# THE DEMOGRAPHIC FACTOR AND URBAN DECLINE: A CROSS-NATIONAL COMPARISON

by

William C. Apgar, Jr.

Working Paper No. W84-2

Paper prepared for U.S. Department of Housing and Urban Development under Contract HC-5126. Revised March 1984.

ISSN No. 0275-2964.

# THE DEMOGRAPHIC FACTOR AND URBAN DECLINE: A CROSS-NATIONAL COMPARISON

Working Paper No. W84-2

William C. Apgar, Jr.

## ABSTRACT

This paper examines demographic changes in the 25 member nations of the Organization for Economic Cooperation and Development (OECD), focusing on the differential rates of population growth in rural and urban areas. In the 1950s and 1960s, the central portions of many large urban regions experienced population declines, but by the 1970s, population decline for an entire urban region was a common phenomenon. This paper relates urban population decline to the fertility and migration behavior of the baby-boom generation. Although the size and duration of the post-war baby-boom generation vary markedly from one country to the next, each OECD country experienced a surge of births in the period 1945 to 1950. Not only have baby-boom women continued the trend of declining fertility, but increasing numbers of the baby-boom generation are moving away from urban areas, thus reducing, and in many instances reversing, the historical pattern of sizable net population movements from rural to urban areas. This paper traces the implications of those trends for the likely growth of population and households in urban areas in the 1980s. The paper concludes with an assessment of the implications of demographic change and urban decline on the supply of labor in declining regions, the deterioration of central-city neighborhoods, and the likely future trends in the cost of housing in urban areas.

Joint Center for Urban Studies of MIT and Harvard University, 1984.

## INTRODUCTION

In the decade of the 1980s, the demographic factor is likely to have a profound effect on the pattern of urban growth and decline in the world's advanced economies. This paper examines demographic changes in the 25 member nations of the Organization for Economic Cooperation and Development (OECD), focusing on the differential rates of population growth in urban and rural areas and changes in the age structure of population. While it is impossible to force the diverse demographic situations of the 25 OECD countries into a single mold, the paper does point to several broad areas of uniformity of past demographic trends and future demographic prospects. Each OECD country experienced a surge of births in the period 1945 to 1950, although the size and duration of the post-war baby boom vary markedly from one country to the next. In the United States and in many other OECD countries, increasing numbers of the baby-boom generation are moving away from urban areas, reducing, and in many instances reversing, the historical pattern of sizable net population movements from rural to urban areas. This paper traces the implication of these trends on the likely growth of population and households in urban areas in the 1980s. The paper concludes with some brief observations about the demographic factor and emerging public policy issues.[1]

## THE DECLINE OF URBAN POPULATIONS

Until the 1970s, population continued to grow in all major metropolitan areas of the industrial world. Improvements in transportation technologies, growth in household incomes, and changing employment

location patterns were combining to reduce the rate of population growth in central-city areas in favor of more vigorous growth in the suburbs. Despite this tendency for decentralization within large metropolitan areas, urban populations as a whole grew. Indeed, the pattern was so uniform that Colin Clark posited what he termed "the law of concentration":[2]

> A general description of what is happening in the modern industrial world can be given in one sentence, vast though its consequences may be. The macro-location of industry and population tends towards an ever-increasing concentration in a limited number of areas; their micro-location, on the other hand, towards an increasing diffusion, or 'sprawl'.

Although the decentralization of population within metropolitan areas is still occurring, many major urban areas in the OECD countries have begun to experience absolute population losses: By the early 1970s, nine of the twenty-five largest metropolitan areas in the United States were losing population. These patterns were not limited solely to the United States. Recent data suggest that populations in both the central-city and metropolitan areas of Windsor, Copenhagen, Dublin, Amsterdam, The Hague, Bergen, London, and Manchester were also declining by the mid-1970s.[3]

The slowdown of urban population growth and the decline of metropolitan area-wide populations result from changes in both the rate of natural increases and migration patterns. In the 1970s, many OECD countries witnessed a substantial reduction in birthrates, as well as the cessation--and in some cases, the reversal--of long-term trends of household movement from small towns and rural areas to larger metropolitan centers. This section briefly reviews past trends and likely future prospects for urban population growth in OECD countries.

## Demographic Trends, 1950-1980

From a base of 582 million in 1950, the combined population of the 25 OECD countries increased to 738 million in 1970, but grew more slowly thereafter to 801 million in 1980.[4] As Table 1 indicates, the crude birthrate dropped steadily over the period from 2.12 to 1.54 per 100 population. Despite declining crude death rates, the annual average natural population growth rate (births less deaths) fell by nearly 50 percent, from an annual rate of 1.11 percent for the 1950s to 0.63 percent in the late 1970s. Although in-migration has never accounted for more than 20 percent of total population growth in OECD countries, the sharp fall in net in-migration in the late 1970s further contributed to the decline in the rate of total population growth.

Together, declining birth and death rates and the marked slowdown of net in-migration have substantally increased the share of the total population that is aged 65 or older. As Table 2 shows, despite the decrease in total population growth, the rate of growth of population aged 65 or older remained high, holding at 23.3 percent for the decade 1970 to 1980. In 1950 only 8.6 percent of the population was 65 years of age or older; by 1980, however, this number jumped to 11.4 percent.

Although growth of urban areas has continued to be faster than that of rural areas, the data presented in Table 2 suggest that the divergence between the two has narrowed. While the urban population increased by 23.7 percent in the 1960s, the growth rate in the 1970s was only 11.6 percent. The decade rate of growth of rural population increased 2.5 percent for the 1970s, after declining by 6.7 percent in the 1960s.

Table 1

SOURCE OF GROWTH FOR TOTAL OECD POPULATION, 1950 TO 1980

| | Average Annual Rates Per 100 Population | | | | |
|---|---|---|---|---|---|
| Period | Births | Deaths | Net Natural Increase | Net In-Migration | Total Population Increase |
| 1950 to 1960 | 2.12 | 1.02 | 1.11 | .12 | 1.23 |
| 1960 to 1970 | 1.85 | .96 | .88 | .20 | 1.08 |
| 1970 to 1975 | 1.68 | .95 | .73 | .18 | .91 |
| 1975 to 1980 | 1.54 | .91 | .63 | .06 | .69 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

Table 2

PERCENT DECADE CHANGE IN POPULATION BY AGE AND PLACE OF RESIDENCE, TOTAL NUMBER OF HOUSEHOLDS, AND PERSONS PER HOUSEHOLD, FOR ALL OECD COUNTRIES, 1950 TO 1980

| | Percent Change for Decade | | |
|---|---|---|---|
| | 1950-60 | 1960-70 | 1970-80 |
| **Population by Age:** | | | |
| 0 to 14 | 16.9% | 4.7% | -4.6% |
| 15 to 64 | 10.2 | 12.5 | 11.6 |
| 65 or older | 25.5 | 24.9 | 23.3 |
| Total | 13.3 | 11.5 | 8.5 |
| **Population by Place of Residence:** | | | |
| Urban | N.A. | 23.7 | 11.6 |
| Rural | N.A. | -6.7 | 2.5 |
| Total | 13.3 | 11.5 | 8.5 |
| **Number of Households:** | N.A. | 20.4 | 20.0 |
| **Persons per Household:** | N.A. | -7.4 | -9.6 |

Sources: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979). Growth rate 1970 to 1980 based on data presented in United Nations publication Monthly Bulletin of Statistics (September 1983). Household statistics from United Nations, Compendium of Housing Statistics (New York, 1980).

As the average number of persons per household declined over the period, the growth rate of households remained high: From a level of 3.65 persons in 1960, average household size fell steadily to 3.05 in 1980. Absent this decline in average household size, the number of households in OECD countries would have increased by only 38 million, from 181 million households in 1960 to an estimated 219 million in 1980. Since the total in 1980 is estimated at 261 million households, the decline in average household size more than doubled the growth rate of households during the period.

## Variations Among OECD Countries

Although the general patterns outlined above are common to much of the world, the crude birthrates presented in Table 3 demonstrate that significant country-to-country variation remains.[5] Although crude birthrates diminished for most OECD countries between 1950 and 1960, birthrates in the United States remained relatively high during this period, but then dropped sharply. While there has been some upturn in birthrates since 1975, several factors suggest that the United States will never return to the high rates of births recorded for the 1950s and 1960s. Improvements in living standards, changes in the role of women in the economy, heightened concern for population control, and the increased availability of contraceptives all support the contention that the decline in the United States birthrate will be a lasting phenomenon.[6]

The general trend toward declining crude birthrates is common to the vast majority of OECD countries. In every OECD country except Ireland, the crude birthrate in 1980 is below the 1950 rate. Except for the somewhat erratic patterns for Iceland, Ireland, and Japan, the

