Growth Statement 1993 Growth Statement

City of Columbus
Gregory S. Lashutka, Mayor
Development Department

City of Columbus
Mayor Gregory S. Lashutka

Development Department

George J. Arnold, Director

April 1993

Dear Citizens of Columbus:

The Development Department is pleased to present this statement on growth and economic change in Columbus. This report is an attempt to identify and discuss issues that will affect the future development of the Columbus metropolitan area.

The value of the Growth Statement is that it defines growth and change occurring in both fringe and older city areas, in order to provide an analytic base for decisions of both the public and private sectors. It also offers projections of demographic and economic trends influencing our development efforts. The data discussed in this document contributed to the information base for the Columbus Comprehensive Plan.

It is our hope to expand and improve the quality of information and analysis with each succeeding statement, and we welcome comments on the content and organization of this document. If you have any questions or comments regarding this Growth Statement, please contact the Planning Division Research Supervisor, Carl Klein, at 645-8502.

Sincerely,

George J. Arnold, Director
Development Department

GJA:ck

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The Columbus metropolitan area has reversed a period of reduced population growth. Average annual growth rates for Columbus were 1.46% in the 1960s, or about 6,800 people per year. In the 1970s, the Columbus population grew by .46% annually, or about 2,500 people per year. In the 1980s, population growth patterns have increased markedly, with an annual growth rate of 1.2%, or about 6,800 people per year. A major factor in the population slowdown in the 1970s, a pattern of outmigration, has been reversed in the latter part of the 1980s. The shift to outmigration began in 1974, at the end of a peak in the economic cycle (the high point of manufacturing in the Columbus MSA) and a shift in employment patterns throughout what came to be called the Rust Belt.

Columbus' continued population growth is at pace with overall growth patterns in central Ohio and at odds with state patterns. Ohio's annual growth fell to .13% in the 1970s, and declined even further in the 1980s, to .05%.

The age pyramid is shifting into the higher age brackets, with an impact on the rate of net natural increase in Columbus. This is offset somewhat by decisions to have children later in life. Nevertheless, it is assumed that the natural rate of population growth will decline in the future, with smaller numbers of women in their child-bearing years. Annual growth rates are projected to decrease until, by the 2005-2010 period, the annual rate will be .73%.

Assuming that the economy remains strong, migration patterns will continue to support population expansion in central Ohio. The average net migration in the last half of the 1980s was about 1,500 annually. Migration is very sensitive to economic factors, as a comparison of the positive rates for the latter 1980s with an outmigration of over 9,000 people during the downturn in 1981 and 1982 illustrates.

Household growth rates have remained strong over the last thirty years. The slowing of population growth in the 1970s was more than compensated for by a surge of household growth. The primary mechanism has been a decline in household size. The average Columbus household size was 3.14 in 1960, 2.96 in 1970, 2.49 in 1980 and 2.38 in 1990. The precipitous decline in household size during the 1970s sustained household formation in the face of declining rates of population growth.

In 1980, almost 29% of the population was in the 20 to 34 year old age group, the baby boom generation. Another 10% were in the next age cohort, from 15 to 19. In 1990 this "boomer-plus" population was 25 to 44 years old, entering on average their peak earning years. These cohorts declined to 36% of the population. By 2000, about 31% of the population will be 35 to 54. In 2010, the 45 to 64 age group will be under 27% of the population.

The aging of central Ohio will accelerate under the impact of this population bulge. In 1980, about 22.6% of the population was over the age of 50. This percentage decreased to 22.4% in 1990 and will recover mildly to 24.7% in 2000. By 2010, almost 30% of the population will be over the age of 50.

Younger age cohorts will be comparatively less populated. Between 1980 and 2010, population under the age of twenty will decrease from about 32% of total population to about 26%. The actual numbers will rise from 402,000 to about 411,000.

The moderate population growth forecast to 2010 assumes that local economic expansion will continue and provide a sufficient base to support an increased population. The population will become more heavily middle-aged, with a concomitant decrease in fertility. Population increases will continue at a slower rate. Migration patterns will be able to exert a more pronounced effect on overall population growth patterns.

As the age cohorts that supply the bulk of the population for new household formations decline, the rate of household formation should slow, with new housing starts declining gradually. The increased affluence of the population should support an increase in the average value per unit.

The economic implications of the aging population extend beyond housing preference. The wealth effect should allow for higher levels of expenditure on both large scale and small scale purchases, while purchasing patterns shift toward satisfying the health needs of a population that will be becoming increasingly conscious of the problems of aging.

The structure of the labor market will also face stresses from the shift in population age distribution. The bulge in population will tend to oversupply the middle management levels of most organizations, and the sheer numbers of employees in the older age groups should limit the possibilities of advancement for younger age groups. The shortage of new entrants in the labor force will also make it increasingly difficult to fill entry-level positions in the job market, and the competitive pressure to fill these jobs may drive wages up faster than historic experience would suggest. One possible result of the shortages in the labor force would be an increase in inmigration patterns in central Ohio.

Economic Trends

The Columbus area has experienced comparative economic health and substantial job creation in the last twenty years. The Franklin County unemployment rate was significantly lower than the state rate throughout the last decade, and lower than the national rate in all of the last ten years. The annual unemployment rate in Franklin County from 1980 through 1992 averaged 5.9%, 1.2 percentage points lower than the national rate and 2.3 percentage points below the Ohio rate. The city of Columbus and the Columbus MSA tend to have somewhat higher unemployment rates than Franklin County, but lower than the national and state averages. The annual unemployment rate for the city of Columbus from 1983 through 1992 has averaged 6.3% while the MSA annual average from 1983 through 1992 is 5.9%

During the 1970s, Columbus' economic performance was respectable. Even though employment growth was significantly lower than in the nation as a whole, Columbus still led in Ohio. From 1973 through 1979, the Columbus area generated 64,500 new jobs, or 17% of all the new jobs produced by the Ohio economy during the period.

