

The Economics of the Apartment Market in the 1990s

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Abstract. This paper examines fundamental and investment demand for rental apartments in the 1990s. Demographic and economic trends fuel the demand for rental housing. While rental demand in the U.S. as a whole will be somewhat weak in the 1990s, demand will be strong for areas with high in-migration, due to the younger age characteristics of movers, and the high costs of homeownership in many regions. Apartments represent one of the few real estate product classes in which demand will outpace supply in the 1990s. This impending supply-demand imbalance will result in substantial increases in real rents and investment values in select apartment markets across the country. This report proceeds to describe some of the major financial, economic and demographic conditions that will create attractive investment opportunities for institutional-grade apartment investments in the 1990s.

Introduction

This paper examines fundamental and investment demand for rental apartments in the 1990s. Demographic and economic trends fuel the demand for rental housing. While rental demand in the U.S. as a whole will be somewhat weak in the 1990s, demand will be strong for areas with high in-migration, due to the young age characteristics of movers, and the high costs of homeownership in many regions. Compounding this effect is the continued growth in nontraditional households, which tend to be younger and more likely to rent.

The supply of rental housing boomed in the mid-1980s, but has since declined sharply due to the lack of funds for new construction. The Tax Reform Act of 1986 (TRA) and Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) have severely restricted the flow of debt and equity capital to the apartment market. We expect this effect to continue in the near term, resulting in continued low construction levels. However, the surge in the new REIT offerings may improve the access to capital by apartment developers and may lead to accelerated development in the 1995–1998 period.

Still, apartments represent one of the few real estate product classes in which demand will outpace supply in the 1990s. This impending supply-demand imbalance will result in substantial increases in real rents and investment values in select apartment markets across the country. For the investor, successful apartment investment decisions require a careful monitoring of capital flows into the apartment market, a thorough analysis of demographic trends, an understanding of the economics of homeownership, and a continuous monitoring of rental housing supply and demand in target market areas. This

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Demand

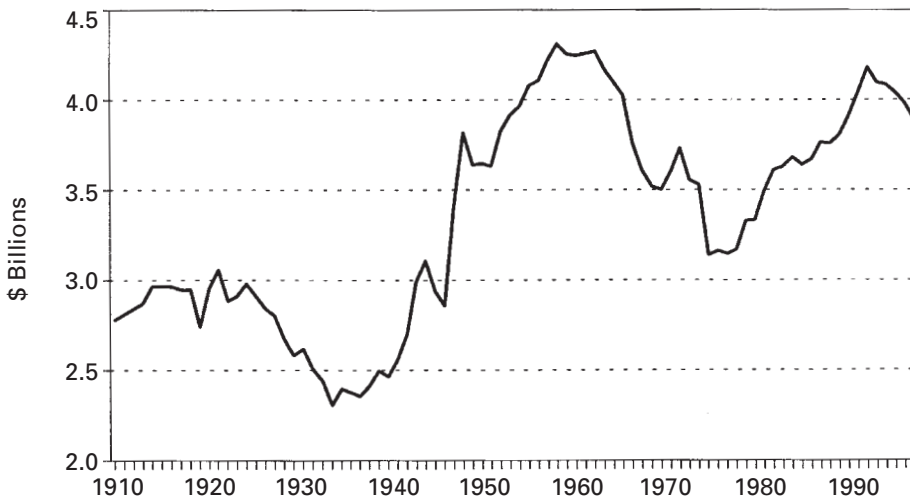
On the demand side, demographic trends are a key factor in the outlook for apartment investments. In addition to demographic trends, the demand for rental housing is a function of many other factors including the cost differential between owning and renting, life-style preferences, and locational considerations.

Changing Demographic Demand for Rental Housing

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 influences on the age distribution of the population are the post-World War II baby boom, which occurred from 1947 to 1961, the subsequent baby bust, which bottomed in 1975, and the echo baby boom, which has accelerated over the past fifteen years. As Exhibit 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 Exhibit 2 shows, another key rental population age group, people aged 18–24, which declined in the 1980s, will actually rise

Exhibit 1
United States Births, 1910–1995



Source: U.S. Census Bureau, National Center for Health Statistics

Exhibit 2
Rental Housing Demographics
Population by Age Group (000)

	1970	% of Total	1980	% of Total	1990	% of Total	2000	% of Total
Total	204,879	100.0	226,545	100.0	249,404	100.0	274,635	100.0
Under 5	17,156	8.4	16,348	7.2	18,849	7.6	16,987	6.9
5-14	40,733	19.9	34,942	15.4	35,251	14.1	39,977	14.6
15-24	36,496	17.8	42,487	18.8	36,885	14.8	38,077	13.9
25-34	25,293	12.3	37,082	16.4	43,139	17.3	37,233	13.6
35-44	23,142	11.3	25,634	11.3	37,765	15.1	44,659	16.3
45-54	23,310	11.4	22,800	10.1	25,188	10.1	37,030	13.5
55-64	18,664	9.1	21,703	9.6	21,092	8.5	23,961	8.7
65+	20,085	9.8	25,549	11.3	31,235	12.5	34,711	12.6

Absolute Change and Annual Average Change (000)

	1970-1980		1980-1990		1990-2000	
	Absolute	Annual (%)	Absolute	Annual (%)	Absolute	Annual (%)
Total	21,666	1.0	23,859	1.0	25,231	1.0
Under 5	(808)	-0.5	2,501	1.4	138	0.1
5-14	(5,791)	-1.5	309	0.1	4,726	1.3
15-24	5,991	1.5	(5,602)	-1.4	1,192	0.3
25-34	11,789	3.9	6,057	1.5	(5,906)	-1.5
35-44	2,492	1.0	12,131	4.0	6,894	1.7
45-54	(510)	-0.2	2,388	1.0	11,842	3.9
55-64	3,039	1.5	(611)	-0.3	2,869	1.3
65+	5,464	2.4	5,686	2.0	3,476	1.1

Source: U.S. Census Bureau

in the 1990s. On the other hand, population in the 25-34 age group, the prime first-time homeowners age group, will decline by nearly seven 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 over three million by the year 2000. With this rise in elderly renters and the increase in young households, there should be an increase in the demand for rental housing. Other positive factors include: the continued increase in household formation relative to population, the strong regional immigration in states such as California, Florida, Texas, Arizona, Washington, Oregon, and Nevada, and the increase in the relative affordability of rental housing on the East and West Coasts because of the sharp rise in prices of single-family homes since 1985. Exhibit 3 shows a comparison of age trends for regions and selected states against the U.S. The South and the West will show a relative increase in their shares of the 15-34-year-old age group. Arizona and Florida will have the largest increases in the 65-and-over group.

Exhibit 3
Change in Population by Age Group (000)

	15-24 Year Olds		25-34 Year Olds		35-44 Year Olds		45-64 Year Olds		65+ and Over	
	1980- 1990	1990- 2000	1980- 1990	1990- 2000	1980- 1990	1990- 2000	1980- 1990	1990- 2000	1980- 1990	1990- 2000
U.S.	(5,602)	1,192	6,057	(5,906)	12,131	6,894	1,777	14,711	5,686	3,476
Northeast	(1,830)	(359)	1,012	(1,672)	2,001	992	(364)	1,643	236	880
New Jersey	(219)	(60)	196	(234)	333	204	23	220	210	20
New York	(616)	(136)	272	(558)	595	339	(103)	441	228	(33)
South	(1,390)	790	2,885	(1,896)	4,505	2,682	1,888	5,655	2,458	402
Florida	(22)	(158)	570	(362)	726	588	564	873	742	326
Texas	(70)	382	766	(412)	1,108	503	513	1,139	387	343
Georgia	(3)	45	271	(54)	382	331	210	524	160	102
North Carolina	(105)	22	211	(82)	323	261	141	502	218	170
Midwest	(2,630)	(348)	947	(1,906)	1,985	1,786	(362)	3,008	1,043	538
Ohio	(459)	15	120	(335)	391	224	(132)	500	232	124
Michigan	(398)	(55)	133	(337)	367	185	(86)	461	189	96
West	(773)	1,334	1,803	(1,021)	3,331	1,641	1,178	3,841	1,491	1,111
Arizona	16	152	200	(29)	246	187	161	368	304	139
California	(364)	435	1,182	(707)	1,821	776	681	1,389	800	173
Nevada	0	97	61	38	77	142	46	254	48	105

Source: U.S. Census Bureau

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 non-relatives.