Table 3

CRUDE BIRTH RATES FOR INDIVIDUAL OECD COUNTRIES AND FOUR GEOGRAPHICAL DIVISIONS, 1950 TO 1980

| Country | Number of Births Per 100 Population | | | | |
|---|---|---|---|---|---|
| | 1950 | 1960 | 1970 | 1975 | 1980 |
| **Northern European** | | | | | |
| Denmark | 1.87 | 1.66 | 1.44 | 1.42 | 1.12 |
| Finland | 2.45 | 1.85 | 1.41 | 1.42 | 1.31 |
| Iceland | 2.71 | 2.79 | 1.96 | 2.02 | 2.20 |
| Ireland | 2.16 | 2.15 | 2.17 | 2.12 | 2.18 |
| Norway | 1.90 | 1.73 | 1.68 | 1.41 | 1.25 |
| Sweden | 1.64 | 1.36 | 1.37 | 1.26 | 1.17 |
| U.K. | 1.62 | 1.75 | 1.63 | 1.25 | 1.35 |
| Total | 1.87 | 1.84 | 1.65 | 1.43 | 1.44 |
| **Western Europe** | | | | | |
| Austria | 1.56 | 1.79 | 1.51 | 1.25 | 1.20 |
| Belgium | 1.66 | 1.70 | 1.46 | 1.22 | 1.27 |
| France | 2.05 | 1.79 | 1.67 | 1.41 | 1.48 |
| Germany | 1.65 | 1.75 | 1.32 | .97 | 1.00 |
| Luxembourg | 1.39 | 1.59 | 1.29 | 1.12 | 1.15 |
| Netherlands | 2.27 | 2.08 | 1.83 | 1.30 | 1.28 |
| Switzerland | 1.80 | 1.76 | 1.60 | 1.23 | 1.19 |
| Total | 1.81 | 1.77 | 1.51 | 1.20 | 1.23 |
| **Mediterranean** | | | | | |
| Greece | 2.00 | 1.89 | 1.65 | 1.57 | 1.59 |
| Italy | 1.94 | 1.84 | 1.71 | 1.48 | 1.12 |
| Portugal | 2.43 | 2.36 | 1.92 | 1.91 | 1.63 |
| Spain | 2.00 | 2.15 | 1.94 | 1.91 | 1.51 |
| Turkey | 4.40 | 4.51 | 4.04 | 3.47 | 3.22 |
| Yugoslavia | 3.02 | 2.35 | 1.78 | 1.82 | 1.70 |
| Total | 2.63 | 2.52 | 2.17 | 2.03 | 1.80 |
| **Other** | | | | | |
| Australia | 2.33 | 2.24 | 2.06 | 1.69 | 1.54 |
| Canada | 2.71 | 2.68 | 1.74 | 1.68 | 1.55 |
| Japan | 2.82 | 1.72 | 1.93 | 1.72 | 1.37 |
| New Zealand | 2.59 | 2.65 | 2.19 | 1.85 | 1.61 |
| U.S. | 2.40 | 2.38 | 1.82 | 1.48 | 1.62 |
| Total | 2.54 | 2.25 | 1.89 | 1.60 | 1.59 |
| All OECD | 2.28 | 1.99 | 1.72 | 1.58 | 1.53 |

Source: OECD, Demographic Trends: 1950 to 1990.

decline has been most pronounced since 1960. It is clear that the decline in births is not simply the result of a shift in the share of women of childbearing age: For the U.S. and the other OECD countries, age-specific fertility rates have declined steadily since 1960, reflecting the results of various attitudinal studies that pointed to steady decreases in the desired number of children.[7] Although the growth of women of child-bearing age has generated recent upturns in births in the United States, the United Kingdom, Belgium, France, Germany, and Luxembourg, the crude birthrates as well as age-specific birthrates remain at or near record lows for each of the countries identified in Table 3.

For many OECD countries, declining birthrates coincide with declining rates of net in-migration. Historically, foreign in-migration (including so-called "guest workers") has contributed substantially to national population growth in selected OECD countries. Without positive net in-migration, Germany would have lost population during the period 1970 to 1975, as would Austria and Belgium.[8] By the late 1970s, for Australia, Canada, Germany, Greece, Italy, the Netherlands, Portugal, Sweden, and the United States, net in-migration augmented natural population growth; only in Italy, Greece, and Portugal was the rate of in-migration for the late 1970s high relative to previous periods. Indeed, net in-migration in Germany fell from an annual average of 305,000 during the 1960s to an average of less than 70,000 between 1975 to 1980. For France, the decline was equally pronounced, with in-migration turning slightly negative in the period 1975 to 1980, after averaging in excess of 200,000 net in-migrants during the 1960s.[9]

As the statistics in Table 4 show, changing patterns of natural population growth and international migration between 1960 and 1980 combined to slow total population growth in 21 of the 25 OECD countries. Only Greece, Ireland, Japan, and Portugal experienced increasing rates of population growth. For Japan and Ireland this accelerated growth is linked to increased natural population growth. For Greece and Portugal, the growth in the 1970s was fueled by relatively high rates of net in-migration. Despite these exceptions, the decade growth in population for the Northern European countries fell to 2.0 percent, and to 3.7 percent for Western Europe. In both instances the decade rate of population growth was down more than 60 percent from the 1960s rate. The aggregate population growth rate for the Mediterranean countries increased slightly, although within the group the population growth rate for Italy and Yugoslavia fell by more than 10 percent.

## Urban Decline and Rural Revival in OECD Countries

As illustrated in Table 4, in many OECD countries the decline in the rate of total population growth was associated with a sharp decline in urban population growth. At the same time, for many OECD countries, the rate of rural population growth was accelerating. As noted earlier, the aggregate rate of growth of rural population for OECD countries moved from a 6.7 percent loss in the 1960s to a 2.5 percent gain in the 1970s.

While the increase in the growth of rural population is most pronounced in the United States, this trend appears in other OECD countries as well. As a relatively recent phenomenon, however, the

Table 4

PERCENT DECADE CHANGE IN TOTAL, URBAN, AND RURAL POPULATION FOR INDIVIDUAL OECD COUNTRIES AND FOUR GEOGRAPHICAL DIVISIONS, 1960 TO 1980

| | Percent Change in Population for Decade | | | | | |
|---|---|---|---|---|---|---|
| | Total | | Urban | | Rural | |
| | 1960-70 | 1970-80 | 1960-70 | 1970-80 | 1960-70 | 1970-80 |
| **Northern European** | | | | | | |
| Denmark | 7.6% | 3.9% | 16.1% | 10.3% | -15.6% | -20.4% |
| Finland | 4.1 | 3.7 | 38.2 | 21.3 | -17.2 | -14.6 |
| Iceland | 13.9 | 12.2 | -- | -- | -- | -- |
| Ireland | 4.2 | 15.3 | 20.0 | 16.1 | -9.1 | 14.3 |
| Norway | 8.1 | 5.4 | 42.6 | 11.0 | -8.2 | 1.3 |
| Sweden | 7.5 | 3.4 | 9.0 | 6.7 | 1.4 | -11.3 |
| U.K. | 5.6 | 0.8 | 3.3 | -0.5 | 13.9 | 5.1 |
| Total | 5.9% | 2.0% | 7.1% | 2.6% | 2.9% | 0.8% |
| **Western European** | | | | | | |
| Austria | 4.8% | 1.6% | 25.3% | 1.8% | -11.1% | 1.4% |
| Belgium | 5.5 | 2.2 | 8.1 | 11.7 | 3.1 | -6.9 |
| France | 11.1 | 5.8 | 16.3 | 11.2 | 0.7 | -6.9 |
| Germany | 9.1 | 1.5 | 8.6 | 1.0 | 10.0 | 2.3 |
| Luxembourg | 6.3 | 5.9 | 21.1 | 8.7 | -15.4 | 0.0 |
| Netherlands | 13.5 | 8.4 | 8.0 | 5.5 | 35.0 | 17.7 |
| Switzerland | 15.5 | 1.9 | -- | -- | -- | -- |
| Total | 9.9% | 3.7% | 12.0% | 6.1% | 5.8% | -0.5% |
| **Mediterranean** | | | | | | |
| Greece | 5.5% | 9.7% | 12.6% | 28.7% | -12.4% | -13.7% |
| Italy | 6.9 | 6.3 | 17.4 | 10.6 | -2.9 | 1.5 |
| Portugal | -0.3 | 9.5 | 15.4 | 6.0 | -4.8 | 10.7 |
| Spain | 10.9 | 10.8 | 28.9 | 26.6 | -12.6 | -19.7 |
| Turkey | 28.4 | 25.8 | 74.2 | 69.4 | 11.8 | 1.2 |
| Yugoslavia | 10.7 | 9.2 | 51.1 | 9.5 | -5.3 | 9.0 |
| Total | 11.8% | 12.3% | 31.2% | 25.6% | -2.0% | -0.4% |
| **Other** | | | | | | |
| Australia | 21.7% | 17.4% | 26.9% | 13.5% | -4.8% | 44.4% |
| Canada | 19.0 | 12.4 | 31.6 | 9.3 | -9.7 | 22.6 |
| Japan | 11.2 | 11.6 | 26.7 | 17.9 | -15.5 | -4.8 |
| New Zealand | 18.5 | 10.3 | 26.5 | 10.3 | -9.4 | 10.4 |
| U.S. | 13.4 | 8.9 | 33.4 | 8.2 | -19.9 | 11.6 |
| Total | 13.4% | 10.3% | 30.9% | 11.4% | -17.7% | 7.5% |
| All OECD | 11.5% | 8.5% | 23.7% | 11.6% | -6.7% | 2.5% |

Sources: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979). Growth rate 1970 to 1980 based on data presented in United Nations publication Monthly Bulletin of Statistics (September 1983). Urban-rural growth rates derived from OECD, Ad Hoc Group on Urban Problems, The Causes and Characteristics of Urban Growth (Paris, 1981). (Data on urban and rural population growth not available for Iceland and Switzerland.)

causes of this reversal are still the subject of considerable debate. For example, having exported millions of individuals over the years, many marginal agricultural areas in the United States had few people left to move to urban areas. During the 1970s, other rural areas with prime agricultural land or rich natural resources experienced something of a revival as world-wide demand for food, energy, and other resources increased. Continual improvement in transportation and telecommunications also helped the growth of non-metropolitan areas. Many manufacturing establishments, for example, selected strategically located non-metropolitan areas in order to service a wider geographic area. Moreover, living cost and quality of life factors encouraged many older Americans to retire to non-metropolitan areas, thus adding to the growth of the service economies in these areas.[10]

The change from rural population decline to rural population gain occurred in eleven OECD countries between 1960 and 1980. As Table 4 shows, in the 1970s, 15 of the 23 OECD countries for which data are available gained in rural population; in eight instances (Australia, Canada, Germany, the Netherlands, New Zealand, Portugal, the U.K., and the U.S.) rural population growth rates exceeded total growth rates. During the previous decade, 16 of these same 23 countries lost rural population, and the rural share grew only in the U.K., Germany, and the Netherlands.

