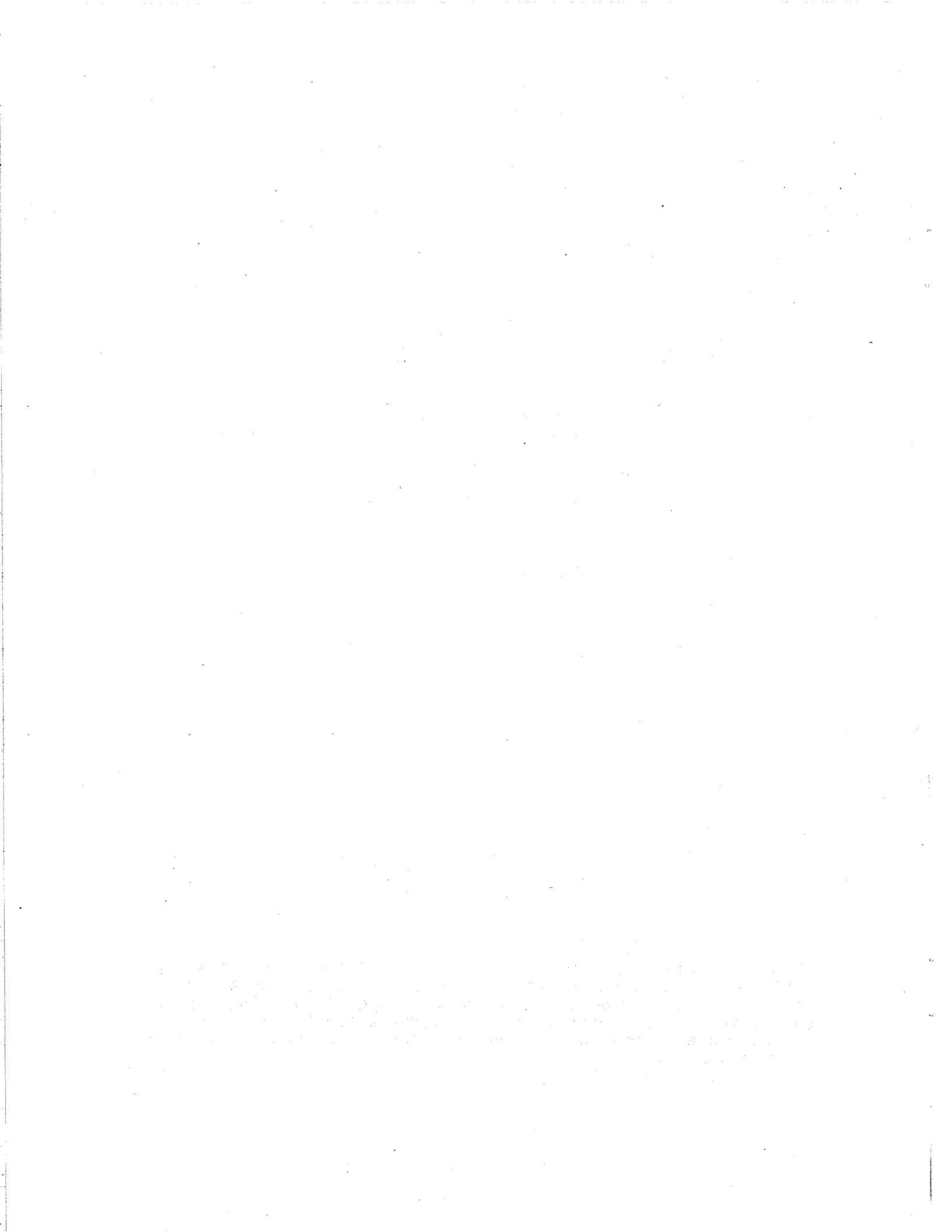
**The Apartment Market:
A Changing Demographic and Economic Environment**

by
Kenneth T. Rosen
University of California, Berkeley

March 1988

Working Paper #88-143

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Abstract

The basic demographic demand for apartments shows wide variance across regions and even within metropolitan areas. Energy-related areas and certain Sunbelt areas have excess apartment supply, posting vacancy rates in the 10%-20% range. The East, Midwest and California regions generally still show average vacancy rates of less than 5%. Strong regional economies, large migration to California and Florida and a sharp slowdown in new apartment construction should keep the vacancy rates in check in these areas.

Long-term demographic demand for rental housing nationally is somewhat negative. The population aged 18-24, the prime occupants of rental housing, will decline by nearly 10 million between now and the year 2000. Offsetting this will be the rising demand by people over age 65 for rental housing and the continued increase in the ratio of households to population. Short-run demand for new rental units, however, appears healthier. Absorption of new rental units is improving and real median rents are rising.

Rents on apartment units have climbed in real terms over the past year, though the rate of increase has slowed relative to the past several years. Nationally, rents rose by 4.1% in nominal and by 0.5% in real terms in 1987. Aggregate national figures disguise wide regional disparity, however, reflecting local economic conditions. For example, rents rose by 5%-7% in the Northeast and California and declined by 1%-3% in Dallas and Houston.

The Tax Reform Act of 1986 has reduced the after-tax internal rate of return (IRR) on a typical new apartment project by more than 50% compared with the return before tax reform. To restore returns to their levels before tax reform, rents would have to rise by 19% or purchase prices would have to fall by 16%. Tax-motivated investors in apartment buildings are withdrawing from the market or are restructuring their investments. Thus, the tax-oriented syndicator is much less in evidence today.

Institutional investors such as life insurance companies and pension funds are now able to compete with tax-motivated investors and so are beginning to accelerate their investment in apartment buildings. Such investors are demanding higher cash returns, often accompanied by substantially lower leverage than has been typical of the apartment market.

Loan demand for apartments remained strong in 1987, with mortgages originated at a \$57-billion annual rate. But the sources of mortgage credit have shifted dramatically. In the past year, savings and loans, banks and, increasingly, insurance companies have been the major source of long-term mortgage credit for the apartment market. This represents a dramatic shift from the use of tax-exempt bond financing, which accounted for \$12 billion of financing in 1985 and just \$2 billion in 1986.