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 only one-fourth of these were traditional husband-and-wife family households. The number of individual households almost doubled in this period. While this trend toward nontraditional households moderated from 1980 to 1990, an additional 6 million individual households were formed during this period versus 6.5 million family households. By 1995 only 55% of households were husband-and-wife families, while 45%

Exhibit 4
Household Type by Age of Householder, 1995

	Non-Family		Nontraditional Family		Married Family	
Total	29,340,203	30.0%	14,949,765	15.3%	53,432,915	54.7%
Under 25	2,359,97	48.9	1,024,832	21.2	1,441,619	29.9
25 to 29	2,767,648	34.8	1,406,727	17.7	3,779,946	47.5
30 to 34	2,774,875	25.6	1,891,913	17.5	6,161,975	56.9
35 to 44	4,818,616	21.2	4,171,694	18.3	13,766,186	60.5
45 to 54	3,683,741	20.8	2,829,086	16.0	11,210,122	63.3
55 to 64	3,271,164	26.5	1,538,705	12.5	7,520,910	61.0
65 to 74	4,412,725	37.2	1,181,791	10.0	6,254,978	52.8
75+	5,251,463	55.5	905,017	9.6	3,297,179	34.9

Source: U.S. Census Bureau

were nontraditional household units. Exhibit 4 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 three 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 twenty-five 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. 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 (see Exhibit 5).

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 6.5% increase from 1980 to 1990 (see Exhibit 6). On the other hand, nonfamily households showed more

Exhibit 5
Net Household Formation, U.S., 1948–1996f



Sources: U.S. Census Bureau, RCG

Exhibit 6
Households by Type
(absolute numbers in thousands)

	1970		1980		1990	
	Absolute	% of Total	Absolute	% of Total	Absolute	% of Total
Total	63,401	100.0	80,776	100.0	93,347	100.0
Family						
Husband and Wife	44,728	70.5	49,112	60.8	52,317	56.0
Nontraditional	6,728	10.6	10,438	12.9	13,773	14.8
Male Head	1,228	1.9	1,733	2.1	2,884	3.1
Female Head	5,500	8.7	8,705	10.8	10,889	11.7
Non-Family	11,945	18.8	21,226	26.3	27,257	29.2
Male Head	4,063	6.4	8,807	10.9	11,606	12.4
Female Head	7,882	12.4	12,419	15.4	15,651	16.8

Source: U.S. Census Bureau

than a 28% gain during the 1980–90 time period, divorced female households expanded by 36%, single-person households escalated by 15.5%, and persons of the opposite sex sharing the same living quarters rose by an astounding 47%. Nontraditional households should continue to grow strongly, adding 700,000 per year in the 1990s.

Exhibit 7
Tenure Choice by Household Type and Age, 1990

Age of Householder	Renters				Owners			
	Total (%)	Married Family (%)	Non- Traditional Family (%)	Non- Family (%)	Total (%)	Married Family (%)	Non- Traditional Family (%)	Non- Family (%)
Under 20	92.7	88.5	96.3	92.6	7.3	11.5	3.7	7.4
20-24	83.7	72.9	88.7	90.4	16.3	27.1	11.3	9.6
25-29	63.8	49.9	81.3	78.5	36.2	50.1	18.7	21.5
30-34	47.4	31.8	70.3	70.4	52.6	68.2	29.7	29.6
35-39	36.8	23.0	58.2	62.9	63.2	77.0	41.8	37.1
40-44	28.6	16.5	46.5	56.9	71.4	83.5	53.5	43.1
45-49	24.0	13.3	39.2	50.0	76.0	86.7	60.8	50.0
55-64	20.4	11.0	27.6	41.4	79.6	89.0	72.4	58.6
65-74	21.8	9.4	23.7	38.2	78.2	90.6	76.3	61.8
75+	29.6	14.2	21.5	40.0	70.4	85.8	78.5	60.0

Source: U.S. Census Bureau

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 Exhibit 7). *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 mid-1990s in absolute numbers. However, by the late 1990s, the aging of the population will reduce the *proportion* of renters by a substantial amount. We estimate that by the year 2000 only 33% of households will be renters versus 35% today.

Changing Economic Demand for Rental Housing: Housing Affordability and Tenure Choice

In addition to shifting demographic demand for rental housing, there has also been a shift in the economics facing rental housing. In the 1980s, because of the sharp rise in home prices relative to household incomes, the cost of owning a home rose sharply relative to the cost of renting. This trend reduced aggregate homeownership from its peak level of 65.6% achieved in 1980. Conversely, as Exhibit 8 indicates, the proportion of all households who are renters increased to 36.1% by 1990. In past years, however, the sharp drop in mortgage rates, weak house prices, and aging population has begun to reverse this trend.

Exhibit 8
Percentage of Renters in Occupied Housing Units, 1890–2000e

Year	Percent	Year	Percent
1890	52.2	1980	34.4
1900	53.3	1981	34.7
1910	54.1	1982	35.2
1920	54.4	1983	35.4
1930	52.2	1984	35.5
1940	56.4	1985	36.1
1950	45.0	1986	36.2
1960	38.1	1987	36.0
		1988	36.2
1970	37.1	1989	36.1
1973	35.6		
1974	35.4	1990	36.1
1975	35.4	1991	36.0
1976	35.3	1992	35.9
1977	35.2	1993	36.0
1978	34.8	1994	36.0
1979	34.6	1995	35.3
		1996f	34.9
		2000e	33.0

Source: U.S. Census Bureau

To own the median-priced home today costs approximately 21% of the median household's income, down from 35% in 1981 when inflation and interest rates were exceptionally high, and up from 16% in 1970 (see Exhibit 9). This fall in costs effectively increases the number of first-time buyers in the homeownership market and, in turn, decreases demand in the rental market.

The homeownership affordability problem will continue in the Northeast and on the West Coast, where house prices surged during the 1980s. The 10% decline in house prices in 1989 through 1993 is minor relative to the previous rise in prices, even though low mortgage rates have improved affordability even in these regions. While rents have also risen, the cost of owning relative to renting has escalated beyond the levels previously seen only in California. Rental housing, on the other hand, remains quite affordable. Rents in the East and West Coasts increased 4% to 6% per year while homeownership costs increased 10% to 20% per year over the period from 1983 through 1990. Clearly, those regions with exacerbated homeownership affordability problems provide better prospects for continued strong rental housing demand than regions where homeownership is more affordable.

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

Exhibit 9
Comparative Cost of Renting and Owning, 1970–1996f

Year	Homeownership as a % of Income	Gross Rent as a % of Income
1970	16.4%	31.1%
1971	16.0	31.5
1972	15.8	30.4
1973	16.3	29.2
1974	18.5	28.8
1975	19.5	28.7
1976	19.6	28.1
1977	20.7	27.9
1978	22.2	26.9
1979	25.7	26.4
1980	30.7	26.7
1981	34.9	26.9
1982	34.7	27.4
1983	29.2	28.0
1984	27.7	27.4
1985	25.7	27.6
1986	23.7	27.7
1987	22.0	27.6
1988	21.8	27.4
1989	23.2	26.8
1990	22.8	27.0
1991	22.4	27.8
1992	20.6	28.0
1993	18.9	28.2
1994	21.1	28.0
1995	19.6	27.6
1996f	21.0	28.5

Sources: U.S. Census Bureau, NAR, RCG

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.