These results support the widely discussed, but frequently criticized, findings reported by Vining and Kontuly in their study on population dispersal.[11] Using annual data from the 1960s to early 1970s, Vining and Kontuly demonstrate that at least ten OECD countries

(Japan, Sweden, Italy, Norway, Denmark, New Zealand, Belgium, France, Germany, and the Netherlands) exhibit either a reversal or drastic reduction in the flow of rural to urban migration. Finland and Spain, in contrast, have yet to show a decline in the rate of movement of persons into their major urban areas. For countries such as Turkey that have high natural rates of total and rural population growth, rural to urban migration is also likely to persist for some time.

Table 4 demonstrates that the pattern of declining total population growth rates and the switching from rural population decline to rural population growth is not just a United States phenomenon. As a result of the stabilization or growth of rural population and declining total national population, the urban population for Northern Europe grew only 2.6 percent for the decade 1970 to 1980, while the growth for Western Europe was 6.1 percent. Though Turkey, Greece, and Spain experienced rapid urban growth during the 1970s, urban growth slowed noticeably in the Mediterranean countries of Italy, Portugal, and Yugoslavia, as well as in Australia, Canada, Japan, New Zealand, and the United States. To place the urban growth of the 1970s into perspective, it should be noted that during the 1960s 11 OECD countries had decade rates of urban population growth in excess of 25 percent. By the 1970s, only Greece, Turkey, and Spain exhibited rates of urban growth in excess of 25 percent. Alternatively, in the 1970s half of the OECD countries had decade rates of urban population growth of less than 10.4 percent. This implies that in the majority of cases in the 1970s, annual average urban population growth fell to less than 1.0 percent.

## CHANGES IN THE COMPOSITION OF POPULATION AND HOUSEHOLDS

Changes in the composition of the population--as opposed to the aggregate rate of population growth--often are an important determinant of metropolitan growth or decline. In the U.S. and other OECD countries, the composition of the population is changing as a result of the aging of the post-World War II baby-boom generation and the increased life expectancy of elderly individuals. Moreover, a growing number of people are choosing to live alone, a trend that combines with marked declines in fertility to produce a substantial decrease in the average size of families or households. As a result, even metropolitan regions with declining total population could still experience substantial absolute growth in the number of people of certain ages, or in the number of households of specific types or sizes.

In the United States, the birthrate hit record lows during the Great Depression, but soared in the period immediately following World War II.[12] The result is an exceptionally large cohort of individuals born between 1945 and 1965. This group flooded public schools in the 1950s and 1960s, reached young adulthood in the 1970s and 1980s, and are now beginning to move into their middle years. The surge of population born between 1945 and 1965 was followed by an equally dramatic decline. During the period 1970-1975, for example, the number of Americans aged 20-24 increased by over 2 million; between 1980 and 1985, the U.S. will experience a decrease of nearly one-half million persons of this age.

Because the baby-boom generation is so large, the choices it makes will be decisive to the future of U.S. urban areas. Not only has there been a dramatic drop in fertility rates in the United States,

but the baby-boom generation also differs from previous generations in terms of its tendency to remain single, delay the age of first marriage, and terminate marriage with divorce. The result has been a rapid drop in average household size. During the decade of the 1970s, the U.S. population grew by 8.9 percent; but as a result of the decline in the average number of persons per household, the number of households increased by nearly 20 percent. As a result, many metropolitan areas that lost population in the 1970s continued to exhibit high rates of growth in the number of households.

Each of the changes in the population composition observed in the U.S. has its parallel in other OECD countries. To simplify discussion of the statistical material, however, the following section focuses only on the situation in the six largest OECD countries, as well as one nation from each geographic division. The ten countries together account for 81 percent of the total 1980 OECD population and provide a broad cross-section of countries defined according to location, stage of economic development, and pattern of demographic development.

In preparing the analysis of population and household composition, an effort was made to develop procedures to categorize countries according to one or more groups, and present analysis of the grouped data. Following Simon Kuznet's classic, Modern Economic Growth, there have been numerous efforts to identify underlying patterns of urban and regional development.[13] In this spirit, a recent OECD document on urban growth focused on the distinctions between the so-called Mediterranean Group and other OECD countries. The report notes that, unlike other OECD countries which industrialized early and where only modest urban growth is likely in the future, Mediterranean countries

are at an earlier stage of economic development and substantial future urban growth is likely.[14]

While a grouping system may highlight some aspects of urban and regional growth and development, it can obscure others. This is particularly true in the analysis of the composition of population and households. In part, the age composition of the population at any point in time is a mirror of past patterns of births, deaths, and migration. There are some common patterns, but much of the detail of these demographic histories differs from one OECD country to the next. Rather than obscure these differences with aggregation, the remaining sections of this report focus on ten representative countries. Comparable statistics for the remaining fifteen countries are presented in a series of appendices. As a result, individuals interested in the experience of a particular country may wish to consult this material as well.

## Differences in Age Composition of the Population

As a group, OECD countries exhibit important differences in the age structure of their populations. Composition of the population under 35 years of age in 1980 varies because of differences in the timing and the extent of the post-World War II baby boom. The size and characteristics of the older age groups vary depending on the impact of World War I on the number of people born in the period 1915 to 1925, as well as broad changes in the patterns of international migration, especially movements from Europe to the U.S., Canada, Australia, and New Zealand.

The index presented in Table 5 shows the average annual number of births in 5 year periods between 1945 and 1980 relative to the average

Table 5

AVERAGE ANNUAL NUMBER OF BIRTHS 1945 TO 1980 AS A PERCENTAGE OF AVERAGE ANNUAL NUMBER OF BIRTHS 1925 TO 1944

| Country | Year Cohort Born | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1945-50 | 1950-55 | 1955-60 | 1960-65 | 1965-70 | 1970-75 | 1975-80 |
| Australia | 143 | 160 | 176 | 189 | 192 | 206 | 180 |
| France | 133 | 132 | 135 | 142 | 141 | 140 | 123 |
| Germany | 89 | 97 | 112 | 129 | 124 | 87 | 74 |
| Italy | 109 | 99 | 104 | 113 | 113 | 108 | 101 |
| Japan | 130 | 110 | 91 | 95 | 102 | 115 | 117 |
| Netherlands | 143 | 132 | 132 | 141 | 141 | 122 | 98 |
| Sweden | 130 | 113 | 108 | 117 | 122 | 116 | 115 |
| Turkey | 134 | 166 | 184 | 226 | 226 | 257 | 251 |
| U.K. | 131 | 112 | 120 | 138 | 133 | 115 | 93 |
| U.S. | 137 | 155 | 170 | 165 | 143 | 133 | 134 |
| All OECD | 125 | 126 | 132 | 138 | 132 | 127 | 124 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

annual number of births for the period 1925 to 1945. Following World War II, every OECD country with the exception of Germany and Luxembourg experienced a marked increase in the annual number of births. In Australia, the annual average number of births for the period 1945 to 1950 was 43 percent larger than the annual average number of births recorded during the period 1925 to 1945. While many countries shared in the initial post-war upturn in the number of births, as indicated in Table 5, the characteristics of this baby boom vary from one country to the next. For Italy, Japan, Sweden, and the U.K., the surge of births during the period 1945 to 1950 slowed substantially during the 10 years 1950 to 1960. In Australia, Turkey, and the U.S., the baby boom grew in magnitude throughout the 1950s. The Netherlands represents somewhat of an intermediate case. After a sharp upturn immediately following the war, the number of births fell off slightly in the Netherlands, but remained high and rose again from 1960 to 1965.

Table 5 also illustrates differences in the impacts of the so-called baby bust. In Australia, France, the Netherlands, and the United States, for example, the large and relatively continuous baby boom eventually diminished. This contrasts sharply with those countries experiencing a less intense post-war baby boom. For Japan, the baby bust occurred in the late 1950s and early 1960s, although a new surge in total births began in 1965. Sweden, and to some extent the United Kingdom, also exhibit this pattern of falling then rising births. Germany and Italy also experienced an increasing number of births, a feature reflecting in part the absence of a birth surge immediately following World War II, as well as the tendency of some countries to post a second birth surge in the middle to late 1960s.

The differential initial intensity and duration of the post-war baby boom have dramatic implications for the age composition of the population in various OECD countries. Total population growth in each country is low relative to historical experience, but Table 6 shows that growth rates of particular age groups vary widely. During the period 1980 to 1990, for example, the population aged 25 to 44 in the U.S. will increase more than 25 percent. By comparison, the population aged 45 to 64 will increase only slightly, while the number aged 15 to 24 will actually decline. During the 1980s, Australia, France, and the U.K. will also experience a similar pattern of stable or declining population aged 15 to 24 and 45 to 64. The absence of a sustained post-war birth surge is apparent in Japan, Germany, and Sweden where the population aged 25 to 44 is expected to remain virtually unchanged for the decade. Indeed, in the 1980s, Japan will experience sharp increases in its population aged 45 to 64 and 15 to 24, a pattern exactly opposite that occurring in the United States.