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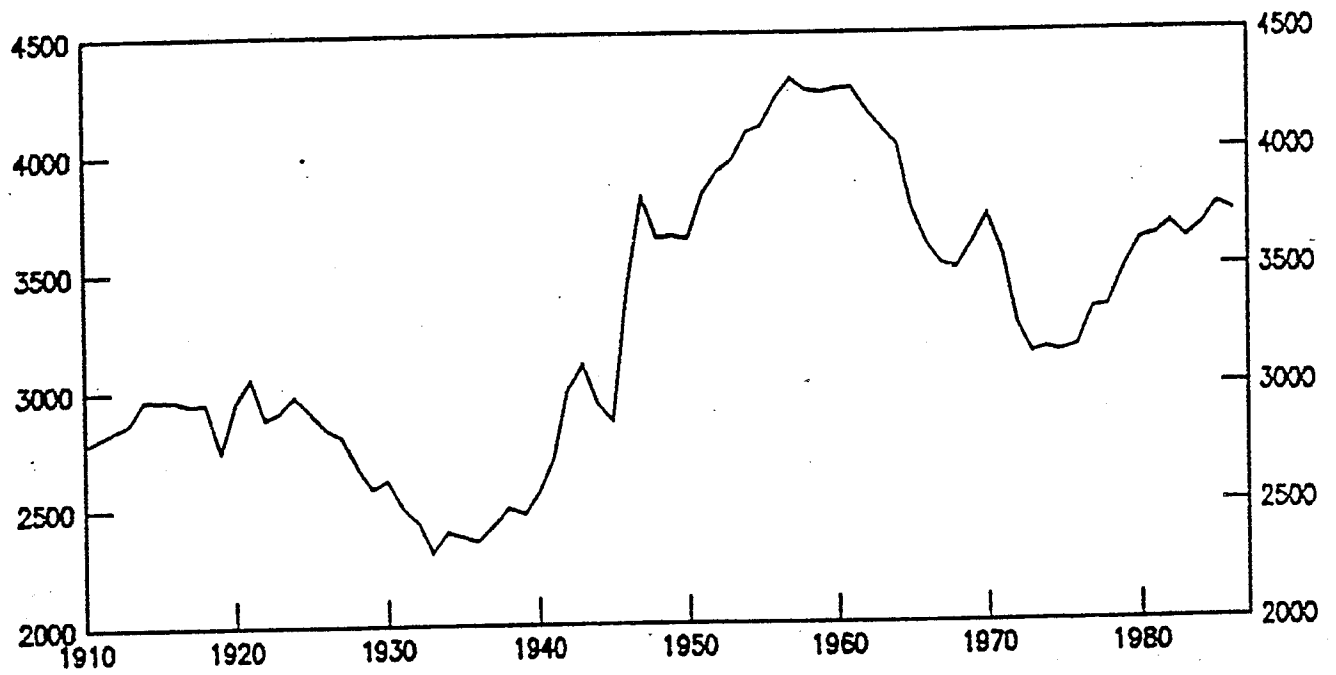
Demand for Rental Housing

Demographic Demand: Population and Age Distribution of the Population

The size, age distribution and growth rate by age group of the population are critical factors in determining rental housing demand. These factors are also among the most predictable. For a ten-year projection, only a segment of the total population is actually relevant: Specifically, that part of the population that will enter the rental housing market as a separate household unit in the next decade.

The major influence on the age distribution of the population is the post-World War II baby boom, which occurred from 1947 to 1961. As Figure 1 shows, the second wave of the baby boom peaked in 1957 and remained strong until 1961. As a result, the number of people turning 25, the prime rental housing group, peaked between 1982-86. As Figure 2 shows, another key rental population age group, people under 25, peaked in 1980 and will show continual decline throughout the next decade. Population in the 18-24 age group will decline by nearly ten million between now and the year 2000. The over-65 population, which increasingly demands rental housing, will continue to rise during the mid-1980s and 1990s and will increase by six million by the year 2000. Even with this rise in elderly renters, it is clear that

Figure 1. Births, 1910 to Present



Source: National Center for Health Statistics.

Figure 2. U.S. Population by Age, 1970-2000 (Population in Thousands)

Age	Population Change										Pct. Chg.
	1970	1980	1985	1990P	1995P	2000P	Number	Number	Number	Number	
18-24	24,712	30,350	28,741	25,796	23,704	24,603	4,029	4,029	4,138	-4,138	-14%
25-34	25,323	37,626	42,227	43,986	40,946	36,798	16,904	16,904	-5,429	-5,429	-13%
35-44	23,150	25,868	31,839	37,652	41,780	43,517	8,689	8,689	11,678	11,678	37%
45-64	41,999	44,515	44,931	46,743	52,647	61,266	2,932	2,932	16,335	16,335	36%
65+	20,107	25,704	28,530	31,609	33,794	34,825	8,423	8,423	6,295	6,295	22%
18 and Over	135,291	164,062	176,268	185,787	192,871	201,009	40,977	40,977	24,741	24,741	14%
All Ages	205,053	227,757	239,283	250,304	260,011	268,587	34,230	34,230	29,304	29,304	12%

P. U.S. Bureau of the Census projection; the Census projections from Report P-25 have been proportionately adjusted to align actual 1985 figures with projections.

Source: U.S. Bureau of the Census, Current Population Reports, Series P-25, Population Estimates and Projections, Number 952 (May 1984) and Number 985 (April 1986).

for the first time this century there will be a dramatic decline in the age groups that demand apartment units. However, mitigating this negative impact are three key factors: the continued increase in household formation relative to population, the strong regional migration in states such as California and Florida and the strong regional economic growth in Massachusetts and New York, although these two states continue to experience out-migration.

Demographic Demand: Household Formation

Rental housing demand does not depend on the age distribution of the population alone, but also on the way people group themselves into household units. A household is defined as a group of people occupying a housing or "shelter-consuming" unit. There are two major categories of households, distinguished by the relationship between household members and the household head. (By definition, a household has only one head.) A primary family household exists when all occupants are related to the household head by blood, marriage or adoption. A primary individual household, on the other hand, refers either to a person living alone or to one living with nonrelatives.

In the past decade, many people who previously would have been family households formed separate households. In 1970, some four fifths of the 63.4 million households in the United States were classified as families. By 1980, another 17.4 million households had been formed, yet almost three fourths of these were nonfamily households. The number of individual households almost doubled in this period. While this trend toward

nontraditional households moderated from 1980 to 1987, an additional four million individual households were formed during this period versus five million family households. Thus, by 1987 only 58% of households were husband-and-wife families, while 42% were nontraditional household units.

Figure 3 indicates that this trend toward nonfamily households is especially concentrated among young households. Household headship rates (the ratio of the number of household heads in an age group to the size of that group) for the nonfamily households have been rising for all age groups over the past two decades. Delaying marriage, living with a person of the opposite sex, the uncoupling of existing households by divorce, and the preference and ability of surviving elderly spouses to retain their own living quarters have all led to the increase in primary individual households. These dramatic socioeconomic changes affecting all age groups have led to a substantial increase in the demand for rental housing units, because individual households are more than twice as likely as family households to occupy rental housing units.

In the past 25 years, the proportion of the under-35 age group heading separate households has tripled. In terms of actual numbers of households, this effect is even more dramatic because these are the baby boomers. The increase in the proportion of people over age 35 in primary individual households is somewhat less dramatic, but still highly significant.