The Columbus MSA achieved its highest rates of growth during the 1979-1992 period and consolidated its role as the major job generator in Ohio. Despite the loss of some 16,000 jobs during the 1981-1982 recession and the loss of 2,600 jobs in the most recent recession, over the 1979-1992 period the MSA registered a net gain of 169,100 jobs. This 30% employment growth in the Columbus MSA compares favorably with the national growth of 21% and is exceptional in Ohio, which experienced only 6.7% employment growth from 1979-1992.

From 1979 to 1990, the Columbus area economy generated fully 41% of Ohio's new jobs, though accounting for only 13% of the state's population. Throughout the latter half of the 1980s, Columbus MSA employment grew at an average annual rate of 3.6%, adding an average of 23,600 jobs a year. In reaction to the national economy, which began to worsen in mid-1990, Columbus MSA employment

dropped by 2,600 from 1990 to 1991, a decline of .4%. This was less than one-third of the rate of national employment decline, 1.3%, from 1990 to 1991. Ohio employment during the same period, excluding the Columbus MSA, declined by 1.6%. Employment growth in the Columbus MSA recovered in 1992. Average annual employment in 1992 was 727,500, an increase of 8,400 jobs over the previous year. Compared to Ohio and the nation, the Columbus economy has enjoyed substantially higher employment growth during the expansionary years of the 1980s and a milder downturn during the recent recession.

Manufacturing, never dominant in Columbus, continued to shrink in employment while industries in the service-producing sector continued to expand. Manufacturing in the Columbus MSA accounted for 101,000 jobs in 1992, 13.9% of the total. In 1973, manufacturing's share stood at 24% of the total MSA jobs. The shift of employment to the service-producing sector of the economy has been going on for some time, both locally and nationally. Around 82% of the Columbus MSA employment is part of the service-producing sector, compared to 78% nationally and 74% in Ohio. Since 1973, service-producing employment in the Columbus MSA increased by 251,300, to a total of 598,200 in 1992. During the same time the goods producing sector declined by 17,700 employees. There is no doubt that the steady employment growth Columbus has enjoyed is a result of the expansion of the service-producing sector.

The total wage bill for the Columbus area also grew at a rate higher than those for the state and nation. Total wage earnings in the MSA increased by 138.1% or $9.3 billion. Of that growth, Franklin County was responsible for $7.7 billion, or 83%. The large service-producing sector, which accounted for all the net new employment growth, contributed only 81% of the growth in total wage earnings. This is a result of the low average wage in the service-producing sector compared to the goods-producing sector. Adjusted for inflation, the growth in total wage earnings in the Columbus MSA was almost 33.6% from 1979 to 1991. This compares favorably with the national growth in real wage earnings of 26% and the Ohio growth of 3.4%. The comparatively high growth rates of total wage earnings in the Columbus MSA reflect the higher than average growth of employment in the area.

Performance in the growth of the average wage, adjusted for inflation, is not as encouraging at the national or local level. By various measures, the average wage level has tended to grow very little over time. One measure shows that the average wage in the U.S. has grown only 4.5% after the effects of inflation between 1979 and 1991. The average wage in the Columbus MSA over this same period of time increased by 2.4%, while the Franklin County rate was 2.1%.

From a regional perspective, the service-sector orientation of the Columbus area economy has certainly shown its strength in employment and total income expansion, trends that should continue in the future. The Columbus area economy will continue its shift toward the service-sector, as total employment grows to the 813,000 projected for the year 2000. The goods-producing sector will remain essentially constant in the absolute number of employees and will experience further shrinkage in terms of its relative share.

Manufacturing's share of total employment will decline to 12.8% by 2000, from 13.9% in 1992. This is the smallest share decline in manufacturing since its employment peak in 1973, and compares favorably to the six percentage point drop between 1979 and 1989, and the three percentage point drop between 1973 and 1979. Manufacturing is one division that will be particularly affected by exogenous factors such as the relative strength of the dollar versus other currencies, and future trends in such factors will affect the size of the manufacturing division in the Columbus MSA.

Government's slower employment growth rate will also lower its employment share to 17.0%, continuing its decline from 1979. FIRE will expand its share to 8.5% of the labor force by 2000, up from 8.2% in 1992. General services will show the largest share increase, with its 26% 1992 share jumping to 27.9% of total employment by 2000. Such dramatic increases have become commonplace in the expansion of general services employment since 1973. The greatest employment growth is expected in professional and technical occupations. These occupations emphasize relatively high levels of education and training. They are spread across industries rather than being concentrated in a small number of industries.

With 94,600 new jobs forecast between 1991 and 2000, the rate of job creation will outstrip the rate of

population growth projected in this report. This job expansion will require some mixture of higher levels of labor force participation and increased levels of inmigration. Based on the age composition of the Columbus area population, the number of young people entering the labor force will be declining, compared to earlier levels, over the next thirteen years. Such a decline will accentuate the pressure on the labor market created by the forecasted job expansion and may serve to expand wage levels, especially in the most underpaid occupations.

The major change occurring in the Columbus area economy during the period 1973-2000 is the decline of manufacturing and the rise of general services and FIRE. Manufacturing's share of total employment between 1973 and 2000 falls by 11.6 percentage points, while the combined share of general services and FIRE increases during the same period by 13.2 percentage points. These divisions have provided most of the recession-resistance enjoyed by Columbus during the past fifteen years, and should continue to provide it in the future.

Geographic Trends

Past performance and forecasts indicate that the central Ohio area will have continued population growth and economic expansion. The pattern of that continuing development, however, is also a concern. The distribution of that development within central Ohio determines what that environment will be like in twenty years.

Building activity continues to support assumptions about Columbus' ability to capture a constant share of population growth. New residential construction in Franklin County added 82,086 units to the total housing stock from 1980 to 1991. Columbus captured 71.5% of these new units, but there is a substantial difference between the 1980-85 period, when the city captured 75.2% of all new units, and the 1986-1991 period, when the city capture rate fell to 69.2%. This decrease is caused primarily by shifts in single family construction, as renter occupancy in Columbus increased to 53.4% of all occupied housing units.