Exhibit 10
Age of Structure, Rental and Homeowner Units, 1990

Year Built	% of all Rental Units	% of All Homeowner Units
1970 or later	44	41
1960–1969	13	16
1950–1959	11	15
1940–1949	10	9
1939 or earlier	22	19

Source: U.S. Census Bureau

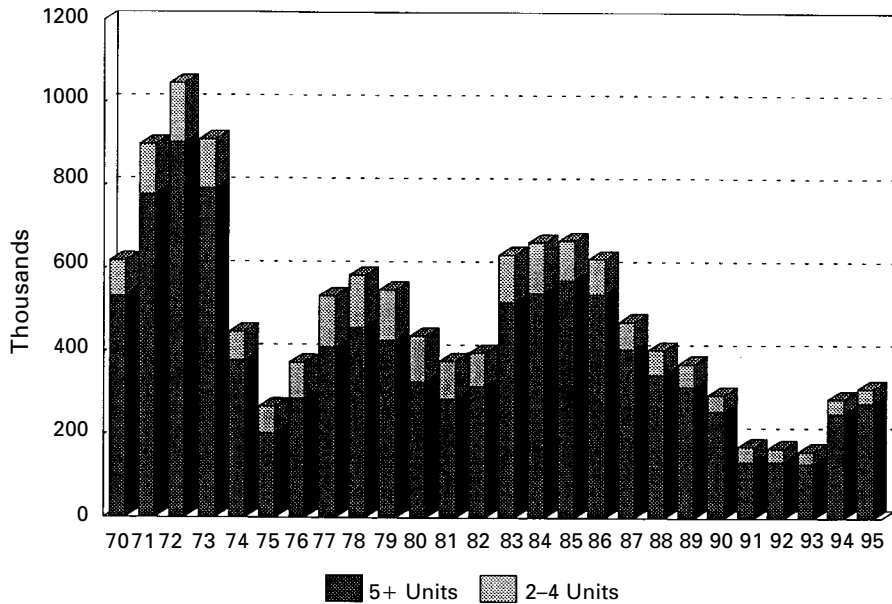
The replacement rate for rental housing is higher than the rate for the overall housing stock, primarily because of the older age of the rental housing stock. As Exhibit 10 shows, 22% of the rental housing was built prior to 1940, compared with just 19% of the owner-occupied stock. Applying a conservative estimate of .4% for a replacement rate, this implies an additional demand of nearly 120,000 rental units per year in the 1990s. Combining replacement and demographic demand leads to an aggregate demand of about 400,000 rental units per year in the 1990s.

Supply

The most prominent issue affecting the supply of new apartments is availability of capital to the market place. The Tax Reform Act of 1986, the reduction in mortgage revenue bond issues and the passage of the Financial Institutions Recovery and Reform Act of 1989 (FIRREA) have been causal factors in significantly reducing the flow of equity and debt funds into the apartment market. Although nearly 5.5 million units have been built since 1980, the net result of the reduction in capital available to the multifamily market has been a dramatic decrease in the rate of annual additions of apartment units to the U.S. housing stock since 1986. As illustrated in Exhibit 11, over 600,000 apartment units were constructed annually in the 1983–1986 period, versus only 170,000 units built in 1992, a decrease of over 70%. By 1995–1996 new construction had rebounded to 280,000 units built per year.

Exhibit 12 shows, apartment construction peaked in most MSAs in the second half of the 1980s, declined through 1992. Through September 1996, many metropolitan areas in the Midwest, South and West have shown significant gains in construction, although construction levels in Dallas and Houston are still far below their peaks in the first half of the 1980s. In the West, construction has slowed significantly from its peaks in the second half of the 1980s, although construction in Denver and Portland is proceeding at a fairly elevated level. In the Northeast, only New York and Washington have shown substantial increase in new construction. In the South, Houston and Dallas are showing increased construction but are still at very low levels compared to the 1980s.

Exhibit 11
Multifamily Housing Starts, 1970–1975 (000)



Source: U.S. Census Bureau

Vacancy Rates and Rents

A key measure of the strength of the rental housing market is the vacancy rate. The vacancy rate in the large-scale rental sector rose substantially from its low of 6.4% in 1981 to its peak of 11.4% in 1988 (see Exhibits 13 and 14). By mid-1989, vacancy rates had fallen to 8.9%. As of mid-1996, aggregate rental vacancy rates had risen again to 9.5%, reflecting the recession of the early 1990s and the improved affordability of homeownership. This high national vacancy rate is, however, deceptive. The vacancy rate in the South has fallen substantially from its historic highs, yet the Northeast's vacancy rate has risen to twenty-year highs. The Midwest and West have vacancy rates that are still 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 Southwest and Mountain states. In the Midwest, rent increases have been moderate, and vacancy rates have been stable. In the Northeast, slow rent increases and relatively high vacancy rates are the rule (see Exhibit 15).

We can extrapolate these trends, at least for an intermediate term forecast. As long as occupancies continue to be stable or improving in the Midwest and the Southwest, rental apartment investments should be well rewarded. In other 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.

Exhibit 12
Multifamily Construction Activity by Metropolitan Area
(permits issued)

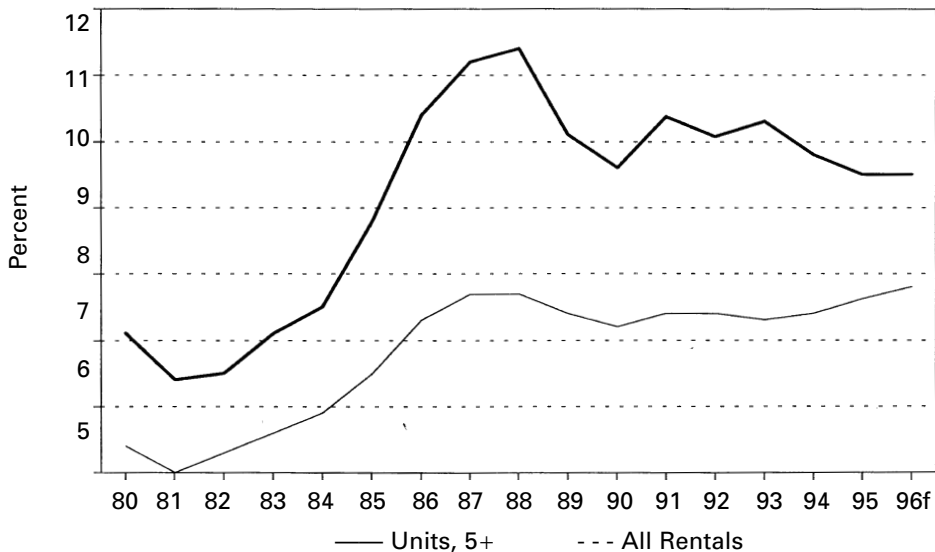
Metropolitan Area	Annual Average					Percent Change		
	1980–1985	1986–1990	1992	1995	1996e	Early '80s to Late '80s	Late '80s to 1992	1995–1996
Northeast								
Baltimore	2,588	4,070	1,759	1,549	1,859	57.3	–56.8	20.0
Boston	4,177	4,666	570	943	838	11.7	–87.5	–11.1
New York	11,385	9,268	3,650	4,600	7,200	–18.6	–60.6	56.5
Philadelphia	3,596	3,600	1,263	1,326	1,632	.1	–64.9	23.1
Washington	4,485	11,140	3,078	6,169	7,960	148.4	–72.4	29.0
Midwest								
Chicago	8,041	10,448	3,109	7,699	8,599	29.9	–70.2	11.7
Cincinnati	2,143	2,722	2,830	2,770	1,781	27.0	4.0	–35.7
Cleveland	1,159	2,294	1,057	1,856	1,172	97.9	–53.9	–36.8
Detroit	4,269	8,031	3,089	3,612	3,512	88.1	–61.5	–2.8
Kansas City	4,201	4,336	794	2,907	2,406	3.2	–81.7	–17.2
Milwaukee	1,602	3,859	2,547	2,675	2,576	140.9	–34.0	–3.7
Minneapolis–St. Paul	6,377	7,380	1,641	3,803	2,002	15.7	–77.8	–47.4
Pittsburgh	1,866	1,191	932	657	657	–36.2	–21.7	0.0
St. Louis	4,607	4,077	1,026	1,340	2,165	–11.5	–74.8	61.5
South								
Atlanta	11,719	13,006	1,831	13,112	10,610	11.0	–85.9	–19.1
Dallas	34,003	5,336	3,085	10,640	7,127	–84.3	–42.2	–33.0
Houston	21,978	1,247	3,629	5,113	4,612	–94.3	191.0	–9.8
Miami	9,725	8,860	3,284	7,425	3,311	–8.9	–62.9	–55.4
West								
Denver	8,524	2,784	234	5,375	6,072	–67.3	–91.6	13.0
Los Angeles	20,682	33,276	8,515	3,099	3,299	60.9	–74.4	6.5
Portland	2,246	4,910	2,344	7,094	7,294	118.6	–52.3	2.8
San Diego	11,951	14,685	2,526	1,855	1,172	22.9	–82.8	–36.8
San Francisco	4,194	3,361	1,296	1,273	1,665	–19.9	–61.4	30.8
Seattle	7,661	13,494	3,484	4,442	5,855	76.1	–74.2	31.8