Figure 3. Age-Specific Headship Rates, 1960-87

	1960	1970	1980	1987
Family Households				
15-24	9.4%	9.7%	9.0%	7.6%
25-34	40.2	42.0	38.3	34.7
35-64	45.2	46.4	46.4	45.3
65 & Over	37.2	35.3	35.2	34.3
Nonfamily Households				
15-24	1.2%	2.4%	6.5%	5.9%
25-34	2.5	4.4	11.6	12.4
35-64	6.2	7.3	9.5	10.8
65 & Over	19.6	26.0	29.5	29.4
Total				
15-24	10.6%	12.1%	15.5%	13.5%
25-34	42.7	46.7	49.9	47.1
35-64	51.4	53.7	55.9	56.3
65 & Over	56.8	61.3	64.7	63.7

Source: U.S. Bureau of the Census.

In contrast, while the individual headship rate has soared, the family headship rate has fallen in the same period. These two trends have caused a dramatic increase in the "household yield" or the number of households forming from the population as a whole.

Smaller family household sizes and a drop in the proportion (not the number) of households classified as families have accompanied these trends. For example, individuals who move out of their parents' homes increase the individual household headship rate and demand for rental housing without decreasing the family headship rate. A divorce in which children are involved has the same effect, because the spouse with custody of the children has remained a family household, while the other spouse has become a primary individual household.

Traditional husband-and-wife family units have grown more slowly than any other type of household, showing only a 9.8% gain from 1970 to 1980 and a 4.9% increase from 1980 to 1987. On the other hand, nonfamily households showed more than a 17% gain during the 1980-87 time period, divorced female households expanded by 36%, single-person households escalated by 15.5%, and persons of opposite sex sharing the same living quarters rose by an astounding 47%. In terms of absolute growth, nonfamily and single parent-headed households accounted for 13 million of the 17.4 million households formed in the 1970-80 period. This massive shift toward nontraditional household types has slowed to some extent in the mid-1980s. However, even with this slowing, nontraditional households accounted for nearly half of the 8.7 million households formed from 1980 to 1987 and should increase

by nearly 700,000 per year during the late 1980s and early 1990s.

Translating this basic demographic information into demand for rental housing requires a matrix that segments tenure choice and the household age and type distribution (see Figure 4). Nonfamily households have a much higher renter occupancy rate -- especially in the under-35 age category. Renters comprise 91% of nonfamilies under 25 and 76% of nonfamilies between 25-34. More than half of nonfamily households occupy rental units. Young family households also are likely to occupy rental units, with 78% of those under 25 occupying rental units and 47% of those in the 25-34 age group renting, as well. Both family and nonfamily households follow a life-cycle process so that as the household ages and accumulates wealth they are more likely to own their own home.

As a result, the continued strong growth of young family households and nontraditional households should provide good basic demand for rental units in the late 1980s. However, by the early 1990s, the aging of the population will reduce the proportion of renters by a substantial amount. We estimate that by the year 2000 only 30% of households will be renters versus 36% today.

Regional Differences in Population and Household Growth

Although the aggregate population statistics portray a somewhat negative picture for the rental apartment market, regional population and household growth can offset and overwhelm the

Figure 4. Owners versus Renters by Household Type, 1987

	Owner Occupied	Renter Occupied
Family Households (Age of Head)		
Under 25	21.2%	78.8%
25-34	52.7	47.3
35-44	73.1	26.9
45-54	81.5	18.5
55-64	87.6	12.4
65 & Over	86.8	13.2
All Family Households	71.8%	28.2%
Nonfamily Households (Age of Head)		
Under 25	9.5%	90.5%
25-34	23.6	76.4
35-44	36.9	63.1
45-54	46.9	53.1
55-64	59.6	40.4
65 & Over	61.5	38.5
All Nonfamily Households	43.9%	56.1%

Sources: U.S. Bureau of the Census, Current Population Reports, Series, P-20, Population Characteristics, No. 417; Households and Families, Marital Status and Living Arrangements, March 1987; and unpublished Census Bureau data.

impact of the aging of the population. Figure 5 shows the household and population growth for 1980-86 for selected states. Should fast population growth continue in California, Florida, Arizona, and Georgia, the negative effects of the aging baby boom will be more than offset by population and household growth. Even in slow population growth states such as New York, Massachusetts, New Jersey, and Illinois, high rates of household formation could partially offset the movement of the baby boomers to home ownership.

Housing Affordability and the Tenure Choice Decision

In addition to basic demographic factors, the demand for rental housing is a function of the relative cost of renting and owning a housing unit. As Figure 6 shows, the proportion of renters has fallen dramatically since the end of World War II. Today, slightly more than 36% of households are renters, compared with 56% in 1940. Since 1970, the aggregate statistics show that the move towards home ownership appears to have moderated. In fact, in the past five years, because of the sharp rise in relative house prices and higher mortgage interest rates, the cost of owning a home has risen sharply relative to the cost of renting, reducing the aggregate home ownership from its peak level of 65.6% achieved in 1980. Conversely, this has increased the proportion of all households who are renters to 36.1% in 1987 (see Figure 6).

Figure 5. Population and Household Growth For Selected States, 1980-86

	Pct. Change Households	Pct. Change Population
United States	10.5%	6.4%
Massachusetts	6.9%	1.7%
New York	5.2	1.2
New Jersey	8.9	3.5
Illinois	4.7	1.1
Virginia	13.9	8.2
Georgia	17.5	11.7
Florida	23.8	19.8
Texas	20.0	17.3
Colorado	16.8	13.1
California	14.0	14.0
Arizona	26.3	22.1

Source: U.S. Bureau of the Census.

Figure 6. Occupied Housing Units, Percentage of Renters, 1890-1987

1890	52.2%
1900	53.3
1910	54.1
1920	54.4
1930	52.2
1940	56.4
1950	45.0
1960	38.1
1970	37.1%
1973	35.6
1974	35.4
1975	35.4
1976	35.3
1977	35.2
1978	34.8
1979	34.6
1980	34.4%
1981	34.7
1982	35.1
1983	35.3
1984	35.4
1985	36.1
1986	36.2
1987	36.1

Source: U.S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1970; Annual Housing Survey, 1973-83; Housing Vacancies, 1984-87.