Census data indicate that Columbus captured 73.5% of Franklin County's population growth between 1980 and 1990. Most of this population growth occurred in the latter half of the 1980's, when the city was exhibiting a lower residential unit capture rate. Long-term forecasts of Columbus population assume that the city will capture about two-thirds of Franklin County's growth. Recent patterns of population growth and residential construction continue to support that assumption.

Platting and annexation records also reflect increased suburban activity. Between 1980 and 1984, 72.5% of all new lots platted in the County were platted in Columbus. This percentage falls to 54.4% for the 1985-89 period, and then rebounds to 65.4% in 1990-91. Between 1950 and 1975, the city was annexing 5.3 square miles per year. From 1980 to 1992, this average has fallen to 1.3 square miles per year. About 55% of land annexed in Franklin County in the 1980s was annexed by suburban jurisdictions. Nevertheless, Columbus has ample land for development. MORPC forecasts project substantial growth in Columbus during the next twenty years, although it falls outside the older parts of the city. In the future, Columbus will share development more equally with the suburban jurisdictions of the County.

Older City Trends

Within the city, the pattern of development is uneven. There are two geographic areas that have lost population, with little sign of change in the future. The first area is the Columbus School District. From a high of 550,523 people in 1970, the population in the district fell by 25,818 between 1970 and 1980. The district lost an additional 37,641 people between 1980 and 1990. The second area, a subset of the school district, is the older city of Columbus, defined by the city's 1950 corporation limits. Between 1960 and 1990 Columbus gained 161,942 people. The older city lost 116,938 while the newer, suburban Columbus gained 278,880 people.

Population decline in the older city is symptomatic of other problems. While the county poverty rate increased from 10.7% to 13% between 1970 and 1990, the older city poverty rate increase from 18.7% to 29.1%. In 1990, the older city had under 30% of the county's population, but 60.4% of those in poverty and 50.5% of those receiving public assistance. Unemployment was almost four percentage points higher in the older city than for the county as a whole. The majority of concentrations of distress in Columbus are in the older city, with additional distressed areas just beyond the 1950 boundary in the west and south, and especially in the northeast. The concentration of distress in and around the older city illustrates that

the dispersion of population since 1960 has included a disproportionate number of affluent citizens, while the less fortunate have been left behind.

Labor Force and Fiscal Trends

Population projections prepared for this report are based on the age distribution of the current population, historic fertility and mortality rates, and estimates of migration. Employment projections for the year 2000 are taken from the Ohio Bureau of Employment Services. The comparative evaluation of these employment and population projections can suggest ways in which the labor market will change in the next twenty years, as well as indicating that employment will still be a strong lure for continued inmigration and overall population growth.

Employment expanded by almost 29% between 1980 and 1990, while the labor force grew by almost 21%. Population over the age of sixteen increased by 13.7% during this period, with the rest of the increase in the labor force arising from increased labor force participation rates. The overall participation rate increased from 64.4% in 1980 to 68.3% in 1990.

The employment growth forecast for 1990 to 2000 is 12.7%, which is quite conservative when compared to growth in the 1980s. Even at this rate of growth, the gap between employment and labor force will narrow even more by 2000. With a 10% employment growth forecast for 2000-2010, employment would actually exceed the projected labor force. This environment should provide a strong stimulus for the continuation of the inmigration patterns that central Ohio has experienced in recent years.

The nature of the labor force will also be changing, as population aging creates a comparative shortage of younger, entry-level workers and an increase in the proportion of older workers in the workplace. The last of the baby boom, aged between 25 and 34, comprised 32% of the labor force in 1990, while 24% of the labor force was 45 and over. By 2010, 25% of the labor force will be between 25 and 34, while the proportion 45 and over grows to 36%. In a work force that is already ranking job satisfaction increasingly important, the age factor should also increase the importance of job security. With more workers in what are traditionally peak earning years, the wage structure of the labor force should be biased toward higher paying jobs, but workers will need to be more productive to support such a wage structure. Current trends toward flexibility in the workplace, and the increased emphasis on training to adapt to changing work duties, should become more important.

Columbus residents capture about two-thirds of the County's total wage and salary employment. Based on OBES estimates of employment by place of residence, city residents held about 64% of all covered employment in Franklin County in 1988-1991 period. The 1990 Census indicates that 325,088 residents of Columbus were employed, compared to a county total of 496,524, or 65.4%. These jobs do not, however, pay quite as well. Based on a comparison of only those households reporting wage and salary income in the 1990 census, the average household in Columbus earned $31,117, compared to $35,369, or 13.7% more, in the county. The Columbus unemployment rate also tends to be about .7% higher than the county rate. Nevertheless, the people of Columbus are participating in the economic growth of the area, and this participation helps to fuel the expanded population growth and housing expansion detailed in this document.

From a city government perspective, it is also important to note that city revenues are growing with the economic expansion in Franklin County and the Columbus MSA. The city of Columbus is an employment center for the region, and taxes income earned within its boundaries. Based on extrapolations from income tax withholding collections, about 80.6% of all wages earned in Franklin County are earned and taxed in Columbus. Franklin County wages are 81.8% of the MSA total from 1980 to 1991. These capture rates indicate the continued economic vitality of Columbus and the interdependence of the region.

In residential geography, it seems clear that past patterns of dispersion are continuing and, with the projections of continuing expansion on the fringe of Columbus, these patterns will pose a continuing challenge to city and county infrastructure. The Columbus central city population continues to shrink, albeit at a decreasing rate. There is a sharp income disparity between the central city population and those living in the rest of central Ohio, but the economic vitality of the city of Columbus seems to be on a firm footing.

Demographic Patterns of Growth

Population growth is a traditional measure of the economic health of a region, and the varied history of population growth in the Columbus area reflects periods of rapid expansion and of slower, more stable growth. High growth rates during the 1960s dropped sharply during the 1970s, and had a significant resurgence in the 1980s. This section of the Growth Statement will analyze the changes in population growth trends that have had such an impact on growth and development in the Columbus area.