Source: U.S. Census Bureau

Capital Constraints and the Future Supply of Rental Housing

The apartment market of the early 1990s faced a significant shortage of debt financing and equity capital. In the early and mid-1980s, the apartment market was the recipient of generous tax incentives and a plethora of financing opportunities from mortgage revenue bonds, real estate syndicators, and savings and loans. However, the Tax Reform Act of 1986, the reduction in mortgage revenue bond issues and the capital reserve requirements of FIRREA reduced the incentives for lending for multifamily housing construction and

Exhibit 13
Multifamily Vacancy Rates, 1980–1996f



Source: U.S. Census Bureau, RCG

Exhibit 14
National and Regional Rental Vacancy Rates

Year	United States (%)		All Rentals (%)			
	Units, 5+	All Rentals	Northeast	Midwest	South	West
1980	7.1	5.4	4.2	6.0	6.0	5.2
1981	6.4	5.0	3.7	5.9	5.4	5.1
1982	6.5	5.3	3.7	6.3	5.8	5.4
1983	7.1	5.6	4.0	6.1	6.9	5.2
1984	7.5	5.9	3.7	5.9	7.9	5.2
1985	8.8	6.5	3.5	5.9	9.1	6.2
1986	10.4	7.3	3.9	6.9	10.1	7.1
1987	11.2	7.7	4.1	6.8	10.9	7.3
1988	11.4	7.7	4.8	6.9	10.1	7.7
1989	10.1	7.4	4.7	6.8	9.7	7.1
1990	9.6	7.2	6.1	6.4	8.8	6.6
1991	10.4	7.4	6.9	6.7	8.9	6.5
1992	10.1	7.4	6.9	6.7	8.2	7.1
1993	10.3	7.3	7.0	6.6	7.9	7.4
1994	9.8	7.4	7.1	6.8	8.0	7.1
1Q95	9.4	7.4	7.3	6.7	8.3	6.8
2Q95	9.5	7.7	7.5	7.1	8.2	7.7
3Q95	9.5	7.7	7.1	7.4	8.2	7.9
4Q95	9.6	7.7	6.9	7.6	8.5	7.5
1Q96	9.8	7.9	6.9	8.3	8.5	7.6
2Q96	9.5	7.8	7.6	7.2	8.6	7.2
3Q96	9.9	8.0	7.8	7.8	8.7	7.4

Note: Vacancy rates for 5+ units are not available by region.

Source: U.S. Census Bureau

Exhibit 15
Rental Inflation and Vacancy Rates by Metropolitan Area

Metropolitan Area	Rent Change (%) 6/95-6/96	Vacancy Rates (%)			
		1988	1990	1992	1995
Northeast					
Baltimore	2.7	5.4	5.2	7.0	6.4
Boston	6.4	4.1	6.0	7.0	5.6
New York	-	2.8	4.7	5.5	5.2
Philadelphia	3.2	6.3	9.6	8.7	10.8
Washington, DC	5.3	4.6	6.7	8.8	8.2
Midwest					
Chicago	3.4	6.8	6.6	8.4	7.9
Cincinnati	4.0	6.1	6.3	5.7	6.6
Cleveland	2.6	5.4	7.8	7.3	8.3
Detroit	3.5	8.5	7.6	8.7	9.0
Kansas City	2.8	8.8	9.9	10.8	14.0
Milwaukee	-0.7	2.0	3.6	5.0	6.2
Minneapolis-St. Paul	3.3	6.5	6.5	5.5	4.9
Pittsburgh	2.4	9.3	8.3	7.1	4.7
St. Louis	5.5	7.6	10.7	10.0	5.6
South					
Atlanta	3.9	7.8	9.3	9.0	9.9
Dallas	2.3	17.9	12.3	9.0	7.4
Houston	0.1	13.5	10.8	10.7	10.2
Miami	3.1	9.3	6.3	6.0	5.7
West					
Denver	0.0	12.1	6.9	4.3	4.9
Los Angeles	2.5	5.5	6.2	8.2	9.7
Portland	-0.5	5.0	3.3	5.6	2.8
San Diego	4.3	-	3.9	4.9	8.7
San Francisco	8.4	3.5	4.2	4.1	5.4
Seattle	4.0	4.1	3.1	5.3	7.3

Source: U.S. Census Bureau

had a profound effect upon the supply of rental housing. In the mid-1990s, we have seen a renewal of capital inflows to the apartment sector with the issuance of nearly \$12 billion of REIT shares. This section focuses on how the change in capital available to the apartment market has created a well-defined cycle of investment opportunities in apartments.

Equity Capital Constraints

The Syndication Industry. The flow of equity capital into the apartment market in the 1980s was primarily through direct investments by individuals or through public and private real estate limited partnerships. The 1981 Economic Recovery and Tax Act greatly increased the tax incentives for individuals to invest in all types of real estate.

Through the shortening of depreciable lives and accelerated depreciation allowances, tax incentives for apartment investments (and other types of real estate) were essentially tripled. The real estate syndication industry was quick to capitalize on the desire of individuals to invest in the real estate tax shelters. The public and private real estate syndication industry, which had raised under \$2 billion in 1980, raised nearly \$13 billion in 1985. As shown in Exhibit 16, over \$60 billion of equity money was raised for real estate during the decade of the 1980s. We estimate that over 40% of this sum, or \$24 billion, was invested in apartment transactions.

This flow of equity capital to the apartment market was radically altered in the late 1980s. As discussed below, the Tax Reform Act of 1986 has greatly reduced the involvement of the tax-oriented real estate syndicator and the tax-oriented individual investor. By 1991, the sales of public and private partnerships had fallen by 85% to under \$1 billion, and many of the major syndication entities were in severe financial distress, if not actually in Chapter 11. The present state of the syndication industry indicates that the syndicators will raise only a small amount of money from individuals for investment in apartments in the early 1990s. This radical shift in fortune can clearly be attributed to the Tax Reform Act of 1986.