Considerable variation also exists in the extent of growth of the elderly population in OECD countries. Following decades of relatively high rates of growth of population aged 65 or older, the decade of the 1980s represents something of a departure. After increasing 23.3 percent in the 1970s, the rate of growth of population aged 65 or older for all OECD countries is projected to fall to 13.2 percent in the 1980s. As Table 7 indicates, the growth of the elderly population will remain strong in the United States, Australia, Japan, and to a lesser extent the Netherlands and Turkey. More striking, however, is the pattern in France, Germany, Italy, Sweden, and the United Kingdom, where the rate of growth of the elderly population is decreasing

Table 6

AGE-SPECIFIC DECADE RATES OF GROWTH FOR
POPULATION AGED 15 TO 64 IN SELECTED OECD COUNTRIES

| Country | Decade Rate of Growth of Population | | | | | |
|---|---|---|---|---|---|---|
| | Aged 15 to 24 | | Aged 25 to 44 | | Aged 45 to 64 | |
| | 1970-80 | 1980-90 | 1970-80 | 1980-90 | 1970-80 | 1980-90 |
| Australia | 15.6% | 0.3% | 28.9% | 18.3% | 12.4% | 6.9% |
| France | 2.5 | -3.2 | 13.1 | 14.7 | 6.5 | 4.1 |
| Germany | 24.9 | -18.7 | -1.2 | 1.1 | -2.1 | 15.3 |
| Italy | 8.0 | 1.8 | 1.1 | 5.3 | 8.0 | 7.4 |
| Japan | -19.6 | 16.8 | 12.4 | -4.8 | 33.7 | 22.8 |
| Netherlands | 4.0 | -7.5 | 23.7 | 15.3 | 7.8 | 9.2 |
| Sweden | -8.6 | 3.7 | 13.8 | 0.7 | -8.9 | -1.3 |
| Turkey | 41.3 | 19.8 | 30.4 | 41.2 | 26.8 | 28.9 |
| U.K. | 9.0 | -4.7 | 8.8 | 12.2 | -7.1 | -4.1 |
| U.S. | 18.2 | -17.0 | 26.6 | 29.3 | 4.4 | 4.4 |
| All OECD | 9.8 | -4.6 | 14.7 | 15.7 | 9.1 | 9.1 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

Table 7

AGE-SPECIFIC DECADE RATES OF GROWTH FOR POPULATION AGED 65 YEARS OR OLDER IN SELECTED OECD COUNTRIES

| Country | Decade Rate of Growth of Population | | | | | |
|---|---|---|---|---|---|---|
| | Aged 65 to 79 | | Aged 80 or Older | | Total 65 or Older | |
| | 1970-80 | 1980-90 | 1970-80 | 1980-90 | 1970-80 | 1980-90 |
| Australia | 32.3% | 20.1% | 30.9% | 27.0% | 32.1% | 21.3% |
| France | 10.3 | -6.6 | 30.5 | 23.3 | 13.9 | -0.5 |
| Germany | 13.0 | -16.1 | 32.3 | 25.7 | 15.8 | -9.3 |
| Italy | 29.6 | -0.4 | 23.1 | 31.0 | 28.5 | 4.7 |
| Japan | 35.5 | 27.3 | 68.4 | 67.4 | 39.8 | 33.5 |
| Netherlands | 17.9 | 10.3 | 33.3 | 26.7 | 20.5 | 13.4 |
| Sweden | 19.1 | 3.6 | 37.4 | 31.1 | 22.2 | 8.9 |
| Turkey | 38.5 | 12.6 | 0.0 | 33.2 | 32.3 | 15.0 |
| U.K. | 14.4 | -2.2 | 17.4 | 25.8 | 14.9 | 2.7 |
| U.S. | 22.8 | 19.2 | 37.3 | 45.4 | 25.5 | 24.5 |
| All OECD | 21.5 | 8.0 | 32.2 | 37.2 | 23.3 | 13.2 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

sharply. Indeed, in Germany and France the number of persons aged 65 or older will actually decline in the 1980s.

The projection of the elderly population in 1990 depends, of course, on assumptions about death rates and international migration. The main factor influencing the estimates in Table 7, however, is the size of the cohort born during the period 1915 to 1925 relative to that born during the period 1905 to 1915. Members of the older cohort already reached the age of 65 by 1980, while members of the 1915 to 1925 birth cohort will become 65 during the decade. For many European countries the effects of World War I and the post-war recovery resulted in substantially fewer births during the period 1915 to 1925 compared to the number of persons born from 1905 to 1915. In addition, the 1915 to 1925 cohort suffered sizable losses in World War II.

In many OECD countries, the decline in the growth of elderly population stems largely from the sharp declines in the rate of growth of population aged 65 to 79. In contrast to the situation for 65 to 79 year-old individuals, forecasts suggest that during the 1980s the population aged 80 or older will continue to grow at a rapid pace. In the United States, for example, from 1980 to 1990, the population aged 80 and older will increase by 45.4 percent. In Japan, the expected growth rate of this age group is a remarkable 67.4 percent. In countries as diverse as Canada, Portugal, Yugoslavia, Greece, and Finland, the number of people over 80 will increase by more than 35 percent. (See Appendix Table 3.)

## Differences In Household Formation Trends

In spite of the recent declines in the rate of growth of population, in most OECD countries household growth remains strong. Table 8

Table 8

DECADE CHANGE IN TOTAL POPULATION, NUMBER OF HOUSEHOLDS AND AVERAGE NUMBER OF PERSONS PER HOUSEHOLD IN SELECTED OECD COUNTRIES, 1970 TO 1990

| Country | Increase in Total Population | | Increase in Number of Households | | Decrease in Average Number of Persons per Household | |
|---|---|---|---|---|---|---|
| | 1970-80 | 1980-90 | 1970-80 | 1980-90 | 1970-80 | 1980-90 |
| Australia | 15.6% | 8.0% | 29.7% | 27.3% | 12.3% | 18.0% |
| France | 5.6 | 2.8 | 17.0 | 13.5 | 10.7 | 10.3 |
| Germany | -0.7 | -3.3 | 12.4 | 10.1 | 13.1 | 14.0 |
| Italy | 6.1 | 3.8 | 13.4 | 11.5 | 6.8 | 7.6 |
| Japan | 12.8 | 8.3 | 29.4 | 20.3 | 14.7 | 11.1 |
| Netherlands | 6.3 | 2.4 | 22.6 | 17.4 | 15.3 | 14.7 |
| Sweden | 3.0 | 0.8 | 12.9 | 7.9 | 9.5 | 7.1 |
| Turkey | 26.3 | 24.8 | 30.5 | 36.5 | 3.5 | 9.2 |
| U.K. | 0.4 | 1.5 | 13.3 | 10.1 | 12.7 | 8.5 |
| U.S. | 8.4 | 9.6 | 22.4 | 20.2 | 13.1 | 9.3 |
| All OECD | 8.4 | 7.4 | 20.0 | 17.2 | 10.8 | 9.1 |

Source: United Nations, Compendium of Housing Statistics (New York, 1980).

presents United Nations' estimates of the decade rate of change of total population, the number of households, and the average number of persons per household for the 1970s and 1980s. These estimates were prepared in 1979, and thus differ slightly from the more recent estimates of population growth reported earlier. Despite being somewhat out of date, they are based on a common set of definitions, employ similar techniques of estimation and projection, and do represent the best available household data common to all OECD countries.

For the past several decades, household growth has exceeded population growth in most economically advanced countries, but in the 1970s these two rates of growth recorded a substantial divergence. While the United Nations estimated that population increased in the 1970s in the United States by only 8.4 percent, a 13.1 percent decline in the estimated average number of persons per household resulted in a growth of total households of more than 22.4 percent. Other OECD countries experienced similar trends. In each instance, the decline in the household size enabled the number of households in these OECD countries to increase faster than simple population growth would indicate. Indeed, absent decline in the number of persons per household, Germany, Sweden, and the United Kingdom would have recorded little or no household growth in the 1970s.

The relative importance of explanatory factors varies, but in most OECD countries the growth of the elderly population, together with the decline in fertility, and the increasing ability of both young adults and elderly individuals to establish independent households combined to reduce the average size of households. There were 2.9 persons per household in 1980 in the United States, down 13.1 percent from the 3.2

persons per household recorded in 1970. With the exception of the 6.2 persons per household in Turkey, all OECD countries in 1980 had fewer than four persons per household, and thirteen of the twenty-five OECD countries had fewer than three persons per household.

As indicated in Table 8, declines in household size are projected to continue at least through 1990. Yet unlike estimating the number of people reaching a particular age in 1990, forecasting household size is a difficult problem. The number of households depends on the total population and its composition, as well as the factors that influence how individuals of a particular age, sex, race, or socio-economic status join together to form households. Lacking a comprehensive and empirically sound model of household formation, the United Nations forecast age/sex-specific headship rates, i.e., the number of households headed by an individual of a particular age and sex.[15] These rates are then applied to independent forecasts of the population by age and sex to produce estimates of the number of households. The decline in the number of households can thus be divided into two broad factors: the decline in age-specific headship rates and changes in the age structure of the population.

In recent years, reduction in the share of population under the age of 15 in OECD countries has been a major factor in explaining the decline of average household size. As Table 9 indicates, the average number of children per household during the 1980s will continue to decline, but at a substantially reduced rate. Since birthrates have been low for a considerable period of time, further reductions in birthrates are not likely to contribute much to future decline of household size.