Population Growth

1960 to 1970

This time period was one of major population growth in the Columbus area, the state and the nation. Columbus and Franklin County gained 68,709 and 150,326 people respectively, amounting to average population gains of 6,871 and 15,033 people per year. Average annual growth rates for Columbus and Franklin County during the 1960s were 1.46 and 2.20 percent. (See Appendix A: Table P-1.)

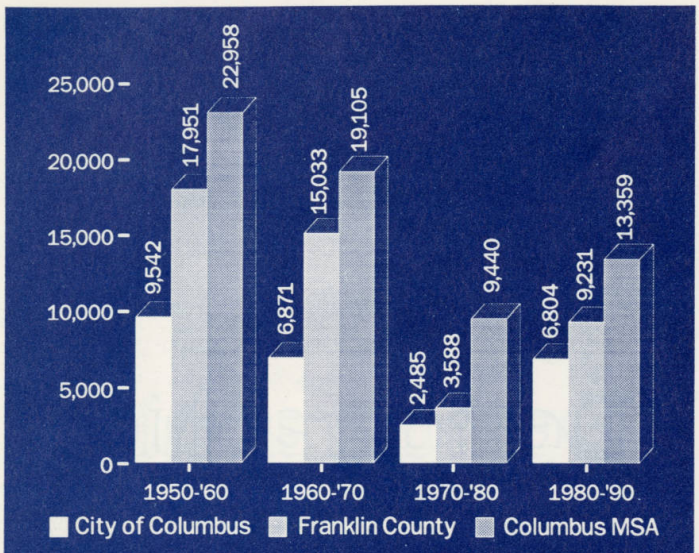
During this same time period the State of Ohio gained 951,026 people, while the nation gained 24,381,000 people. The average annual growth rates for the state and nation were 0.98 and 1.35 percent, respectively. During the high population growth of the 1960s, Columbus and Franklin County growth rates exceeded both the state and national rates by a significant margin.

1970 to 1980

This time period is marked by a dramatic decline in population growth rates both locally and nationally. Columbus and Franklin County's population grew by only 2,485 and 3,588 people annually. (See Figure P-1.) This is a decrease of 63.8 and 76.1 percent in the average annual population growth of Columbus and Franklin County from the 1960 to 1970 time period. The Columbus Metropolitan Statistical Area (MSA) population increased by 9,440 people annually in this time period. This is a significant decline (50.6 percent) from the average annual growth of 19,105 people during the 1960 to 1970 time period.

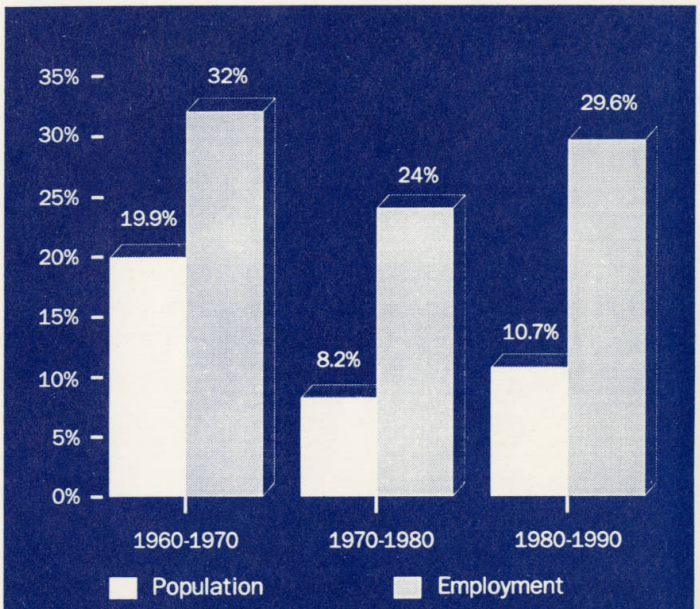
The slowdown in population growth in the 1970s was a consequence of the general slowdown in national population growth rates and to a geographic shift in the pattern of job creation. From 1960 to 1981, the south and west regions of the

Figure P-1: **Average Annual Population Growth 1950 to 1990**



Average annual population change in the Columbus Metropolitan Area, Franklin County and Columbus has declined since the 1950s. Between 1980 and 1990, Columbus experienced a population increase of 12% while Franklin County and the metropolitan area had increases of 10.6% and 10.7%.

Figure P-2: **Columbus MSA Population/Employment Growth Comparisons, 1960 to 1990**



Population growth has been positive over the past thirty years for the metropolitan area. Employment growth has been even greater during the same time period.

nation saw the creation of over 3.6 million new manufacturing jobs, while the northeast and north central regions lost 192,000 manufacturing jobs. In Ohio, manufacturing employment peaked in 1969, while the Columbus area reached its highest levels of manufacturing employment in 1973. This restructuring of the local economy encouraged a shift in migration patterns, with many workers following the job creation pattern to the Sunbelt.

Average annual population growth in Ohio declined in the 1970s. Ohio's population growth dropped from 95,103 people annually during the past decade to 14,021 people during the 1970 to 1980 period. Nationally, average annual population growth experienced a modest decline from the 1960s of 2,438,100 people to 2,270,500 people during the 1970s.