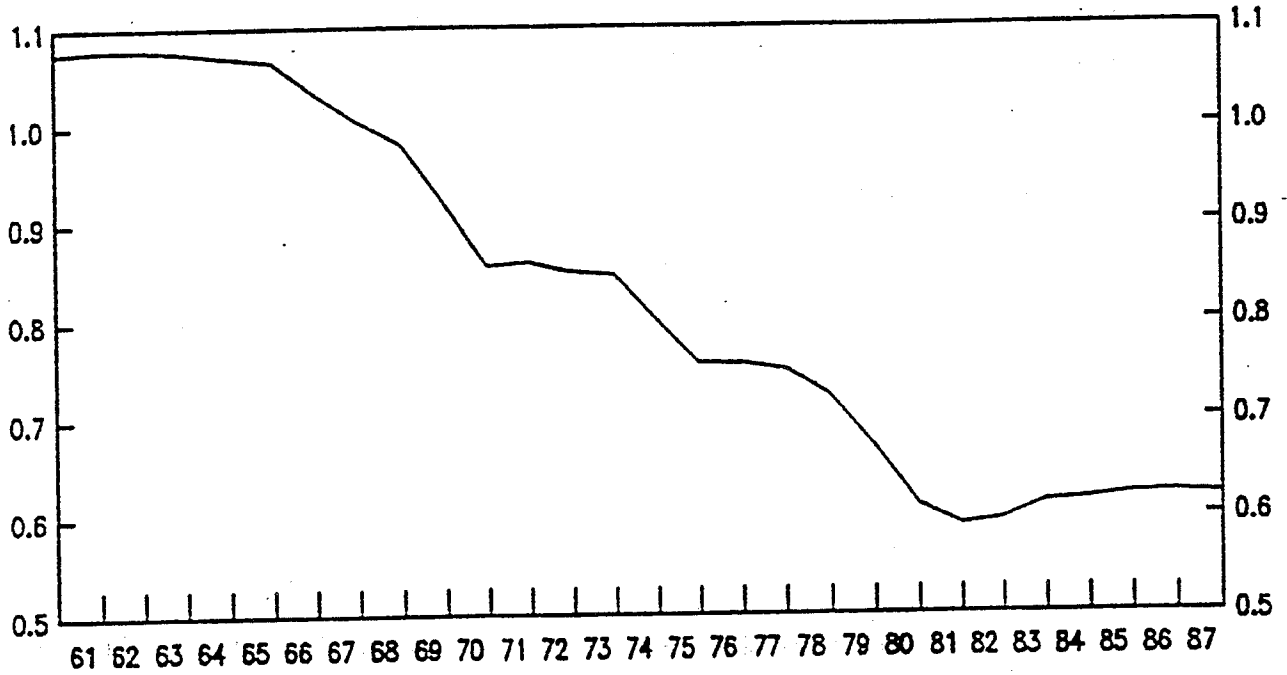
It is quite clear that in the late 1970s and the 1980s households began to respond to the affordability crisis for owning by remaining renters (see Figure 7). Even though home ownership costs as a percentage of income have fallen in the past several years because of lower mortgage interest rates, they have still risen dramatically compared with the 1970s (see Figure 8). To buy the median-priced home today costs 28% of the median household's income in 1987 (down from 42% in 1981 and up from 22% in 1970). This rise in costs effectively eliminates large numbers of first-time buyers from the home ownership market.

Regional Affordability and Tenure Choice

Although the affordability of home ownership has, on a national basis, improved since 1982, it has substantially worsened in the New York and Boston metropolitan areas because of a surge in housing prices. While rents have also risen, the cost of owning relative to renting has escalated even beyond the levels previously seen only in California (see Figure 9).

Clearly, those regions with an exacerbated home ownership affordability problem provide better prospects for continued strong rental housing demand than regions where home ownership is more affordable.

Figure 7. Housing Cost Ratio, 1960-87



Sources: U.S. Bureau of the Census and U.S. Bureau of Labor Statistics.

Figure 8. Comparative Cost of Renting and Owning, 1970-87

	Home Ownership as a Percentage of Income	Gross Rent as a Percentage of Income
1970	22.4%	20%
1971	22.6	21
1972	22.8	21
1973	23.3	22
1974	25.8	23
1975	28.7	23
1976	27.4%	24%
1977	29.3	25
1978	31.2	25
1979	35.4	26
1980	37.2	27
1981	42.6	27
1982	41.8%	28%
1983	35.2	29
1984	33.1	29E
1985	30.9	30E
1986	28.8	31E
1987	27.9	32E

E Estimate.

Source: Derived from Annual Housing Survey and data on prices and interest rates.

Figure 9. Regional Cost of Housing, 1980-87 (Percentage Change at Annual Rates)

	Median Existing Home Sale Price	Pct. Change in House Prices	Pct. Change in CPI Rents	Pct. of Renters
Northeast	\$136,900	11.5%	7.0%	38.2%
New York	183,000	15.4	6.7	58.5
Boston	181,600	10.6	8.4	46.1
Midwest	\$66,100	3.1%	4.9%	32.2%
Chicago	91,200	4.3	6.0	42.6
South	\$79,100	3.9%	4.9%	33.8%
Miami	83,500	3.2	4.2	45.2
Dallas	89,300	4.8	5.5	40.7
Houston	67,300	1.1	1.5	39.1
West	\$105,700	1.7%	6.6%	41.1%
Los Angeles	145,400	4.5	7.5	52.0
San Francisco	175,900	8.3	8.0	47.4

Sources: National Association of Realtors; Wharton Econometrics; U.S. Bureau of Labor Statistics; and U.S. Bureau of the Census.

Replacement Demand for Rental Housing

In addition to the demographic and economic demand for rental housing, there is a substantial loss from the housing stock each year that must be replaced. Losses from the housing stock arise through demolitions, conversions from residential to nonresidential uses and catastrophic events such as fire, flood and windstorms. Increases to the housing stock can occur through the conversion from nonresidential to residential uses. For the total housing stock, estimates of replacement rates range from 0.2% to 0.9% per year.

For rental housing, additional losses occur through the shift of rental units to ownership through condominium conversions or other processes. Offsetting these losses are movements of ownership units into the rental market through, for example, the conversion of large owner-occupied single homes into smaller rental facilities or rental of condominium units.