Table 9

DECADE CHANGE IN NUMBER OF PERSONS PER HOUSEHOLD
BY AGE IN SELECTED OECD COUNTRIES, 1970 TO 1990

| Country | Decline in Number of Persons per Household | | | | | |
|---|---|---|---|---|---|---|
| | Total | | Aged 0 to 15 | | Aged 15 or Older | |
| | 1970-80 | 1980-90 | 1970-80 | 1980-90 | 1970-80 | 1980-90 |
| Australia | 12.3% | 18.0% | 28.9% | 31.0% | 6.7% | 14.3% |
| France | 10.7 | 10.3 | 29.5 | 1.6 | 7.6 | 13.1 |
| Germany | 13.1 | 14.0 | 45.5 | 33.3 | 6.0 | 10.5 |
| Italy | 6.8 | 7.6 | 13.5 | 13.8 | 4.8 | 5.9 |
| Japan | 14.7 | 11.1 | 10.7 | 20.0 | 16.0 | 8.4 |
| Netherlands | 15.3 | 14.7 | 44.3 | 5.2 | 7.3 | 17.8 |
| Sweden | 9.5 | 7.1 | 12.2 | 14.0 | 8.8 | 5.5 |
| Turkey | 3.5 | 9.2 | 13.9 | 16.2 | -2.9 | 5.3 |
| U.K. | 12.7 | 8.5 | 30.4 | 14.2 | 8.0 | 7.1 |
| U.S. | 13.1 | 9.3 | 31.4 | 14.8 | 7.8 | 9.5 |
| All OECD | 10.8 | 9.1 | 25.0 | 14.3 | 6.4 | 7.8 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

For other age groups, the situation is more complicated and the predictions more subject to error. As Table 9 shows, much of the decline in the average household size in the 1980s is the result of a projected decrease in the number of adults per household. For the United States, the average number of adults per household is expected to decline nearly 10 percent. To illustrate the effect of this trend, it is useful to consider two alternatives: Either the decline of number of adults per household continues, but at the lower 7.8 percent rate observed for the 1970s, or there will be no decline in the number of adults per households. In the first case, the estimated growth in U.S. households in the 1980s would be approximately 12 million. In the second, the household growth in the 1980s in the U.S. would total only 8 million. By assuming continued declines in average number of adults per household, the United Nations' estimates place the expected decade growth of households in the United States at 16 million.

The example illustrates the degree to which the accuracy of the forecast of rate of household growth depends upon the ability of the forecast methodology to capture the complex factors which influence the willingness and ability of adults to live alone or with others. As simple trend extrapolations of the events of recent years, the United Nations' forecasts could fail to capture important changes in the total number and the composition of future household growth. Trend data on headship rates could, for example, overlook the effects on household formation of future shifts in the pattern of rural-to-urban migration, the slowdown in the movement of guest workers into selected European countries, or changes in the age composition of population. Moreover, the simple trend forecasts are unlikely to

capture important changes in the availability and cost of housing. A loose housing market and low rents could encourage even individuals with moderately weak preference for living alone to do so, while a tight housing market, high rents, and lack of available dwelling units could force households to take in boarders, or encourage young adults to continue to live with their parents or otherwise form together into larger household groups.

The United Nations' estimates suggest that the rate of increase in the number of households is likely to slow in the next decade in all the selected countries except Turkey. To the extent that household formation depends on income growth, however, the prolonged period of slow economic growth in OECD countries in the early 1980s makes it likely that United Nations' figures will overstate actual household growth. The United Nations estimates that household growth in the United States for the 1980s will approach 16 million, or 1.6 million per year. Since the actual number of households grew at an annual average of only 1.1 million for the first three years of the decade, the United Nations' forecast seems too high. In any event, it seems clear that relative to declines in average household size observed in the 1970s, the rate of decline of household size will slow in most OECD countries.[16]

The slowing of the rate of growth of households is also linked to the aging of the baby-boom generation. By 1990, the leading edge of the baby-boom generation, those born between 1945 and 1955, will be aged 35 to 45. Alternatively, the baby bust generation, those born in the late 1960s and early 1970s, are approaching young adulthood. In the United States and other OECD countries that experienced a post-war

baby boom, the population bulge is moving out of the young adult ages and is approaching middle age. During the 1980s, the fastest growing population subgroup will be those aged 35 to 45. Conversely, in the 1980s, growth of population aged 25 to 35 will slow substantially, and during the 1990s, this age group will actually decline in numbers.[17]

The aging of the baby boom will both reduce the growth of young single-person households and increase the number of households with children. By 1990, most of the baby-boom generation will have formed households. Further decline in the number of persons per household will add to household growth beyond 1990, but this source of additional housing demand is likely to decline as well. There are limits to the extent of the decline of the average household size. As long as some sizable portion of adults marry and have children, average household size is unlikely to fall much below two persons per household. Since the average household size in many OECD countries is quickly approaching this number, by the 1990s household growth will slow further. Indeed, United Nations' forecasts, comparable to those presented in Table 8, indicate that for all OECD countries, the number of households will increase by only 12 percent in the decade of the 1990s, down sharply from the 1970 figure of approximately 20 percent.

The decline in household size enabled the demand for housing units to remain strong in many urban areas that experienced declines in population growth. In the 1970s, many urban areas had to adjust to declining population and employment activity, but only the most depressed central cities experienced absolute declines in the number of households. For metropolitan areas with declining populations, the stabilization of household size implies that these areas will lose

households as well. To adjust to these declines will require reductions in the number of housing units in urban areas. Managing the reduction of housing inventory will most certainly emerge as a major problem in the future.

While reduced rates of household growth will pose adjustment problems for slow growth regions, it is useful to note that the reduction in the rate of growth of households holds a hidden benefit for many OECD countries. Since 1945, a large share of the investment resources of these countries has been devoted to the production of housing to accommodate the rapidly growing number of households. During the 1970s, on net, more than 43 million units were added to the housing inventory of the 25 OECD countries.

The United Nations' household formation estimates suggest that new construction requirements for many OECD countries will begin to fall in the 1980s. Compared to the 1970s, the housing construction needed in the 1990s to accommodate the increases in households will fall by 20 percent in the United States, while the housing construction requirements of Japan will fall by 28 percent. The declining household growth will thus enable these and other OECD countries to devote a greater share of their housing expenditures to upgrade the quality of the existing inventory, or to reallocate expenditures away from housing investment and towards investments that help rebuild the urban infrastructure or modernize the industrial base.

## EMERGING POLICY ISSUES

The diverse demographic situations of the various OECD countries do not fit neatly into a single mold, but the previous discussion did

identify several broad areas of uniformity of past trends and likely future prospects. This final section briefly reviews emerging policy issues more or less common to all OECD countries.

## Inter-regional Adjustment

The decline in the rate of natural population increase and the slowing of international migration implies that the growth of urban areas in OECD countries will depend increasingly on patterns of migration from one area to the next. Historically, urban areas have been able to attract migrants from declining rural areas, but the slowdown and in many instances the reversal of historical patterns of rural to urban migration is reducing this source of urban population growth. As a result, declines in the rate of total urban population growth are likely to continue into the 1980s and beyond.

The slowing of total urban population growth makes it increasingly likely that entire metropolitan regions will experience population loss. This is only natural. Given the ebb and flow of national economic growth, it would be unreasonable to assume that each region in a country would maintain a constant share of total national population. For countries with little or no total urban population growth, this implies that the growth of one urban region will be associated with population declines in other regions.

The loss of population in an entire urban region need not be a problem, but declining population will certainly present public officials with difficult challenges. Historically, urban decline involved the decline of a central city or core area relative to the growth of suburban areas. Many of the remedies to the problems of central-city decline were intra-metropolitan in nature. In the United

States, for example, public policy has alternatively attempted to retard the movement of jobs from the city to the suburban portions of a metropolitan area or to expand the access of disadvantaged city residents to the jobs and housing located in the growing portion of the region. Such policy prescriptions assume that jobs are growing somewhere in the metropolitan area. If job decline is endemic to the entire region, then efforts which focus on intra-regional adjustments will have but limited success.

Though urban public policy must continue to examine the dynamics of intra-regional adjustment processes, the decline of broad urban regions suggests that inter-regional adjustments will be central to the urban policy debate of the 1980s. Unfortunately, many important elements of the process of inter-regional adjustment are poorly understood. In the past, regional population adjustments could be achieved by changes in the patterns of rural to urban migration. As opportunities diminished in one area, rural migration was deflected towards another. Moreover, under conditions of rapid population growth, regional adjustment was facilitated by the apparent willingness of younger urban workers to relocate from one area to another in search of employment. For much of the postwar period, internal population migration under conditions of rapid total population growth seemingly generated a more or less efficient utilization of the labor resources of most advanced industrial nations.

The stabilization of total urban population and the aging of the work force of many OECD countries may pose difficult policy problems in the future. Given differences in wages or economic opportunity across regions, it is well documented that young workers, as opposed

to older workers, would be more likely to migrate.[18] What is not well understood is exactly what incentives are needed to induce migration of older workers. In part, older workers may be reluctant to leave an area as a result of the high psychological costs of moving. Inability to transfer pension benefits or difficulties of finding suitable housing could likewise retard mobility.

For whatever the reason, low levels of mobility of elderly workers imply that as the work force ages, the process of regional population adjustment could become increasingly sluggish. If this is true, developing methods to stimulate relocation of older workers will emerge as a major policy issue in many OECD countries. Absent such policies, the age distribution of the work force will become increasingly unbalanced, with younger workers gaining increasing shares of the jobs in more dynamic regions and older workers more heavily concentrated in the declining regions. Moreover, as the work force ages, it is possible for job shortages to develop in the growing regions, as workers become increasingly reluctant to relocate in search of employment.

While it would be tempting to suggest that a simple policy of providing mobility incentive payments would induce migration flows in the desired direction, the evidence on the lack of mobility of older workers in the face of significant wage differentials suggests that such a program could prove most expensive.[19] A less expensive and potentially more productive approach would be to reduce or eliminate the many unintended barriers to mobility that exist in present day urban policies. For example, substantial differentials in the levels of health and social welfare payments in different regions may inadvertently result in a reduction in the willingness of a worker to

relocate to a new area. Moreover, difficulties of transferring unemployment benefits from one area to the next may also have a retarding effect. Before launching a costly new program to promote mobility, efforts should be made to enhance the ability of workers to move by removing such barriers. This approach will require, however, better understanding than exists today of the factors influencing labor mobility.