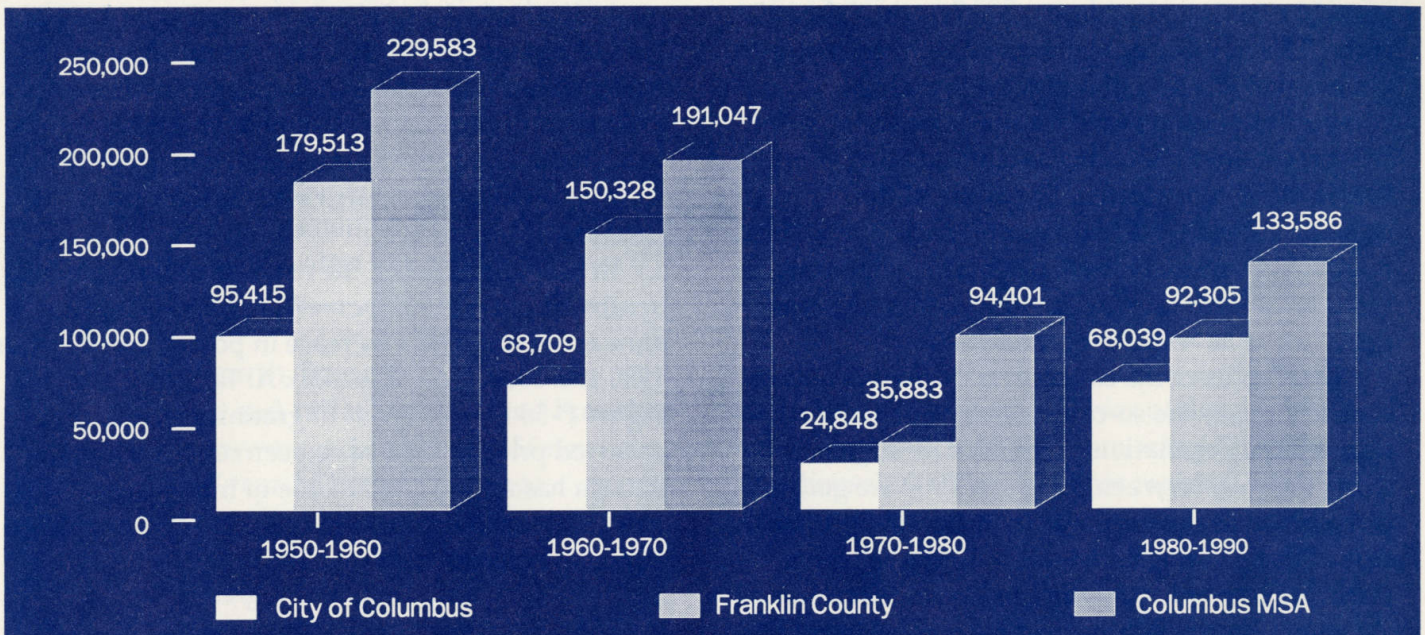
1980 to 1990

Overall population patterns in this time period demonstrated a dramatic turnaround from the slower growth of the 1970s. Population growth in the Columbus MSA for the ten year period was 1.07 percent, or 133,586 people. Franklin County's growth rate for the decade was 1.06 percent, an increase of 92,305 people. The city of Columbus reached a total population of 632,910 in 1990, with a population increase of 1.2 percent or 68,039 people over the last ten years. Several reasons for the increase in population growth patterns in the latter part of the 1980s are: the recovery of the local economy; increasing birth rates; and a strong reversal in a fifteen year old population outmigration pattern.

New population estimates created by the City of Columbus Department of Development indicate that in 1992 the Columbus population was at approximately 644,905 people. These new 1992 population growth estimates imply that the slowdown in population growth in the last half of the 1970s may not have been permanent. The decrease of the 1970s can be partially attributed to a period of readjustment in the Columbus economy characterized by a continuing shift away from manufacturing to a growing service-based economy.

Between 1961 and 1970, employment increased by 32 percent and population grew by 19.9 percent. For the period between 1971 and 1980, employment grew by 24 percent while population increased by only 8.2 percent. In comparison, employment between 1981 and 1990 increased by 29.6 percent while population had increased by 10.7 percent. (See Figure P-2.) Changes in the nature of the labor force

Figure P-3: **Total Population Growth 1950 to 1990**



The city of Columbus has shared in the total population growth that has occurred in both Franklin County and the metropolitan area. While population growth rates have not been as dramatic as during the 1950s, Columbus has gained 69 percent and 74 percent of all population growth in Franklin County during the 1970-80 and 1980-90 periods.

and the job mix dampened population expansion in the last half of the 1970s. The continued expansion of service-producing industries in the 1980s has contributed to the resurgence in the rate of local population growth. The current rate of population expansion is not as rapid as in the 1960s, due to lower multiplier effects in the service industries and partial absorption of new job opportunities through higher rates of labor force participation.

Within the central Ohio area, it is significant to note that the city of Columbus has shared equally in the population growth that has occurred in Franklin County. (See Figure P-3.) While the city did not grow at the same rate in the 1970s that it did in the 1960s, annual figures based on the latest population estimates show that Columbus has consistently captured a share of the growth which has occurred within Franklin County. This ability of Columbus to retain its competitive position in the county has carried over into the 1980s. Columbus has, for example, captured over 73.7 percent of the new population growth in the county as a whole between 1980 and 1990. This capture rate is well ahead of the usual 65 percent rate used to forecast Columbus' growth. Statistics on housing units authorized by building permits, which are discussed later, also confirm that Columbus consistently captures over 71 percent of all new housing in the county. The clear implication is that Columbus has continued to participate in the growth of Franklin County and the central Ohio area.

A review of population growth patterns draws attention to significant trends affecting the future of Franklin County and the city of Columbus. This discussion has emphasized some important demographic trends in the metropolitan area. First, the Columbus metropolitan area has reversed a period of reduced population growth brought about by declining fertility rates and negative migration rates. Second, this turnaround in population growth takes place in a state and region where continued population decline is still the rule of the day. Third, Columbus has managed to consistently capture a significant proportion of the growth that has occurred within Franklin County. (See Figure P-4.)

Components of Population Change

Changes in the population of the central Ohio area are brought about by changes in births, deaths and migration. For the most part, death rates have remained fairly constant and are likely to do so for the next ten years. Birth rates have been forecast to

decline very slightly and, even though there seems to be a mild, short-term reversal of that trend, will probably conform to that pattern for some time to come. The number of births and deaths in central Ohio is partly a function of the age and sex composition of the population. For example, when there are more women in the child-bearing years there will be more births. The aging of the population will tend to drive down the overall birth rate, though recently there has been a temporary increase in birth rates apparently stemming from decisions to have children later in life.