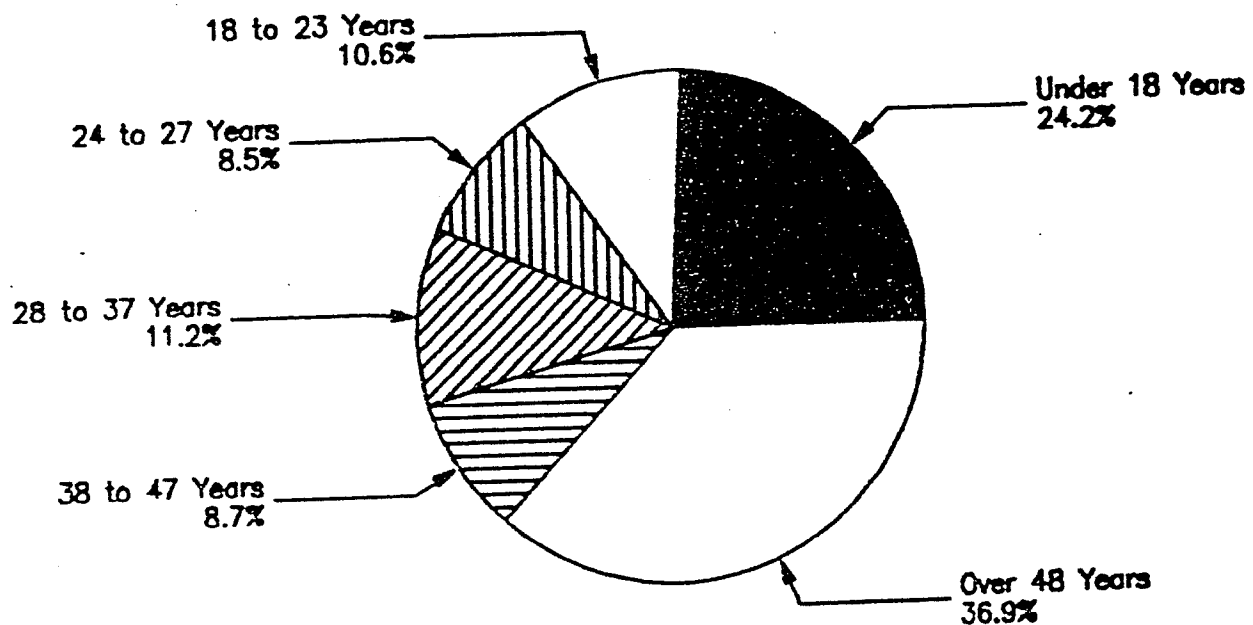
The replacement rate for rental housing is higher than the rate for the overall housing stock, primarily because of the older age of the rental housing stock. As Figures 10 and 11 show, nearly 37% of the rental housing was built prior to 1940, compared with just 25% of the owner-occupied stock. Applying a conservative estimate of 0.4% for a replacement rate, this implies an additional demand of nearly 120,000 rental units per year in the late 1980s and 1990s. Combining replacement and demographic demand leads to an aggregate demand of about 500,000 rental units per year in the late 1980s and 1990s.

Figure 10. Age Distribution of Housing Stock (Units in Thousands)

Year Structure Built	Year-Round Housing Units		Owner Occupied		Renter Occupied	
	Units	Pct. Distri- bution	Units	Pct. Distri- bution	Units	Pct. Distri- bution
Total	91,675	100.0%	54,724	100.0%	29,914	100.0%
April 1970 or later	23,686	25.8%	14,534	26.6%	7,232	24.2%
1965-March 1970	9,643	10.6	5,929	10.8	3,156	10.6
1960-64	8,451	9.2	5,423	9.9	2,532	8.5
1950-59	14,331	15.6	10,243	18.7	3,354	11.2
1940-49	8,101	8.8	4,918	9.0	2,606	8.7
1939 or earlier	27,413	29.9	13,607	24.9	11,034	36.9

Source: U.S. Bureau of the Census, Annual Housing Survey, 1983.

Figure 11. Age of Renter-Occupied Units



Source: U.S. Bureau of the Census, Annual Housing Survey, 1983.

The Supply of Rental Housing

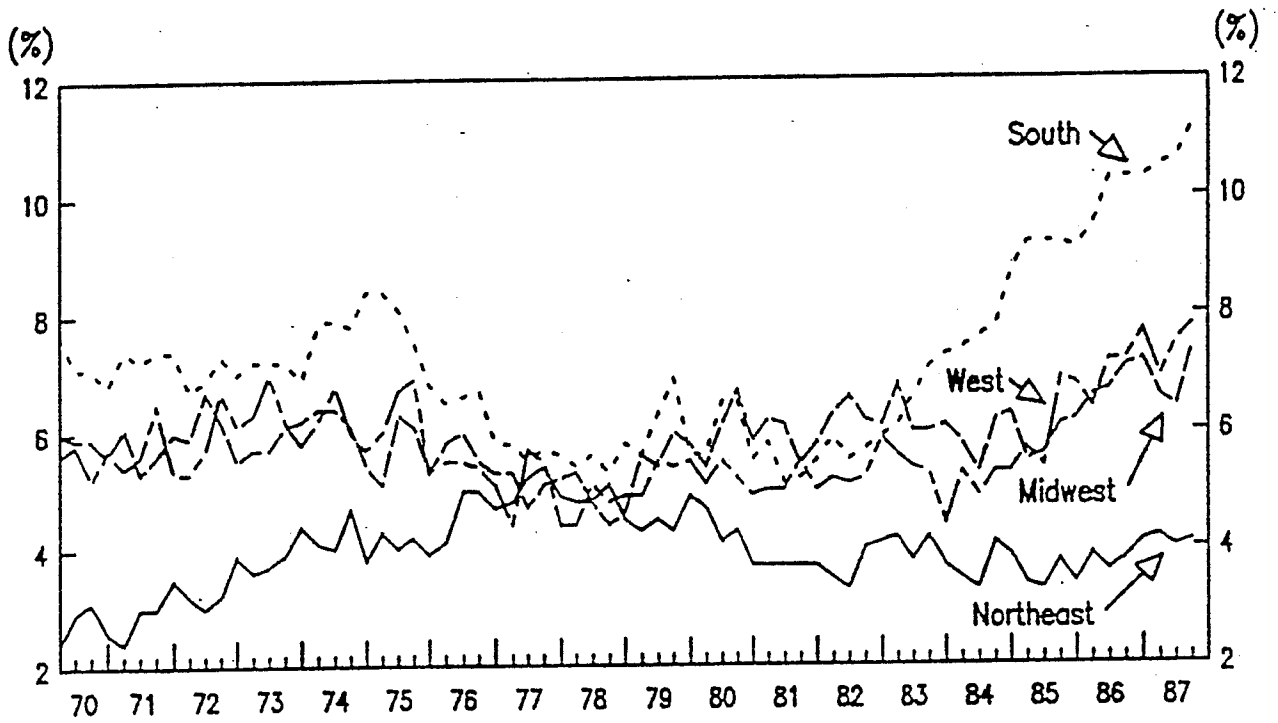
Vacancy Rates and Rents

Another key measure of the strength of the rental housing market is the vacancy rate. For example, the aggregate vacancy rate in the rental sector has risen substantially since its low in 1981 (see Figures 12 and 13). As of late 1987, aggregate rental vacancy rates neared their highest levels in almost 20 years. This high aggregate national vacancy rate is, however, deceptive. The vacancy rate in the South, reflecting distress in the energy belt, has nearly doubled to historic highs, yet, the Northeast's vacancy rate remains near historic lows. The Midwest and West have vacancy rates that, while rising relative to the past several years, are close to normal levels.