## Changing Age Composition

Against a backdrop of declining total population growth, the rapid growth of selected population subgroups is likely to pose important policy issues. Just as the United States must confront the realities of rapid declines in school-age population, and Japan must prepare for a growth in the population aged 45 to 65, other OECD countries must plan for the expected surge in growth in their population aged 80 and older. Moreover, the growth of specific population subgroups may run counter to the trend of total population of an urban region. Thus a declining core area with declining fiscal resources could nonetheless be confronted with the burden of providing expanded health or social service facilities for a growing population aged 80 and older.

Equally important is the aging of the baby-boom generation. By 1990, the leading edge of the baby-boom generation in the United States--those born between the years 1946 and 1955--will be aged 35 to 45. Alternatively, the baby-bust generation--those born in the late 1960s and early 1970s--are approaching young adulthood. While the baby-boom generation placed substantial pressure on the rental housing stock in the 1970s, housing preferences of this group will change as they age. If the 1970s were the decade of the young single-person

household, then the 1980s will be more oriented toward family households. To be sure, many in the baby-boom generation will remain single, or marry and divorce. Yet the largest portion of this generation will marry and have children. Given the size of the cohort, even if proportionately fewer baby boomers form traditional households, there will be a sharp increase in the absolute number of family households aged 35 to 45. This trend will result in continued pressure on the nation's housing resources, especially owner-occupied housing.

The aging of the baby-boom generation has potentially ominous implications for the central portions of the major metropolitan areas of the United States and other OECD countries. The growth of young, single-person households was one of the principal components of housing demand in many core areas in the 1970s. Indeed, growth of the baby-boom population was sufficient to trigger substantial revitalization activities in selected inner-city neighborhoods. As the baby boomers age, it is likely that many will move away from the congested urban centers into less dense suburban and nonmetropolitan settings. Indeed, this movement is part of the reason behind the resurgence of growth in the low-density rural portions of many OECD countries. If this scenario holds, many urban centers will experience sharp declines in population and households, and the concerns of gentrification in the 1970s will yield to concerns of inner-city abandonment and decline in the 1980s.

While the aging of the baby boom poses problems for the selected inner-city neighborhoods, it implies many pluses for national economic prosperity. In the 1970s, the economies of the United States and many Western European countries struggled to generate enough job growth to

meet the requirements of a rapidly growing labor force. In addition to the coming of age of the baby-boom generation, growth of the labor force was also stimulated by the growing number of female workers. As the baby bust follows the baby boom, the growth of the labor force will slow. While further extension of female labor force participation is likely, the largest segment of baby-boom females are already in the labor force. Further rapid growth of the total labor force as a result of increased labor force participation of women is not likely.

The slowing of growth of the labor force should reduce unemployment, but should also have a beneficial effect on worker productivity. Since the late 1960s, in the United States and other advanced industrial nations, worker productivity increases have been minimal. In combination with the major advances in communication and computer technology, the 1980s should witness an upturn in the rate of growth of productivity. The growing employment experience of the post-war baby-boom generation will only serve to enhance the potential for increases in worker productivity in many of the OECD countries.

## Household Formation

Many studies of future housing construction requirements in the United States, Europe, and Japan take household formation as a given. In translating simple forecasts of household growth into numerical goals for housing construction, however, analysts often ignore the fact that public policy can influence household size, composition, and the number of households. Rather than attempt to build a housing stock to fit projections of households, public policy can also encourage the formation of new types of households that make better use

of the existing housing inventory. House-sharing programs are a simple example of this approach. By encouraging single individuals to take in boarders, house-sharing programs provide housing for single individuals at little additional cost to society. Congregate housing is another example of efforts to house elderly individuals in some way other than the now very common pattern of one person to one unit. In short, public policy must examine programs that encourage the formation of new living arrangements to make better use of the existing housing stock, as well as programs that change the characteristics of the housing stock to meet demographic change.

Finally, the growth of specific population subgroups in otherwise declining regions poses special problems for housing and community development policy. Despite overall urban decline, many low-income households face strong demand for their units. Unlike the 1970s, this demand is likely to focus more on family housing than on smaller units more suitable to single-person households. This could in turn lead to rising prices for larger dwelling units, especially those most suitable for families with children. When combined with other problems associated with urban decline, this phenomenon could emerge as a politically explosive public policy issue in an increasing number of OECD countries.

## Housing Affordability

Numerous analysts have discussed in general terms the effect that the price and availability of housing and government policies concerning provision of housing have on the number and type of households. Studies by Needleman and Paige of housing conditions in the United Kingdom in 1921 and 1951 demonstrate that availability of suitable

housing can limit household formation even among individuals with sufficient financial resources to spend for housing. In his study of American families, Glick noted that in addition to income and taste preferences, the available supply of housing was an important factor affecting household formation. During the period of housing shortage immediately following the end of World War II, the proportion of young couples without their own living quarters was two and one-half times as high as it was in 1954 when the housing situation had greatly eased.[20]

These studies demonstrate the limiting effects of tight housing markets, but much less is known about the effects of loose markets. In his recent book on neighborhood policy in the United States, Anthony Downs observed that poorly understood urban development and federal tax policies combined to produce a rapid growth of low-density new housing in suburban jurisdictions. Add to this the growth of economic activity in the southern and southwestern portions of the country, and the result is the well-documented decline in the demand for inner-city neighborhoods, particularly in older industrial cities. In turn, Downs argues, declining demand left many central-city neighborhoods with an excess supply of housing and served to depress central-city housing prices. The decline of middle- and upper-income demand for central-city housing enabled many low- and moderate-income households to trade up to housing they otherwise could never have afforded and stimulated the growth of households, particularly among the low-income elderly population.[21]

This view of metropolitan development helps explain why real rents fell in the United States for much of the 1970s. The pattern of

declining real rents in the United States apparently was repeated in many other OECD countries. During the period 1970 to 1979, United Nations' statistics indicate that real rents also fell in Denmark, Finland, France, Germany, Greece, Ireland, Italy, Norway, Portugal, Spain, Sweden, Turkey, and the United Kingdom. Of the OECD countries covered by this survey of housing costs, only Austria displayed a sharp growth in real price of rental housing, while the Netherlands posted a small gain, and for Belgium and Switzerland there was no change.[22]

Recent events point to changing housing market conditions. Since the late 1970s, real rents in the United States are on the rise and threaten to add to already substantial housing affordability problems faced by the nation's low-income renter population.[23] In many metropolitan areas housing supply adjustments, in the form of disinvestment or abandonment, or in the form of conversion of rental property to condominium ownership, have begun to restore the balance of supply and demand for low-cost rental properties. In addition, the aging of the baby-boom generation continues to add demand and tighten many metropolitan housing markets. In combination, these factors could produce substantial rises in real housing costs in the 1980s.

Review of recent housing policy assessments indicates that the issue of affordability of rental housing is a growing concern in numerous OECD countries. There exists the distinct possibility that tightening market conditions will lead to more apartment or house-sharing by both young and older low- and moderate-income individuals. For poor families, the effect of changing housing market conditions on future household formation deserves careful attention.

Table A-1

INDEX OF RELATIVE SIZE OF FIVE-YEAR COHORTS
(Average number of people in each of the four five-year cohorts born from 1925 to 1944 equals 100)

| Country | Year Cohort Born | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1945-50 | 1950-55 | 1955-60 | 1960-65 | 1965-70 | 1970-75 | 1975-80 |
| **Northern European** | | | | | | | |
| Denmark | 129 | 116 | 114 | 121 | 121 | 112 | 109 |
| Finland | 149 | 129 | 120 | 113 | 101 | 87 | 97 |
| Iceland | 150 | 175 | 192 | 192 | 183 | 175 | 217 |
| Ireland | 125 | 121 | 122 | 127 | 127 | 135 | 138 |
| Norway | 139 | 130 | 132 | 134 | 141 | 133 | 115 |
| Sweden | 130 | 113 | 108 | 117 | 122 | 116 | 115 |
| U.K. | 131 | 112 | 120 | 138 | 133 | 115 | 93 |
| **Western European** | | | | | | | |
| Austria | 143 | 160 | 176 | 189 | 192 | 206 | 180 |
| Belgium | 116 | 117 | 125 | 130 | 118 | 110 | 112 |
| France | 133 | 132 | 135 | 142 | 141 | 140 | 123 |
| Germany | 89 | 97 | 112 | 129 | 124 | 87 | 74 |
| Luxembourg | 91 | 95 | 114 | 118 | 109 | 91 | 95 |
| Netherlands | 143 | 132 | 132 | 144 | 141 | 122 | 98 |
| Switzerland | 118 | 116 | 126 | 148 | 142 | 122 | 105 |
| **Mediterranean** | | | | | | | |
| Greece | 102 | 100 | 103 | 98 | 105 | 94 | 95 |
| Italy | 109 | 99 | 104 | 113 | 113 | 108 | 101 |
| Portugal | 113 | 112 | 117 | 116 | 106 | 108 | 114 |
| Spain | 101 | 109 | 109 | 121 | 127 | 132 | 139 |
| Turkey | 134 | 166 | 184 | 226 | 226 | 257 | 251 |
| Yugoslavia | 107 | 126 | 119 | 114 | 109 | 110 | 117 |
| **Other** | | | | | | | |
| Australia | 143 | 160 | 176 | 189 | 192 | 206 | 180 |
| Canada | 142 | 168 | 192 | 195 | 162 | 151 | 163 |
| Japan | 130 | 110 | 91 | 95 | 102 | 115 | 117 |
| New Zealand | 156 | 169 | 193 | 202 | 195 | 202 | 190 |
| U.S | 137 | 155 | 170 | 165 | 143 | 133 | 134 |
| All OECD | 125 | 126 | 132 | 138 | 132 | 127 | 124 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