This has been the case across the nation and in central Ohio as the so-called "baby-boomers" move through the population pyramid. The large number of babies born between, 1946 and 1960 are generally categorized as the post-war baby boom. By 1966, the first of these youngsters were entering the labor force and beginning family life. Because of their sheer numbers they have had a dramatic impact on our society. In central Ohio this population group has contributed to the rapid rise in household formations and to the production of a second, although diminished, baby boom. Between 1980 and 1989 the net natural increase (births-deaths) has averaged 7,838 people annually.

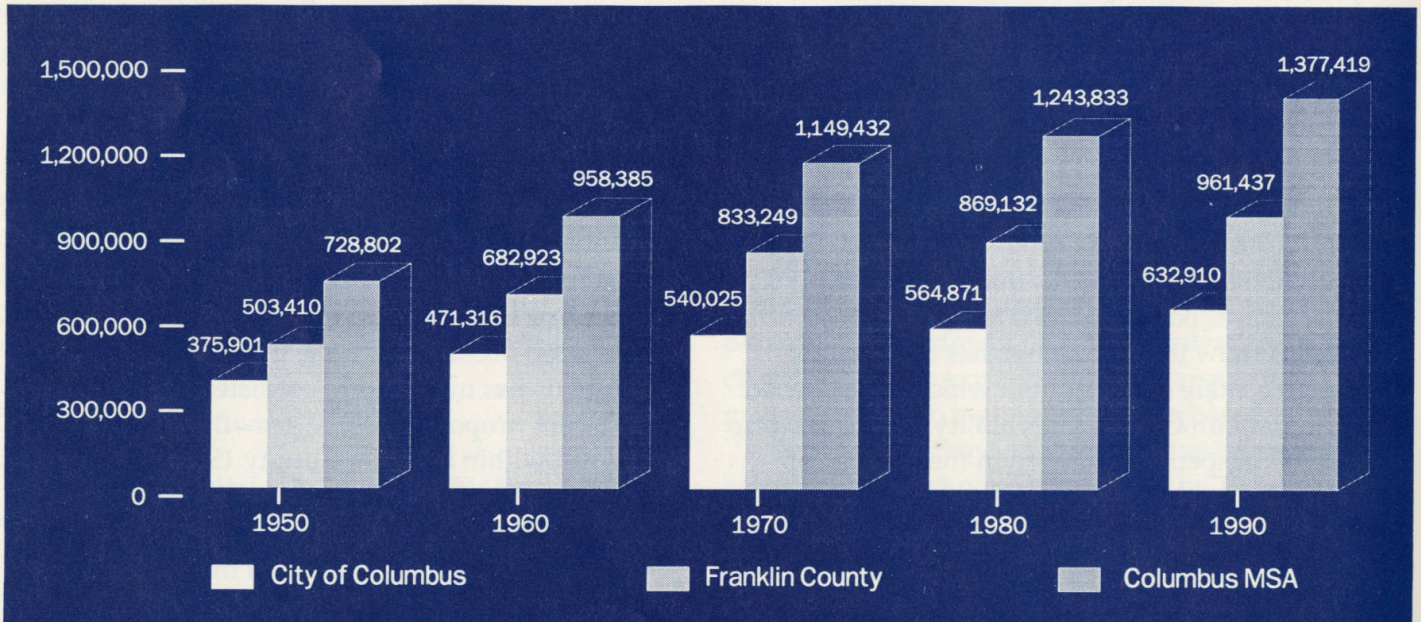
Migration patterns also have a great impact on general population trends. Franklin County's net migration shifted sharply downward from 1973 to 1974, the same period that saw manufacturing employment peak in the Columbus area. The expansion of the local economy over the last few years has had a major impact on the increase in shifting population growth rates to their pre-1974 pattern.

In Franklin County, the number of births, minus deaths, or net natural increase, has exceeded the annual net migration increase in population between 1980 and 1989. (See Appendix A: Table P-2 and Figure P-5.) Negative net migration patterns that occurred prior to 1985 have been reversed and the pattern has now shifted to one of inmigration. This new inmigration pattern has added 1,383 people annually between 1985 and 1989.

Household Size

The number of households created during the 1970s outpaced population growth, which led to a rapidly declining average household size. This phenomenon is not unique to central Ohio. The average household size in Columbus declined from 2.96 persons per household in 1970 to 2.49 persons

Figure P-4: **Total Population 1950 to 1990**



In spite of the downturn in the state of Ohio's total population, the Columbus Metropolitan Statistical Area (MSA), Franklin County and Columbus have maintained a consistent rate of population increase and have even shown signs of increasing that rate of growth over the past few years.

per household in 1980. By 1990, the average household size in Columbus had reached 2.38 persons per household. Similar declines have also occurred in Franklin County. (See Appendix A: Table P-3 and Figure P-6.) Population increases tend to stimulate economic demand, and the disproportionate increase in households, due to the shrinking household size, magnifies the demand effect. In effect, the population growth triggered by a healthy economy since 1984 will help to further stimulate that economy.