Regional disparities in economic and demographic conditions are reflected in the dramatic differences in rental market conditions around the country. Substantial increases in rents and low vacancy rates are the norm in the Northeast and California. In the Midwest, rent increases have been slower, and vacancy rates have shown only a modest rise. In Texas and Denver, rent declines are the rule and vacancy rates have skyrocketed.

We extrapolated from last year's results, at least for the intermediate term forecast. As long as occupancies remain strong in the Northeast and California, rental apartment investment and development should be well rewarded. In most overbuilt regions, a substantial increase in economic growth, which translates into rising occupancy rates, will be required before an adequate return on investment can be expected, despite low acquisition costs.

Figure 12. Rental Vacancy Rates By Region, 1970-87



Source: U.S. Bureau of the Census.

Figure 13. Rents and Vacancy Rates by Region and Metropolitan Area

	Pct. Change In Rents (Jun 86-Jun 87)	Vacancy Rates ^a	
		1984	1986
U.S.	4.4	5.9%	7.4%
Northeast	6.3%	3.7%	3.9%
Baltimore	4.0	7.0	5.9
Boston	6.9	4.9	5.3
New York	7.5	2.2	2.9
Philadelphia	4.8	5.6	5.2
Washington, D.C.	4.4	3.4	5.3
Midwest	3.9%	5.9%	7.0%
Chicago	4.9	5.4	6.8
Cincinnati	5.5	6.5	6.4
Cleveland	2.9	6.7	7.3
Detroit	5.6	5.2	7.4
Kansas City	2.5	4.0	8.6
Milwaukee	3.7	2.7	3.9
Minneapolis	3.9	2.6	3.3
Pittsburgh	2.0	7.1	8.4
St. Louis	4.6	4.7	6.2
South	2.3%	7.9%	10.1%
Atlanta	6.2	5.9	5.3
Dallas	-1.4	7.7	17.0
Houston	-2.7	15.4	19.6
Miami	1.1	8.2	9.2
West	4.4%	5.2%	7.1%
Denver	0.6	8.3	9.2
Los Angeles	6.1	3.4	4.1
Portland	3.3	6.7	5.4
San Diego	4.9	2.8	5.0
San Francisco	5.1	4.7	4.1
Seattle	2.6	4.1	5.2

^a The vacancy rates shown are for buildings with two or more units. However, the vacancy rate for buildings with five or more units is typically four percentage points higher, but these data are not available regionally.

Sources: U.S. Bureau of Labor Statistics; U.S. Bureau of the Census; and Institute of Real Estate Management.

New Construction

In addition to vacancy rates, a crucial measure of supply response in the housing market is the level of new construction. The reduction in tax benefits and the restrictions on tax-exempt financing for rental apartments as set forth in the new tax law, plus the high vacancy rates in sunbelt areas, has led to a sharp decline in new multifamily construction in 1986 and 1987. The most severe declines in new construction occurred in energy-related and sunbelt cities (see Figure 14). Prior to this, the level of new construction -- both single family and multifamily -- had picked up considerably in response to the improved rental investment climate since 1983 (see Figure 15).

The New Tax Law and the Apartment Market¹

Four major features of the new tax law significantly affect apartment investments:

- (1) The depreciable life of rental apartment assets was lengthened from 19 years to 27.5 years. The new law eliminates the use of accelerated depreciation.
- (2) Effective capital gains tax rates have increased. For top tax bracket investors, the effective capital gains tax rate has risen to 28% from 20%.

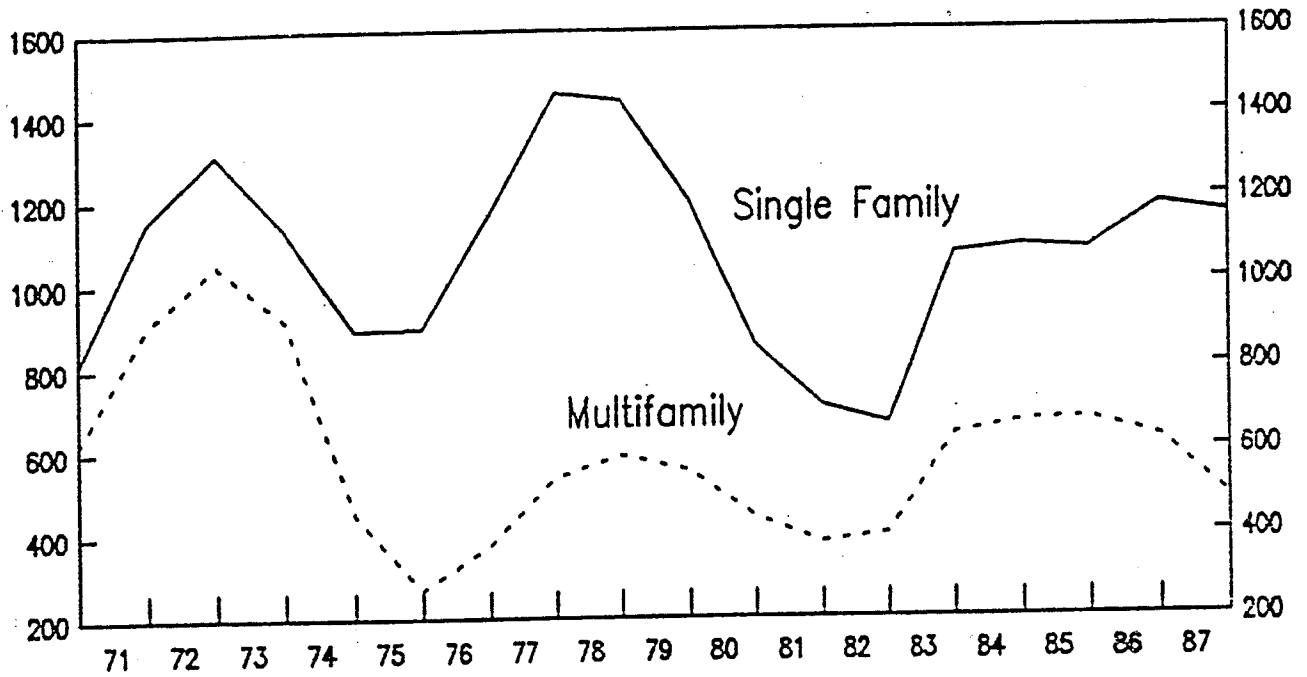
¹ Much of this analysis is an updated version of Tax Reform and Real Estate, Kenneth T. Rosen and Andrea Lepcio, Salomon Brothers Inc, September 1986.