Table A-2

AGE SPECIFIC DECADE RATES OF GROWTH FOR POPULATION AGED 15 TO 64 IN SELECTED OECD COUNTRIES

| Country | Decade Rate of Growth of Population | | | | | |
|---|---|---|---|---|---|---|
| | Aged 15 to 24 | | Aged 25 to 44 | | Aged 45 to 64 | |
| | 1970-80 | 1980-90 | 1970-80 | 1980-90 | 1970-80 | 1980-90 |
| **Northern European** | | | | | | |
| Denmark | -4.3 | -1.2 | 17.7 | 4.7 | -4.3 | 5.1 |
| Finland | 10.6 | -16.5 | 23.0 | 10.7 | 2.7 | 5.0 |
| Iceland | 21.6 | -6.7 | 27.1 | 31.2 | 14.3 | 12.5 |
| Ireland | 23.0 | 13.0 | 23.5 | 33.5 | -5.1 | -1.7 |
| Norway | 0.7 | 3.6 | 21.6 | 13.9 | -6.4 | -6.4 |
| Sweden | -8.6 | 3.7 | 13.8 | 0.7 | -8.9 | -1.3 |
| U.K. | 9.0 | -4.7 | 8.7 | 12.2 | -7.2 | -3.3 |
| Total | 5.1 | -3.2 | 11.8 | 11.3 | -6.5 | -2.2 |
| **Western European** | | | | | | |
| Austria | 17.5 | -9.2 | 5.5 | 10.9 | -4.2 | 7.2 |
| Belgium | 10.1 | -6.6 | 7.1 | 12.5 | 3.6 | 0.9 |
| France | 2.5 | -3.2 | 13.1 | 14.7 | 6.5 | 4.9 |
| Germany | 24.9 | -18.7 | -1.2 | 1.1 | -2.1 | 15.3 |
| Luxembourg | 12.8 | -17.0 | 7.4 | 4.9 | 7.5 | 8.1 |
| Netherlands | 4.0 | -7.5 | 23.7 | 15.4 | 7.9 | 9.2 |
| Switzerland | 2.9 | -9.2 | 1.0 | -1.0 | 2.0 | 15.7 |
| Total | 11.9 | -10.6 | 6.5 | 8.3 | 2.0 | 9.8 |
| **Mediterranean** | | | | | | |
| Greece | 9.5 | 3.9 | -4.3 | 16.4 | 18.1 | 5.9 |
| Italy | 8.0 | 1.8 | 1.1 | 5.3 | 8.0 | 7.4 |
| Portugal | 20.9 | -2.1 | 6.8 | 29.0 | 10.3 | -0.8 |
| Spain | 18.4 | 3.7 | 3.2 | 20.0 | 15.9 | 0.6 |
| Turkey | 41.3 | 19.8 | 30.4 | 41.3 | 32.9 | 28.9 |
| Yugoslavia | 1.7 | -3.7 | 5.3 | 12.1 | 29.7 | 15.6 |
| Total | 18.4 | 6.9 | 7.7 | 19.2 | 16.6 | 9.7 |
| **Other** | | | | | | |
| Australia | 15.6 | 0.3 | 28.9 | 18.3 | 12.4 | 6.9 |
| Canada | 23.0 | -16.6 | 34.9 | 34.6 | 17.8 | 14.4 |
| Japan | -19.6 | 16.8 | 12.5 | 4.9 | 33.7 | 22.8 |
| New Zealand | 26.7 | -1.8 | 31.6 | 28.3 | 7.2 | 7.1 |
| U.S. | 18.2 | -17.0 | 26.6 | 29.3 | 4.4 | 4.4 |
| Total | 6.3 | -8.0 | 22.1 | 17.9 | 13.5 | 11.1 |
| All OECD | 9.8 | -4.6 | 14.7 | 15.7 | 9.1 | 9.1 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

Table A-3

AGE SPECIFIC DECADE RATES OF GROWTH FOR POPULATION AGED 65 YEARS OR OLDER IN SELECTED OECD COUNTRIES

| Country | Decade Rates of Growth of Population | | | | | |
|---|---|---|---|---|---|---|
| | Aged 65 to 79 | | Aged 80 or older | | Total 65 or older | |
| | 1970-80 | 1980-90 | 1970-80 | 1980-90 | 1970-80 | 1980-90 |
| **Northern European** | | | | | | |
| Denmark | 16.7% | 2.4% | 38.6% | 22.1% | 20.3% | 6.2% |
| Finland | 27.9 | 0.6 | 53.8 | 40.0 | 31.1 | 6.3 |
| Iceland | 13.3 | 23.5 | 66.7 | 20.0 | 22.2 | 22.7 |
| Ireland | 8.5 | 3.7 | 8.8 | 3.2 | 8.5 | 3.6 |
| Norway | 15.7 | 8.6 | 31.0 | 18.4 | 18.4 | 10.5 |
| Sweden | 19.1 | 3.6 | 37.4 | 31.1 | 22.2 | 8.9 |
| U.K. | 14.4 | -2.2 | 17.4 | 25.8 | 14.9 | 2.7 |
| Total | 15.5 | -0.4 | 22.4 | 25.6 | 16.7 | 4.2 |
| **Western European** | | | | | | |
| Austria | 8.4 | -13.2 | 22.3 | 12.5 | 10.5 | -9.0 |
| Belgium | 3.2 | -8.2 | 23.9 | 18.5 | 6.3 | -3.4 |
| France | 10.3 | -6.6 | 30.5 | 23.3 | 13.9 | -0.5 |
| Germany | 13.0 | -16.1 | 32.3 | 25.7 | 15.8 | -9.3 |
| Luxembourg | 8.1 | -1.0 | 33.3 | 12.5 | 11.6 | -6.3 |
| Netherlands | 17.9 | 10.3 | 33.3 | 26.7 | 20.5 | 13.4 |
| Switzerland | 16.4 | 1.6 | 36.9 | 31.6 | 19.6 | 6.9 |
| Total | 11.6 | -9.6 | 30.7 | 24.0 | 14.7 | -3.6 |
| **Mediterranean** | | | | | | |
| Greece | 28.6 | 1.3 | 6.9 | 39.2 | 24.8 | 7.1 |
| Italy | 29.6 | -0.4 | 23.1 | 31.0 | 28.5 | 4.7 |
| Portugal | 26.4 | 9.0 | 3.1 | 45.5 | 22.8 | 13.7 |
| Spain | 19.3 | 11.1 | 28.0 | 27.6 | 20.7 | 13.3 |
| Turkey | 38.5 | 12.6 | 0.0 | 33.2 | 32.3 | 15.0 |
| Yugoslavia | 24.2 | 1.1 | 20.6 | 42.6 | 23.7 | 6.5 |
| Total | 27.3 | 4.5 | 19.0 | 32.8 | 26.0 | 8.8 |
| **Other** | | | | | | |
| Australia | 32.3 | 20.1 | 30.9 | 27.0 | 32.1 | 21.3 |
| Canada | 32.4 | 27.6 | 27.5 | 41.0 | 31.4 | 30.1 |
| Japan | 35.5 | 27.3 | 68.4 | 67.4 | 39.8 | 33.5 |
| New Zealand | 29.4 | 12.0 | 6.8 | 27.7 | 25.2 | 14.4 |
| U.S. | 22.8 | 19.2 | 37.3 | 45.4 | 25.5 | 24.5 |
| Total | 26.9 | 21.8 | 41.8 | 49.1 | 29.5 | 27.0 |
| All OECD | 21.5 | 8.0 | 32.2 | 37.2 | 23.3 | 13.2 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

Table A-4

DECADE CHANGE IN TOTAL POPULATION, NUMBER OF HOUSEHOLDS AND AVERAGE NUMBER OF PERSONS PER HOUSEHOLD, SELECTED OECD COUNTRIES, 1970 TO 1990