Household Growth Trends

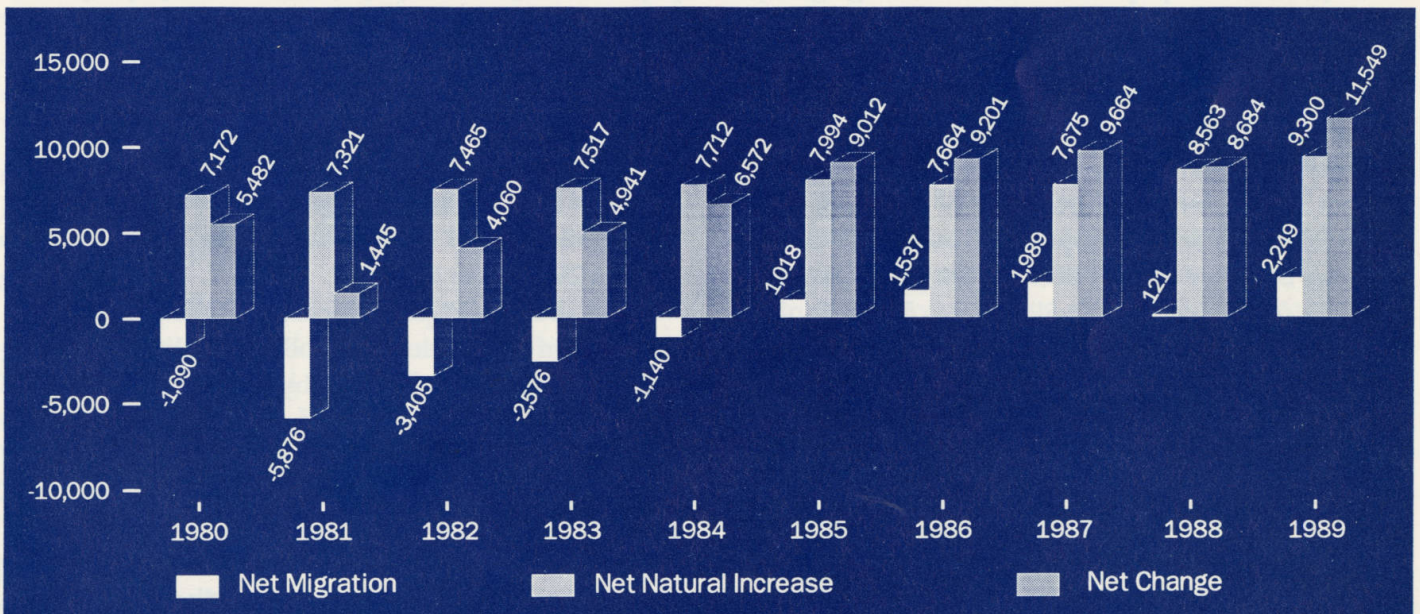
Between 1960 and 1970 Columbus and Franklin County added on average 3,068 and 5,856 new households each year. In contrast, average population growth during this same time period added 6,871 and 15,033 new persons per year, respectively. During the 1970s, Columbus experienced the effects of rapidly changing household relationships. Changing styles of living, the entry of baby boomers into the housing market, the increasing numbers of single parents, and the tendency of the elderly to maintain their own homes all contributed to a disproportionate increase in the number of households. Household formation in the 1970s outpaced population growth. While Columbus and Franklin County were growing at an average rate of 2,485 and 3,588 people per year, respectively, they were adding an average of 4,446 and 6,383 new households each year. (See Appendix A: Table P-4 and Figure P-7.) The average annual household growth rate in the 1970s was 2.5 percent, or more than five times as high as the average annual population growth rate of .46 percent.

This strong growth in the number of households in Columbus and Franklin County contributed to the demand for new housing and apartment construction and the consequent spread of new development to the fringe areas of the city. Much of the 1970 to 1980 housing boom was a direct result of local household formation, not regional population growth. Between 1980 and 1990, the household growth rate has slowed down considerably, declining to an average annual rate of 1.7 percent in Franklin County. However, the rate of household formation is still higher than the rate of population growth.

Population Age Structure Changes

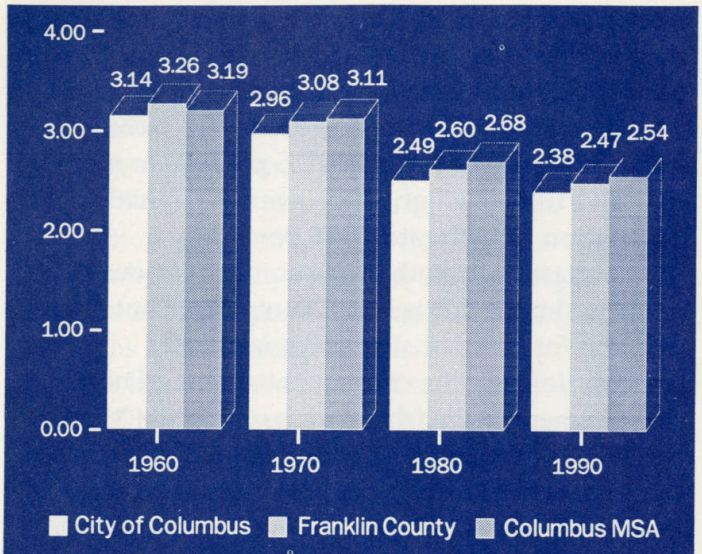
The period between 1970 and 1980 also saw continuing shifts in the age structure of the central

Figure P-5: **Components of Population Change Franklin County 1980 to 1989**



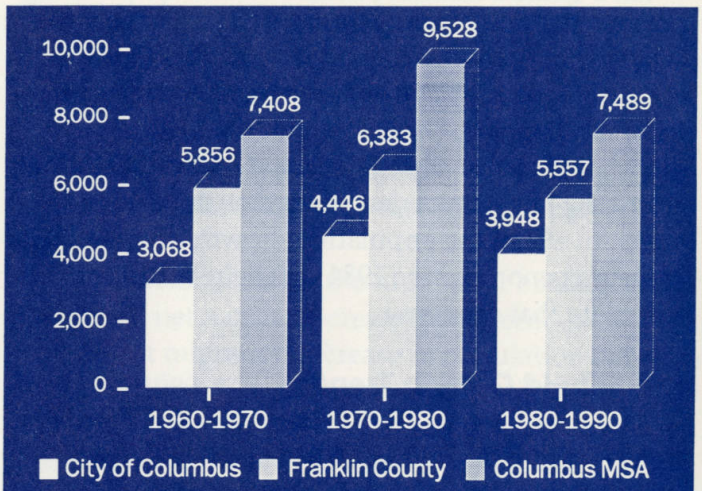
Between 1980 and 1984, net migration has been negative for Franklin County. This trend was reversed in 1985 and has continued to be positive. Since 1985, the county has averaged 1,383 new residents moving into the area annually. Continuing high levels of natural increase (births minus deaths) have lead to an overall population increase that has averaged 7,838 people a year between 1980 and 1989.