Figure 14. Multifamily Building Permits (Two or More Units) by Region, 1985-87E

	1985	1987E	Pct. Change
U.S.	776,671	506,868	-34.7%
Northeast	86,210	74,468	-13.6%
Baltimore	4,186	3,885	-7.2
Boston	7,454	7,322	-1.8
New York	19,703	12,702	-35.5
Philadelphia	3,410	4,175	22.4
Washington, D.C.	5,305	14,048	164.8
Midwest	108,428	104,830	-3.3%
Chicago	12,980	12,133	-6.5
Cincinnati	2,089	2,768	32.5
Cleveland	2,078	2,225	7.1
Detroit	9,205	9,352	1.6
Kansas City	8,985	7,294	-18.8
Milwaukee	2,185	3,281	50.2
Minneapolis	9,595	11,258	17.3
Pittsburgh	1,554	1,364	-12.2
St. Louis	7,164	5,884	-17.9
South	323,780	159,635	-50.7%
Atlanta	17,671	12,677	-28.3
Dallas	27,974	2,797	-90.0
Houston	2,971	195	-93.4
Miami	9,247	8,475	-8.3
West	258,253	167,935	-35.0%
Denver	7,204	3,098	-57.0
Los Angeles	39,035	39,800	2.0
Portland	3,815	3,123	18.1
San Diego	25,349	15,789	-37.7
San Francisco	24,536	19,106	-22.1
Seattle	10,989	12,068	9.8

Source: U.S. Bureau of the Census.

Figure 15. Single-Family and Multifamily New Housing Starts, 1970-87E



Source: U.S. Bureau of the Census.

(3) The ability to use real estate tax losses to offset nonreal estate income is reduced. One of the most important provisions of the new law -- and the key to the elimination of tax shelters -- is the restriction on the ability of individuals to shelter earned income and portfolio income (dividend and interest) with losses arising from passive activities. Passive activity losses can only be offset against passive activity gains. All limited partnership interests are to be treated as passive activities, even if the limited partner materially participates in the business activity. Rental real estate activity is considered passive whether or not the taxpayer materially participates. There are special rules for individuals with income below \$150,000. Individuals are allowed to deduct up to \$25,000 of passive losses annually (to the extent that they exceed passive activity gains) from rental real estate if the individual actively participates. The \$25,000 deduction is reduced by 50% of the individual's adjusted gross income above \$100,000, thus eliminating tax benefits for those with adjusted gross income greater than \$150,000.

These limitations on investment interest deductions and passive losses will be phased in over a four-year period. Deductions will be reduced by 35% in 1987, by 60% in 1988, by 80% in 1989, and by 90% in 1990. Finally, unused annual tax shelter losses can be carried forward.

(4) The maximum Federal income tax rate has been lowered to 28% in 1988. Reducing the tax rate has reduced the value of the deductions normally associated with real estate. In addition, the plan has tightened alternative minimum tax provisions.

The Impact of Tax Reform on Values, After-Tax Cash Flows, Rents, and Rates of Return

The impact of the tax reform proposals as tested using the standard deterministic cash flow model employed by real estate industry analysts on a prototypical apartment complex is outlined below.

(1) A base case was calculated for the Accelerated Cost Recovery System (ACRS) tax environment.

(2) The present tax environment was simulated in the same cash flow model with nontax assumptions held constant to produce estimates of internal rates of return (IRR) and after-tax cash flows.

(3) A final set of simulations were done to determine the possible effects of the present tax environment on values and rents. In these simulations, the IRR was constrained to that being achieved prior to 1986, the new tax provisions were assumed fully in effect and rents and value were allowed to adjust to solve the simulations.

Results

The full implementation of the new tax structure will result in a substantial drop in after-tax IRR, reflecting the increased tax liability from operations. Comparison of the after-tax IRR under the ACRS tax code, the new tax code and the pre-ACRS tax code shows that, as expected, the highest return is achieved under the ACRS tax code (see Figure 16). The new tax law results in a 55% drop in IRR for apartments. Tax reform, therefore,

Figure 16. After-Tax Internal Rate of Return for Apartments
(Ten-Year Holding Period)

Pre-ACRS (Pre-1981)	10.1%
ACRS	14.1
New Tax Code	6.3

eliminates ACRS benefits and reduces the after-tax internal rate of return to levels below those available in the past two decades. This is because the new tax code substantially reduces the tax benefits from interest and depreciation deductions that result in tax savings under the ACRS provisions. In particular, first-year depreciation under current law has been reduced by nearly two thirds compared with the ACRS schedule. Cumulative depreciation over the ten-year holding period has been reduced by nearly 50% (see Figure 17).

Figure 18 summarizes the overall effects on after-tax IRR and the present value of after-tax cash flow on rents and value considering tax reform.

For the tax-oriented apartment investor, the IRR will drop by 55%, and the present value of after-tax cash flow will fall by 45%. To compensate for the reduced value of these tax benefits, rents will have to rise by 19%, or apartment prices will have to fall by 16%. The dynamics of this adjustment process will likely be as follows: Values will initially fall, new construction will drop, vacancy rates will decline, and rents will eventually rise. Given the present weak market conditions in many parts of the country, it may take five years or more for this adjustment in rents and values to occur.

Figure 17. Comparison of Depreciation Deductions for Apartments^a

Year	Pre-ACRS	ACRS	Current Law
1	3.13%	9.21%	3.64%
2	3.03	8.36	3.64
3	2.93	7.59	3.64
4	2.84	6.89	3.64
5	2.75	6.26	3.64
6	2.67	5.68	3.64
7	2.58	5.26	3.64
8	2.50	5.26	3.64
9	2.50	5.26	3.64
10	2.50	5.26	3.64
Cumulative Total	27.4%	65.0%	36.4%

^a Estimated depreciation schedules for a prototypical apartment complex.

Figure 18. Impact of Tax Reform on Apartments
(Percentage Change From ACRS)

Internal Rate of Return	-55.3%
Present Value of After-Tax Cash Flow	-44.8%
Rents Value	19.3% -16.2%

Financing Apartment Development and Investment

The dollar volume of construction lending and permanent lending to the apartment market reached record levels in the first half of 1987. There were \$56.2 billion in multifamily mortgages originated in the first half of 1987 (annual rate), up by 76% from \$31.9 billion in 1985. On the construction lending side, \$37.5 billion in activity was registered in the first half of 1987 (annual rate), up from \$29.8 billion in 1985.

In addition to this record volume of lending activity, there has been a substantial shift in the source of funds for the multifamily market. Savings and loans are now the dominant lenders, with 42% of the market. The financing of apartments by tax-exempt bond issues has fallen from \$12 billion in 1984 to virtually nil in early 1987 (see Figure 19).