The Tax Reform Act and the Apartment Market. The full implementation of the new tax structure of 1986 has resulted in a substantial drop in after-tax IRRs of apartment investments for taxable investors. By eliminating ACRS benefits, tax reform has reduced the after-tax IRR to levels below those available anytime in the past two decades. Exhibit

Exhibit 16
Funds Raised by Real Estate Syndications

Year	Leveraged	Unleveraged	Mortgage			Total Public	Total Private	Total
			Loans	FREITS	MLPs			
1977	—	—	—	—	—	342	228	570
1978	—	—	—	—	—	580	387	967
1979	638	100	—	—	—	738	492	1230
1980	933	250	—	—	—	1183	188	1371
1981	1200	325	75	—	—	1600	1066	2666
1982	1492	456	317	207	—	2472	1647	4119
1983	2550	921	875	129	—	4475	3983	8458
1984	2381	1953	939	413	—	5686	5308	10994
1985	2322	2690	1902	948	200	8062	4682	12744
1986	2415	2516	2245	313	972	8461	2119	10580
1987	1842	2443	1856	350	463	6954	1000	7954
1988	1534	2099	974	626	70	5303	1800	7103
1989	1100	876	538	398	58	2970	600	3570
1990	591	280	185	410	—	1466	400	1866
1991	231	259	78	311	—	879	300	1,179
1992	182	273	69	333	—	857	—	857
1993	154	298	9	98	—	559	—	559
1994	93	247	6	50	—	396	—	396
1995	49	190	23	87	—	349	—	349

Source: Robert A. Stanger & Co., Inc.

17 shows a comparison of depreciation deductions for apartments as provided by the three previously mentioned major tax law revisions. Exhibit 18 summarizes the overall effects on after-tax IRR and the present value of after-tax cash flow on apartment rents and values from the implementation of tax reform.

For the tax-oriented apartment investor, the IRR has dropped by 55% and the present value of the after-tax cash flow has fallen 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 which has been under way since 1986, are as follows: values initially fell, new construction has dropped significantly, vacancy rates have started to decline, and rents are rising in real terms. Given the weak market conditions in many parts of the country, it may take another three to five years for this full adjustment in rents to occur. However, by the end of 1998, we expect vacancy rates to have fallen to very low levels, and rents to have risen by 3%–7% per year through the mid-1990s.

Institutional Funding of the Apartment Market. With the demise of tax-oriented investors in the apartment market, institutional investors are now able to compete on a level playing field for apartment projects. Pension funds and pension fund advisors are aware of the new economics in this market and are raising money to invest in apartments.

Exhibit 17
Comparison of Depreciation Deductions for Apartments*

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

*estimated depreciation schedules for a prototypical apartment complex

Exhibit 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
Rent Increase Required to Restore IRR	19.3
Value Decrease Required to Restore IRR	–16.2

Exhibit 19
Pension Fund Real Estate Investment Trends

Year	Equity R/E Inv., Top 200 (\$ billions)			% of Total Assets in Real Estate
	External	Internal	Total	
1982	12.8	6.0	18.8	4.0
1983	14.9	7.8	22.7	3.7
1984	15.7	8.3	24.0	3.7
1985	23.3	10.4	33.7	4.1
1986	26.2	13.1	39.3	3.9
1987	28.0	15.1	43.1	3.6
1988	35.3	16.0	51.3	4.3
1989	43.7	17.1	60.8	4.2
1990	50.1	20.8	70.9	5.0
1991	50.6	15.7	66.3	4.0
1992	49.3	14.1	63.4	3.5
1993	47.1	16.6	63.7	3.1
1994	51.3	16.5	67.8	3.3
1995	49.0	19.7	68.7	2.8

Source: RCG

Today's investors are demanding higher cash yields and lower leverage ratios than were typically available in this market prior to the elimination of tax incentives. In an effort to quantify the extent and potential of this source of equity or equity-like capital for the apartment market, a confidential survey of ten of the fifteen largest pensions advisors was undertaken by the author. Exhibit 19 shows the results of this survey.

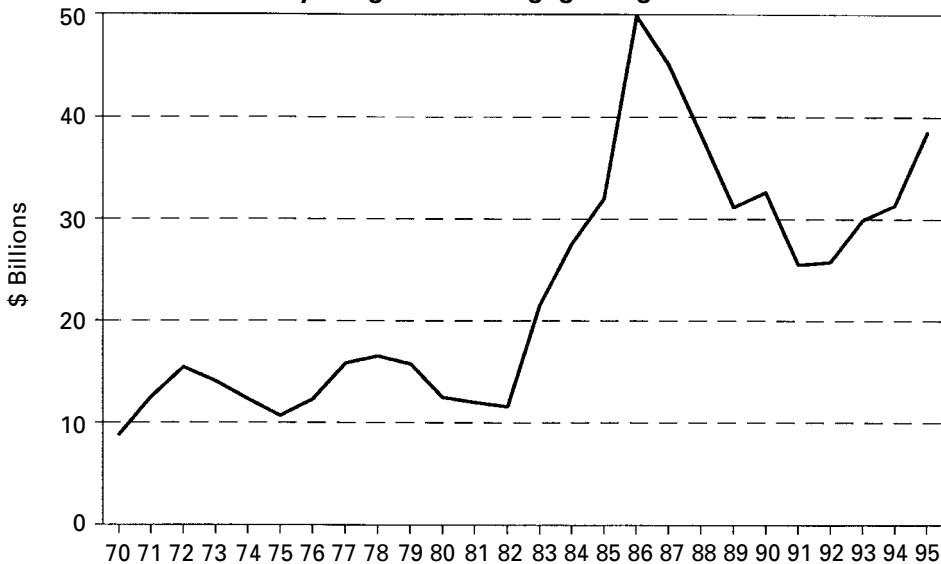
Ten of the largest pension fund advisors invested approximately \$700 million in equity or equity-like investment in apartments in 1987, with over \$1 billion invested in 1989. The expectations for the mid-1990s were even more robust with nearly \$1.5 billion of investments planned. However, this expected rise in new investment was constrained in the early 1990s by the credit crunch and the general retrenchment of pension funds' real estate investment plans. While this survey is far from definitive, it documents the fact that the institutional investor has discovered the apartment market in a major way.

If institutional investment in apartments of this magnitude does materialize, along with the REIT investment discussed later, it would still be insufficient to replace the private equity capital that was traditionally invested in apartments. Annual capital flows into the apartment sector from all sources were in the \$25 to \$40 billion range during the 1980s, suggesting that institutional flows and REIT flows of even \$10 billion per year would have no major negative impact on the sector.

Debt Financing Constraints

In the mid-1990s most lenders have tightened their real estate lending requirements. In addition to making less capital available for real estate, lenders are requiring significantly higher equity contributions by developers in new projects. These credit constraints have directly contributed to the slow recovery in the development of new projects which, in turn, will have the impact of strengthening occupancies in existing properties. For REITs

Exhibit 20
Multifamily Long-Term Mortgage Originations



Source: Department of Housing and Urban Development

and institutional investors, this shift in the availability of real estate credit created a new set of investment opportunities in the marketplace.

Focusing on the apartment market, the dollar volume of construction and permanent lending for multifamily projects fell to about \$25 billion in 1991 and 1992. By 1995, the volume of mortgage originations had risen again to nearly \$40 billion.

Mortgage Revenue Bonds. The Tax Reform Act of 1986 also dramatically altered the sources of debt financing for apartment projects. Prior to 1986, tax-exempt mortgage revenue bonds (MRBs) were a major source of long-term debt for the apartment market. At their peak, over \$12 billion annually of MRBs were issued by states and municipalities to support apartment projects. The Tax Reform Act greatly limited the powers of state and local governments to issue these bonds. By 1989 only \$2 billion of these bonds were issued. We expect less than \$2 billion to be issued per year in the mid-1990s.

Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA). In the mid-1980s, the role of mortgage revenue bond financing was supplemented by the aggressive lending of savings and loans. In the late 1980s, the savings and loans accounted for 40% to 50% of all construction and long-term multifamily lending.

However, FIRREA's new risk-based capital requirements have substantially reduced savings and loan commitments to the multifamily sector. Under these new risk-based capital rules, unsecuritized multifamily mortgage loans will require twice the capital of unsecuritized single-family loans. As a result, we expect savings and loan institutions to continue to cut back their apartment lending in favor of home mortgage lending. On the construction lending side, the FIRREA capital requirements will essentially prohibit any substantial lending by savings and loans.