| Country | Increase in Total Population | | Increase in Number of Households | | Decrease in Average Number of Persons Per Household | |
|---|---|---|---|---|---|---|
| | 1970-80 | 1980-90 | 1970-80 | 1980-90 | 1970-80 | 1980-90 |
| **Northern European** | | | | | | |
| Denmark | 4.4 | 2.2 | 14.7 | 10.3 | 9.7 | 7.9 |
| Finland | 4.2 | 2.5 | 19.6 | 10.9 | 15.1 | 8.2 |
| Iceland | 15.1 | 18.2 | 27.3 | 25.7 | 10.7 | 6.3 |
| Ireland | 11.9 | 12.2 | 15.5 | 17.9 | 3.3 | 5.0 |
| Norway | 4.4 | 1.7 | 13.5 | 10.4 | 8.7 | 8.7 |
| Sweden | 3.0 | 0.8 | 12.9 | 7.9 | 9.5 | 7.1 |
| U.K. | 0.4 | 1.5 | 13.3 | 10.1 | 12.7 | 8.5 |
| Total | 1.8 | 2.0 | 13.8 | 10.2 | 11.9 | 8.1 |
| **Western European** | | | | | | |
| Austria | 1.5 | 0.3 | 10.3 | 10.8 | 8.5 | 10.7 |
| Belgium | 3.0 | 1.0 | 11.2 | 9.3 | 7.9 | 8.2 |
| France | 5.6 | 2.8 | 17.0 | 13.5 | 10.7 | 10.3 |
| Germany | -0.7 | -3.3 | 12.4 | 10.1 | 13.1 | 14.0 |
| Luxembourg | 5.3 | 0.3 | 9.3 | 7.7 | 3.9 | 7.4 |
| Netherlands | 6.3 | 2.4 | 22.6 | 17.4 | 15.4 | 14.8 |
| Switzerland | -0.2 | 1.2 | 19.1 | 14.1 | 19.3 | 12.9 |
| Total | 2.5 | 0.0 | 14.8 | 12.0 | 12.0 | 12.2 |
| **Mediterranean** | | | | | | |
| Greece | 6.6 | 7.3 | 11.7 | 11.3 | 4.6 | 3.8 |
| Italy | 6.1 | 3.8 | 13.4 | 11.5 | 6.8 | 7.5 |
| Portugal | 9.8 | 11.6 | 9.9 | 13.1 | 0.0 | 1.3 |
| Spain | 10.6 | 10.7 | 17.2 | 16.8 | 5.6 | 5.7 |
| Turkey | 26.3 | 24.8 | 30.5 | 36.5 | 3.5 | 9.2 |
| Yugoslavia | 9.0 | 8.1 | 23.5 | 18.5 | 13.1 | 9.8 |
| Total | 12.0 | 16.5 | 17.6 | 17.6 | 4.9 | 5.5 |
| **Other** | | | | | | |
| Australia | 15.6 | 8.0 | 29.7 | 27.3 | 12.3 | 18.0 |
| Canada | 14.9 | 14.6 | 33.1 | 28.4 | 15.7 | 12.2 |
| Japan | 12.8 | 8.3 | 29.4 | 20.3 | 14.7 | 11.1 |
| New Zealand | 15.1 | 7.2 | 25.3 | 25.2 | 9.7 | 16.6 |
| U.S. | 8.4 | 9.6 | 22.4 | 20.2 | 13.1 | 9.3 |
| Total | 10.5 | 9.4 | 25.2 | 21.1 | 13.2 | 10.7 |
| All OECD | 8.3 | 7.4 | 20.0 | 17.2 | 10.8 | 9.3 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

Table A-5

DECADE CHANGE IN NUMBER OF PERSONS PER HOUSEHOLD BY AGE, SELECTED OECD COUNTRIES, 1970 TO 1990

| Country | Decline in Number of Persons per Household | | | | | |
|---|---|---|---|---|---|---|
| | Total | | Aged 0 to 15 | | Aged 15 or older | |
| | 1970-80 | 1980-90 | 1970-80 | 1980-90 | 1970-80 | 1980-90 |
| Northern European | | | | | | |
| Denmark | 9.7 | 7.9 | 17.9 | 16.7 | 7.4 | 5.7 |
| Finland | 15.1 | 82.0 | 38.9 | 8.0 | 9.0 | 8.2 |
| Iceland | 10.7 | 6.3 | 25.8 | 0.0 | 4.6 | 9.1 |
| Ireland | 3.3 | 5.0 | 8.5 | 6.3 | 1.1 | 4.5 |
| Norway | 8.7 | 8.7 | 21.3 | 27.1 | 5.1 | 4.3 |
| Sweden | 9.5 | 7.1 | 12.2 | 14.0 | 8.8 | 5.5 |
| U.K. | 12.7 | 8.5 | 30.4 | 14.2 | 8.0 | 7.1 |
| Total | 11.9 | 8.1 | 26.3 | 14.0 | 8.0 | 6.6 |
| Western European | | | | | | |
| Austria | 8.5 | 10.7 | 24.1 | 9.4 | 4.2 | 11.0 |
| Belgium | 7.9 | 8.2 | 22.4 | 3.6 | 4.1 | 9.4 |
| France | 10.7 | 10.3 | 21.5 | 1.6 | 7.6 | 13.1 |
| Germany | 13.1 | 14.0 | 45.5 | 33.3 | 6.0 | 10.5 |
| Luxembourg | 3.9 | 7.4 | 23.2 | 5.7 | -0.5 | 7.8 |
| Netherlands | 15.4 | 14.8 | 44.3 | 5.2 | 7.3 | 17.8 |
| Switzerland | 19.3 | 12.9 | 42.0 | 6.4 | 13.7 | 14.6 |
| Total | 12.0 | 12.2 | 33.3 | 12.5 | 6.6 | 12.2 |
| Mediterranean | | | | | | |
| Greece | 4.6 | 3.8 | 11.8 | 10.1 | 2.4 | 2.0 |
| Italy | 6.8 | 7.6 | 13.5 | 13.8 | 4.8 | 5.9 |
| Portugal | 0.0 | 1.3 | 7.9 | -2.9 | -2.9 | 2.9 |
| Spain | 5.6 | 5.7 | 10.0 | 4.2 | 4.4 | 6.2 |
| Turkey | 3.5 | 9.2 | 13.9 | 15.2 | -2.9 | 5.3 |
| Yugoslavia | 13.1 | 9.8 | 22.9 | 12.2 | 9.9 | 9.1 |
| Total | 4.9 | 5.5 | 11.2 | 8.1 | 2.5 | 4.5 |
| Other | | | | | | |
| Australia | 12.3 | 18.0 | 28.9 | 31.0 | 6.7 | 14.2 |
| Canada | 15.7 | 12.2 | 51.4 | 18.0 | 5.0 | 10.6 |
| Japan | 14.7 | 11.1 | 10.7 | 20.0 | 16.0 | 8.4 |
| New Zealand | 9.7 | 16.6 | 27.8 | 36.4 | 2.9 | 10.6 |
| U.S. | 13.1 | 9.3 | 42.9 | 6.7 | 4.6 | 10.1 |
| Total | 13.2 | 10.7 | 31.4 | 14.8 | 7.8 | 9.5 |
| All OECD | 10.8 | 9.3 | 25.0 | 14.3 | 6.4 | 7.8 |

Source: OECD, Demographic Trends: 1950 to 1990 (Paris, 1979).

## NOTES

1. For a review of these issues in the context of the United States, see William Alonso, "The Population Factor and Urban Structure," in Arthur P. Solomon, ed., The Prospective City (Cambridge, Mass.: The MIT Press, 1980).

2. Colin Clark, Population Growth and Land Use (New York: St. Martin's Press, 1967), p. 280.

3. U.S. Department of Housing and Urban Development, "Urban Decline in OECD Countries," July 1981 (mimeo).

4. The source of the 1950 and 1970 population figures is OECD, Demographic Trends: 1950 to 1990 (Paris: OECD, 1979). The 1980 estimate is based on data presented in the United Nations' publication, Monthly Bulletin of Statistics, September 1983.

5. In the table, each country is placed into one of four geographical groupings: Northern Europe, Western Europe, Mediterranean, and Other. The division of the European members of the OECD follows boundaries established by the Economic Commission for Europe. With the exception of Turkey which is included in the Mediterranean group, the remaining five non-European OECD member countries are listed as "other." For further discussion see Economic Commission for Europe, Post War Demographic Trends in Europe (Geneva: Economic Commission for Europe, 1975).

6. For discussion of the changing characteristics of the family in the United States, see George Masnick and Mary Jo Bane, The Nation's Families: 1960 to 1990 (Cambridge, Mass.: Joint Center for Urban Studies, 1980).

7. See, for example, Norman B. Ryder, "The Emergence of a Modern Fertility Pattern," in Fertility and Family Planning, S.J. Beheman, ed. (Ann Arbor: University of Michigan Press, 1969).

8. U.S. Department of Housing and Urban Development, "Urban Decline," p. 6.

9. OECD, Demographic Trends: 1950 to 1990 (Paris: OECD, 1979).

10. For an excellent discussion of non-metropolitan growth in the U.S., see U.S. Department of Housing and Urban Development, The 1980 Urban Report of the President (Washington, D.C.: U.S. Government Printing Office, 1980). See also William C. Apgar, Jr., "The Decentralization of Housing Industry Activity," Working Paper No. W83-9 (Cambridge, Mass.: Joint Center for Urban Studies, 1983).

11. Daniel R. Vining, Jr. and Thomas Kontuly, "Population Dispersal from Major Metropolitan Regions: An International Comparison," International Regional Science Review 3, No. 1, pp. 49-73.

12. See Alonso, op. cit., p. 40.

13. Simon Kuznets, Modern Economic Growth: Rate, Structure and Spread (New Haven: Yale University Press, 1966). See also Walter W. Rostow, Stages of Economic Growth (Cambridge: Cambridge University Press, 1964).

14. See OECD, Ad Hoc Group on Urban Problems, The Causes and Characteristics of Urban Growth (Paris: OECD, 1981).

15. For a discussion of alternative forecasting techniques see United Nations, Methods for Forecasting Households and Population (New York: United Nations, 1973).

16. United Nations, Compendium of Housing Statistics (New York: United Nations, 1980).

17. George Masnick, "The Demographic Factor in Household Growth," Working Paper No. W83-3 (Cambridge, Mass.: Joint Center for Urban Studies, 1983).

18. William C. Apgar, Jr., "Occupational, Industrial, and Geographical Mobility," in unpublished Ph.D. Thesis, Harvard University, Cambridge, Mass., 1978.

19. For a review of experimental labor mobility projects in the United States, see H. Tyrone Black, "On Moving the Poor: Subsidizing Relocations," in Industrial Relations, 14, No. 1, pp. 63-77.

20. For an excellent summary of the literature on the effect of housing shortages on household formation, see United Nations, The Determinants and Consequences of Population Trends (New York: United Nations, 1973), Chapter 10.

21. Anthony Downs, Understanding Neighborhoods (Washington, D.C.: The Brookings Institution, 1981).

22. United Nations, Annual Bulletin of Housing and Building Statistics for Europe (New York: United Nations, 1979).

23. For a discussion of recent trends in real rents in the United States, see William C. Apgar, Jr., "Recent Trends in Housing Quality and Affordability," forthcoming working paper (Cambridge, Mass.: Joint Center for Urban Studies).