The Investment Performance of Apartments

Unfortunately, no direct measures exist for the investment performance of apartments. An indirect measurement of performance can be inferred from changes in rents and net operating income. Rents relative to general inflation have risen substantially in the past five years, reversing the trend of the past decade (see Figure 20). From 1982 to 1986, rents rose by an average of 2% per year faster than overall inflation. In the first half of 1987, rents continued to outpace inflation and, as Figure 13 shows, California and Northeast cities continue to show rent increases

Figure 19. Long-term Multifamily Mortgage Loan Originations,^a
1980-87

	1980	1985	1986	1987
Commercial Banks	10%	15%	14%	21%
Life Insurance Companies	12	8	8	6
Savings Institutions	29	53	46	42
Mortgage Companies	13	8	14	5
Agencies	34	16	18	26

^a As a percentage of total loans.

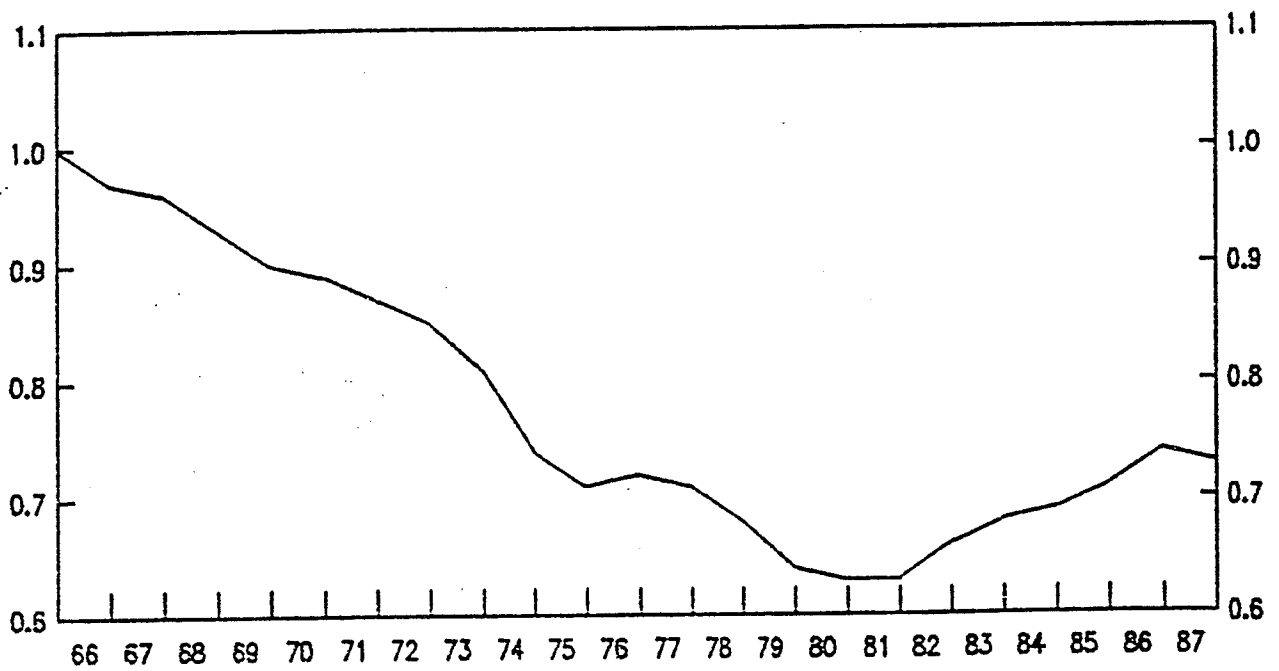
Source: U.S. Department of Housing and Urban Development.

Figure 20. Growth in Nominal and Real Residential Rents,
1970-87 (Year-to-Year Percentage Change)

	Nominal Rents	Real Rents
1970	4.1%	-1.8%
1971	4.6	0.4
1972	3.5	0.2
1973	4.3	-1.9
1974	5.0	-6.0
1975	5.2%	-3.9%
1976	5.4	-0.3
1977	6.0	-0.5
1978	6.9	-0.8
1979	7.3	-4.0
1980	8.8%	-4.7%
1981	8.7	-1.7
1982	7.6	1.5
1983	5.8	2.5
1984	5.2	1.0
1985	6.1	2.6
1986	5.8%	3.9%
1987	4.1	0.5

Source: U.S. Bureau of Labor Statistics.

Figure 21. Rental Housing Costs Relative to Construction Cost



Sources: U.S. Bureau of Labor Statistics and U.S. Bureau of the Census.

in the 5%-7% range. Rent increases have outpaced construction or replacement costs, again an indicator that apartments are economically desirable properties (see Figure 21).

In sum, apartments, especially in the Northeast and California, and selected other areas, still appear to provide good economic benefits.

Summary

- The basic demographic demand for apartments shows wide variance across regions and even within metropolitan areas.
- Energy-related areas and certain Sunbelt areas have excess apartment supply, posting vacancy rates in the 10%-20% range.
- The East, Midwest and California regions generally still show average vacancy rates of less than 5%. Strong regional economies, large migration to California and Florida and a sharp slowdown in new apartment construction should keep the vacancy rates in check in these areas.
- Short-run demand for new rental units appears healthier. Absorption of new rental units is improving and real median rents are rising.
- Long-term demographic demand for rental housing nationally is somewhat negative. The population aged 18-24, the prime occupants of rental housing, will decline by nearly 10 million between now and the year 2000. Offsetting this will be the rising demand by people over age 65 for rental housing and the continued increase in the ratio of households to population.

- Rents on apartment units have climbed in real terms over the past year, though the rate of increase has slowed relative to the past several years. Nationally, rents rose by 4.1% in nominal and by 0.5% in real terms in 1987. Aggregate national figures disguise wide regional disparity, however, reflecting local economic conditions. For example, rents rose by 5%-7% in the Northeast and California and declined by 1%-3% in Dallas and Houston.
- The Tax Reform Act of 1986 has reduced the after-tax internal rate of return (IRR) on a typical new apartment project by more than 50% compared with the return before tax reform. To restore returns to their levels before tax reform, rents would have to rise by 19% or purchase prices would have to fall by 16%.
- Tax-motivated investors in apartment buildings are withdrawing from the market or are restructuring their investments. Thus, the tax-oriented syndicator is much less in evidence today.
- Institutional investors such as life insurance companies and pension funds are now able to compete with tax-motivated investors and so are beginning to accelerate their investment in apartment buildings. Such investors are demanding higher cash returns, often accompanied by substantially lower leverage than has been typical of the apartment market.
- Loan demand for apartments remained strong in 1987, with mortgages originated at a \$57-billion annual rate.

● The sources of mortgage credit have shifted dramatically. In the past year, savings and loans, banks and, increasingly, insurance companies have been the major source of long-term mortgage credit for the apartment market. This represents a dramatic shift from the use of tax-exempt bond financing, which accounted for \$12 billion of financing in 1985 and just \$2 billion in 1986.