It is also worth noting that commercial banks have substantially accelerated their

Exhibit 21
Long-Term Multifamily Mortgage Loan Originations, 1980–1995

Funding Source	1980	1985	1990	1991	1992	1993	1994	1995
Commercial Banks	10	14	34	44	46	61	63	59
Life Insurance	12	9	7	6	5	5	4	4
Savings Institutions	29	52	35	32	33	25	26	15
Mortgage Companies	13	9	14	8	8	3	0	16
Agencies*	34	17	10	10	7	6	6	4
Other	2	0	0	0	1	0	1	1
Total (%)	100	100	100	100	100	100	100	100

*federal, state and local

Sources: U.S. Department of Housing and Urban Development, RCG

Exhibit 22
Market Share of Multifamily Construction Lending, 1993

Lender	Share
Commercial Banks	80.9%
Savings Institutions	10.5
Agencies	7.5
Private Pension Plans	.9
Life Insurance Companies	.2

Sources: U.S. Department of Housing and Urban Development, RCG

mortgage loan activity, comprising 60% of multifamily loan originations in the 1993–1995 period (see Exhibit 21). As shown in Exhibit 22, the role of commercial banks in the construction lending market for multifamily development is even more aggressive. In 1993, commercial banks dominated the multifamily construction lending market by originating approximately 81% of all multifamily construction loans.

Savings and loans had been the only other significant construction lender to apartments, but their share fell dramatically from 24% in 1988 to 10.5% in 1993. In the early 1990s, the risk-based capital rules greatly reduced the availability of construction financing for apartments by commercial banks and savings and loans. The new rules require construction loans to be backed by six times the capital required for single-family lending.

Securitization of Apartment Mortgages

Multifamily mortgage securitization is increasing in popularity. As of early 1992, approximately \$30 billion, or only 9% of the outstanding multifamily debt, had been securitized, mainly by government agencies such as FNMA, GNMA and FHLMC. This compares with the 50% of outstanding single-family debt that was securitized. However, with the closing down of traditional lenders such as savings and loans, which at the peak

provided 49% of the financing for multifamily properties, and the improvement of multifamily market fundamentals, the securitization of multifamily mortgages has gathered momentum.

During the last two years, in addition to the governmental agencies, the biggest issuers of multifamily mortgage-backed securities have been the RTC, multifamily housing authorities, life insurance companies and other entities with large portfolios of mortgage loans looking to reduce their real estate holdings or turn them into less risky, more liquid assets. The securities are typically structured as pass-through securities, which allows the issuer to treat the transaction as a sale for accounting purposes. (The alternative is to structure the securities as bonds, which requires the issuer to treat the transaction as a financing.)

The RTC has been the most aggressive player in this area, with nine series of multifamily mortgage pass-through certificates issued since August 1991, two of which were done in 1992. The RTC's securities are different from the norm in several respects. First, they typically provide two forms of credit support. In addition to the subordination of debt, which has become the preferred method of credit support in securitized transactions, the RTC pools have a cash reserve that often amounts to 30% to 50% of the total issuance.

Successful securitization of multifamily mortgages depends on the issuer's ability to upgrade the credit rating of the securities relative to the underlying mortgages and make it unnecessary for investors in the securities to do due diligence on the underlying collateral. In this respect, the availability of ratings has greatly improved the liquidity of income property mortgages. For nonagency, publicly traded and most privately placed securities, an investment grade rating from one of the national rating agencies is crucial to success, although securities have been privately placed without ratings.

The rating determines the required level of credit support for the mortgage pool and the pricing of the securities, or, the amount that can be raised. To establish the credit rating, the rating agencies analyze the pool loan by loan, examining both the debt service coverage of each mortgage in the pool as well as the strength of the market in which the real estate asset is located.¹ Based on these two factors, a first estimate of the required credit support is made. For instance, if 20% credit support is required, the issuance could be divided between 80% senior debt and 20% subordinated debt. The first estimate of credit support is adjusted for several factors: geographical diversity of the portfolio, the concentration of loan size, the balloon concentration (spread of maturities and amounts maturing), basis risk (yield on mortgage security vs. underlying securities), and environmental risks (earthquakes, etc.). In our view, securitization will increasingly provide a viable exit strategy for multifamily investors.

Real Estate Investment Trusts (REITs)

Historically, real estate investors have depended on banks, savings and loan associations and insurance companies for their debt financing and on private capital markets for equity financing. The general retreat of these traditional sources of real estate financing has led many observers to believe that increased securitization of real estate equity and debt will fill a portion of this void. Instruments that can be traded in a secondary market provide liquidity (albeit at a price) to compensate for the "newly discovered" volatility in real estate values. This has resulted in a resurgence of the real estate investment trust

(REIT) vehicle.

A REIT is a vehicle that was established by Congress in the early 1960s to allow the small investor the opportunity to invest in quality real estate. A primary attribute of a REIT is to hold real estate for the long term as compared to a dealer in real estate. REITs by definition are passive owners of real estate, although they are generally allowed to perform their own property management and leasing. REITs, for the most part, are not subject to federal income taxes on their income, provided that certain organizational and operational tests are satisfied, as enumerated in sections 856 through 860 of the Internal Revenue Code of 1986, as amended (The Code). Some of the basic requirements are: (i) a REIT must have at least 100 stockholders; (ii) no five or fewer individuals may own more than 50% of the outstanding shares (commonly referred to as the 5/50 rule); (iii) at least 75% of the REIT's gross income must come from real estate and at least 75% of its assets must be invested in real estate; and (iv) the REIT must distribute at least 95% of its taxable income to its stockholders.

Today's REITs are much more conservative than their predecessors. Many REITs are raising substantial amounts of equity capital through initial and secondary public offerings. This capital is being invested in properties at spreads of 100 to 300 basis points. This further improves their cash flow and stock price, allowing additional access to the capital markets which, in turn, fuels further growth and increased shareholder value. This spread investing is illustrated by Exhibit 23, which shows the far more aggressive pricing offered in the public market, as compared to private real estate capital.

Various types of institutional investors, especially pension funds, are looking to the REIT vehicle, both public and private, to provide liquidity not easily available through direct ownership or commingled funds. In addition, REITs provide these institutions with the ability to easily diversify their portfolios by selecting those REITs whose investment characteristics match their own allocations for real estate. Those REITs that

Exhibit 23
Price to Cash Flow Ratio, Public vs. Private REITs

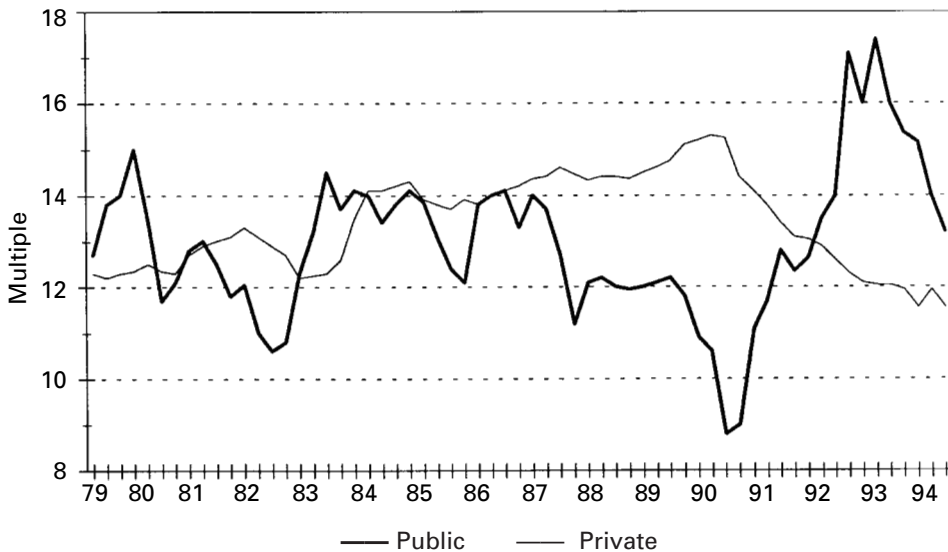
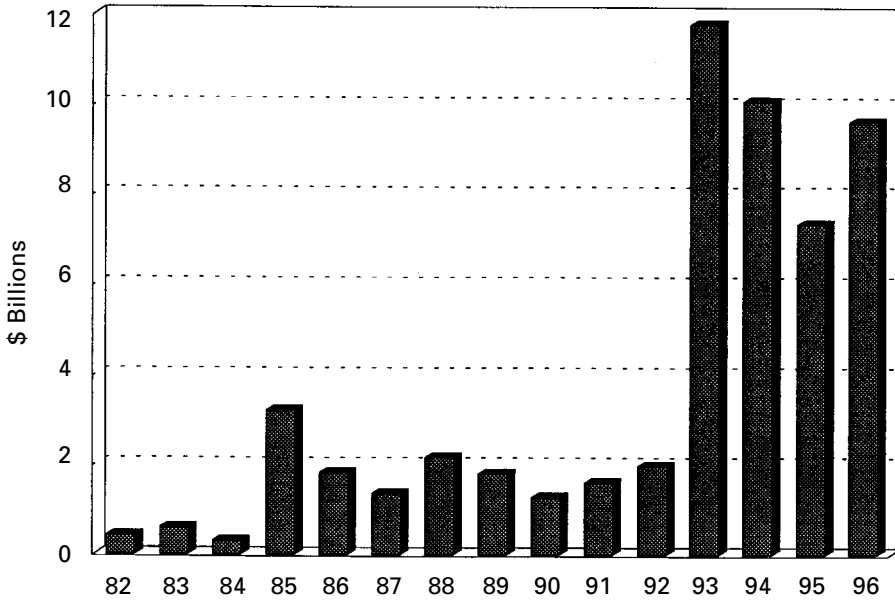


Exhibit 24
Equity REIT Offering Volume, 1982-1996f



Sources: Dean Witter, RCG

have attracted institutional investors usually have a significant amount of insider ownership, thus insuring a commonality of goals. Indeed, the REIT may truly be the investment vehicle of the 1990s. Exhibit 24 shows the total equity raised by REITs over the last decade. Of the \$65 billion of outstanding REIT shares approximately \$29 billion was utilized by the apartment sector.

Exhibit 25
Real Estate Returns by Property Type

	1989	1990	1992	1993	1994	1995	Annualized 2Q96
NCREIF							
Classic Index	1.5%	-6.1%	-4.3%	0.6%	6.8%	8.8%	10.3%
Property Types							
Apartments	5.9	-2.4	3.4	11.2	12.9	11.8	11.2
Office	-2.7	-11.7	-9.3	-6.4	4.6	7.1	11.2
Retail	6.2	-2.3	-1.7	4.6	5.2	5.9	5.7
R&D/Office	1.6	-6.6	-7.9	0.5	5.8	10.8	11.7
Warehouse	2.6	-2.0	-2.2	-1.7	9.1	13.5	12.1

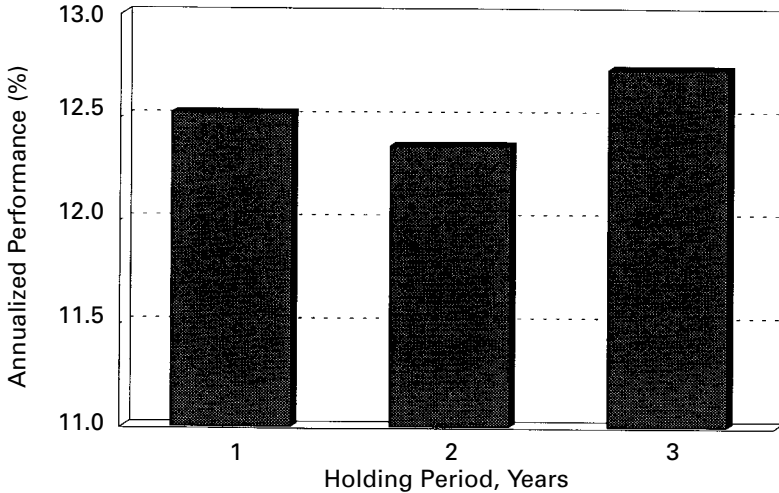
Source: NCREIF

Apartment Investment

Annualized Rates of Return

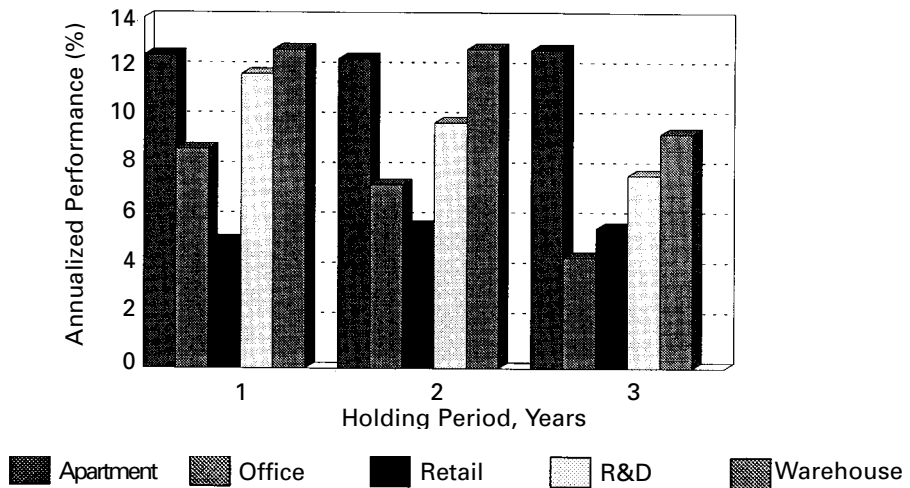
Total return on investment in the U.S. apartment market has been the strongest sector of commercial real estate in the last year (see Exhibit 26). As illustrated in Exhibits 25 and 27, the apartment market has performed well in comparison to other segments of the commercial real estate market. In fact, multifamily properties outperformed all other

Exhibit 26
Total Rates of Return, Apartments: 1–3 Year Holding Periods



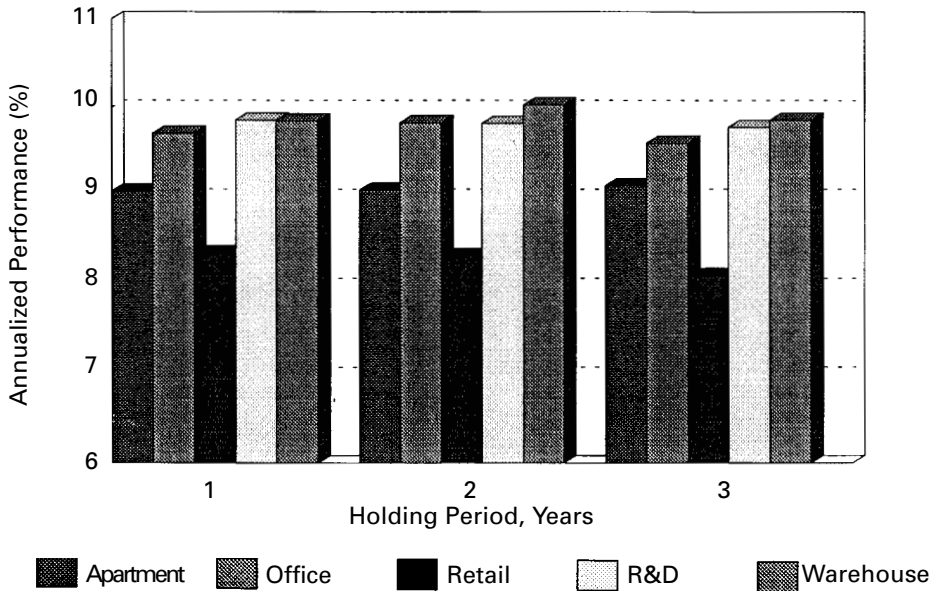
Source: NCREIF

Exhibit 27
Total Rates of Return, All Property Types: 1–3 Year Holding Periods



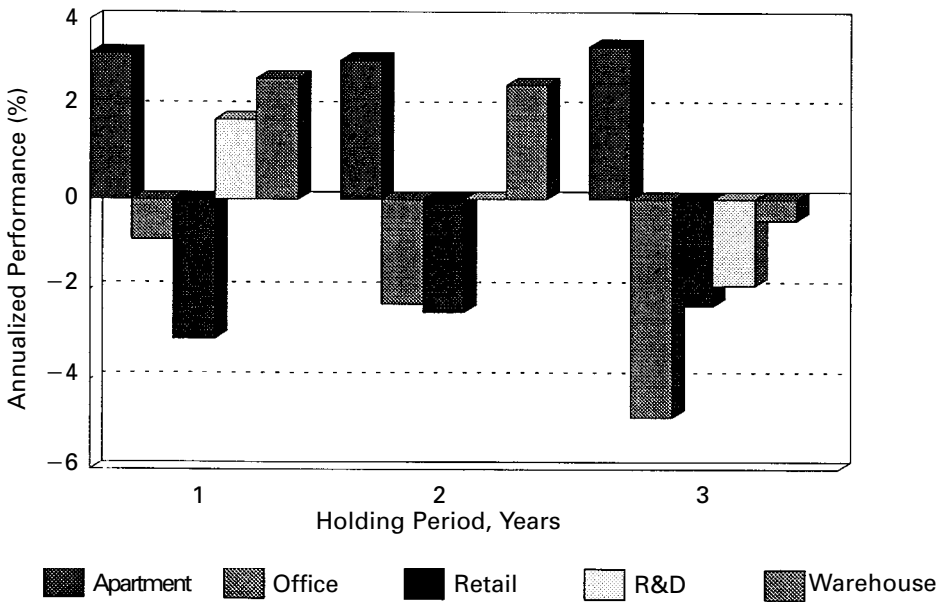
Source: NCREIF

Exhibit 28
Income Returns, All Property Types: 1-3 Year Holding Periods



Source: NCREIF

Exhibit 29
Appreciation Returns, All Property Types: 1-3 Year Holding Periods



Source: NCREIF

segments of the commercial real estate market during the last six quarters. Apartment returns rank first among the five commercial property types in terms of investor total rates of return over the last three years.

In order to more fully understand the pattern of overall returns for apartment properties, it is useful to segment that component of return associated with annual operating cash flow from that component of return associated with capital appreciation realized upon sale. As with most other commercial property types, apartment properties have provided investors with a relatively stable stream of cash flows over the past three years. Income returns in the multifamily sector have been around 9% during this time (see Exhibit 28).

Multifamily properties are set apart from the other real estate segments in that the increases in value have been greatest for this sector during the past three years. Apartment property values have risen about 3% per year (see Exhibit 29). We expect significant appreciation for apartment properties over the next several years due to positive demographic trends, the recent slowdown in multifamily construction, and the emergence of the aggressive REIT buyer.

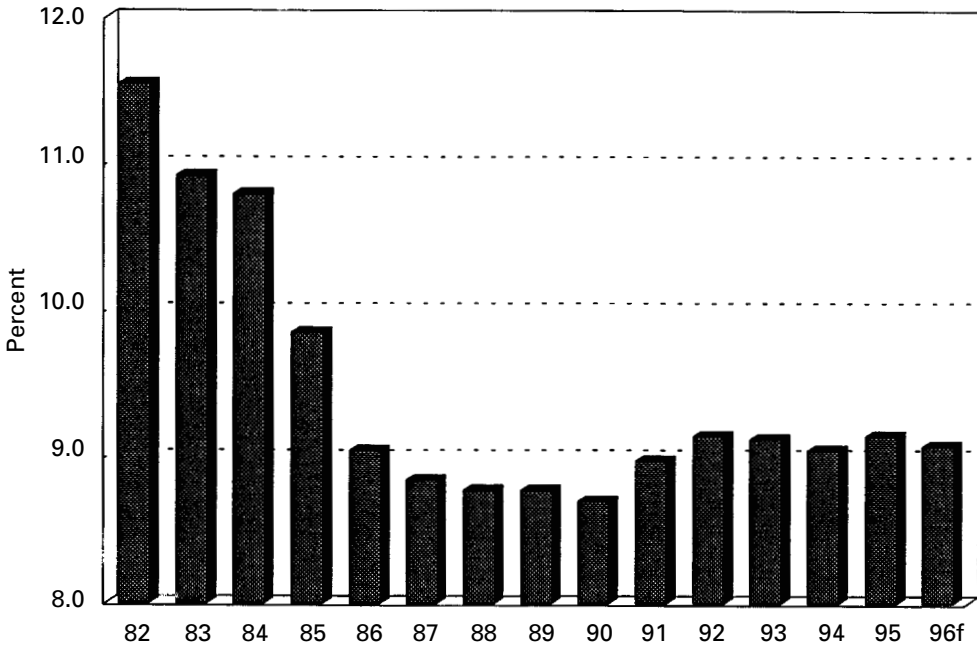
Capitalization Rates

As indicated in this report's discussion of investor returns based on capital appreciation, capitalization rates for apartment properties rose mildly in the late 1980s and early 1990s. Specifically, the average capitalization rate for the apartment sector went from 8.7% in 1987 to 9.2% in 1992, a rise of only fifty basis points (see Exhibit 30). In the past three months, cap rates have probably declined slightly because of the surge in REIT investment activity.

Regional data suggest variations of as much as 100 basis points in apartment property capitalization rates from one area of the country to another. Areas with the strongest recoveries from the national recession posted the lowest levels of apartment capitalization rates. In 1992, the highest prices paid for multifamily property were in the East South Central, West South Central, and Mountain regions with average capitalization rates of 8.9%, 9.0% and 9.0%, respectively. By contrast, slow growth areas with weaker demographic and economic profiles such as the West North Central and New England regions attracted the lowest prices for apartments with capitalization rates of 10.0% and 9.6%, respectively, during the same time period.

The strong investment performance of the multifamily sector relative to other sectors in the commercial real estate market has caused renewed interest among institutional investors. In fact, a recent survey of the nation's largest pension funds conducted by Real Estate Research Corporation found multifamily to be the preferred real estate investment target of 19% of those surveyed versus only 4% in the previous year. Another indication of the enhanced level of institutional interest in apartments is the increase in the number of apartment projects included in the Frank Russell Index from 50 in 1988 to 180 in 1992.

Exhibit 30
Capitalization Rates for Apartments, 1982–1996f



Sources: ACLI, RCG

Conclusion

The story for apartment property investment is compelling. In the early 1990s the real estate capital shortage emanating from the national banking crisis put severe limitations on the new supply of apartment buildings entering the marketplace. While the REITs instituted substantial new construction in 1995 and 1996, there are only a few areas that may be experiencing overbuilding. In addition, multifamily property is unique with respect to its short-term leasing structure, enabling opportunistic investors to more readily take advantage of rising rents in strong growth markets than is possible in other segments of commercial real estate. Apartments are generally less expensive and less time-consuming to improve and thus investors interested in value enhancement opportunities through physical rehabilitation and management upgrades have become increasingly aware of multifamily investment. Finally, America's housing stock continues to age while housing affordability has become ever more uncertain. The combination of the above elements has begun to influence the direction of institutional investment toward the multifamily property sector. As such, apartments should continue to be a positive place for investment in select markets with strong demographic and economic profiles over the next decade.

Note

¹The rating system varies by rating agency. For instance, Moody's Investor Service uses an actuarial model, which places more emphasis on local real estate market conditions. Standard & Poor's actuarial model relies more on national trends to forecast foreclosure frequency and loss severity. Duff & Phelps does not use an actuarial model; instead, it evaluates each loan separately.