Figure P-6: **Average Household Sizes 1960 to 1990**



With the high rates of household formation experienced in the 1970s, household sizes declined substantially. In the MSA, the average household size declined 18.3 percent, from 3.11 persons per household in 1970 to 2.54 persons per household in 1990. Similar declines occurred in both Franklin County and the city of Columbus.

Figure P-7: **Average Annual Growth in the Number of Households, 1960 to 1990**



While Columbus and Franklin County were growing at the rate of 2,484 and 3,588 people per year, respectively, during the 1970s, they were adding on average 4,440 and 6,380 new households each year. Because of the high rate of new household formation, numeric household growth in the 1970s was almost twice as high as population growth. Household formation has slowed in the city, county and MSA in the 1980s.

Ohio population. The baby boomers are seen as a population age-group bulge, that is, a high proportion of people in two or three age groups. In 1980, the baby boomers were somewhere between 20 and 35 years old. Almost 29 percent of the metropolitan area population was in this age group in 1980. (See Appendix A: Table P-5.) Another significant age group in the population distribution are those people in the 15 to 19 year bracket. This group represents another 10 percent of the population. Together these groups account for almost 39 percent of the local area population. In 1990, this boomer-plus population bulge will be 25 to 44 years old, entering on average the peak earning years. In 2000, this group will be 35 to 54 years old, and comprise about 31 percent of the population. In 2010, the boomer-plus bulge will consist of 430,338 people, or almost 27 percent of the population. (See Figure P-8.) This group will have lost 28,555 people due to natural mortality and migration, but will still be a substantial and identifiable demographic force.

Over time, the baby boomers will accentuate the aging of the central Ohio population. In 1980, about 22.6 percent of the population was over the age of 50. This percentage decreased to 22.4 percent in 1990 and will increase to 24.7 percent in the year 2000. In 2010, when all of the baby boomers will be over 50, 29.7 percent of the population will be over the age of 50.

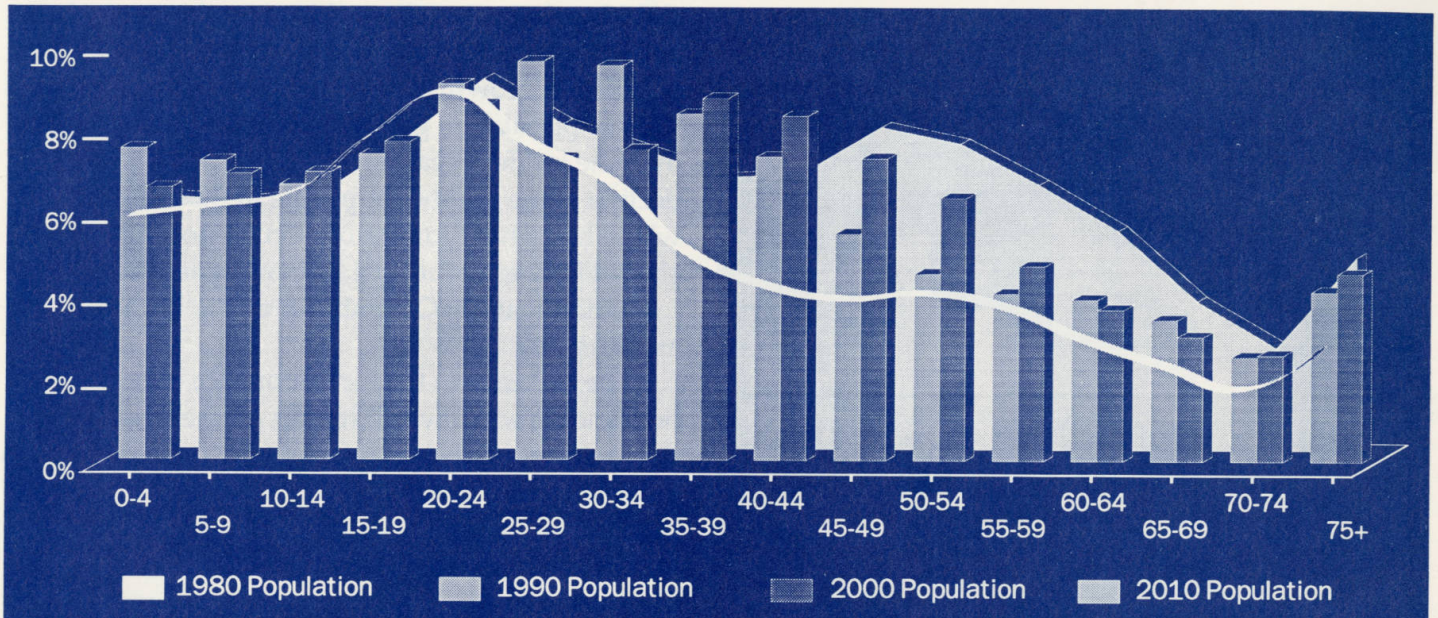
In contrast to the general aging trend in central Ohio, there is a marked decrease in the younger population cohorts. The Columbus area population under twenty totalled 402,755 people in 1980, or about 32.4 percent of the population. By 1990, this age group had 393,360 people, or 28.6 percent of the total population. In the years 2000 and 2010, the 0-19 age group will increase to 419,981 people and then decrease to 411,568. The population percentages of the 0-19 age group will decrease from 27.9 percent in 2000 to 25.6 percent in 2010.

The above analysis assumes that the long-term forecasts of population will follow fertility patterns, rather than being thrown off by more marked changes in migration patterns. An increase in inmigration rates will not change the aging of the central Ohio population, but it would serve to populate the younger cohorts.

Projections of Long-Term Growth

Given the recent upswing in population growth that has characterized the last few years, projections of population growth over the next 20 years have

Figure P-8: **Age Cohort Shifts 1980 to 2010**



Demographic changes underway since World War II will continue to skew age distributions in the future. The next twenty years will see the noticeable population bulge stretch well into the middle years of life. By the year 2010, almost 41.8 percent of the population will be between the ages of 30 and 59 years old, and will provide a substantial shift in the existing age distribution in the Columbus area.

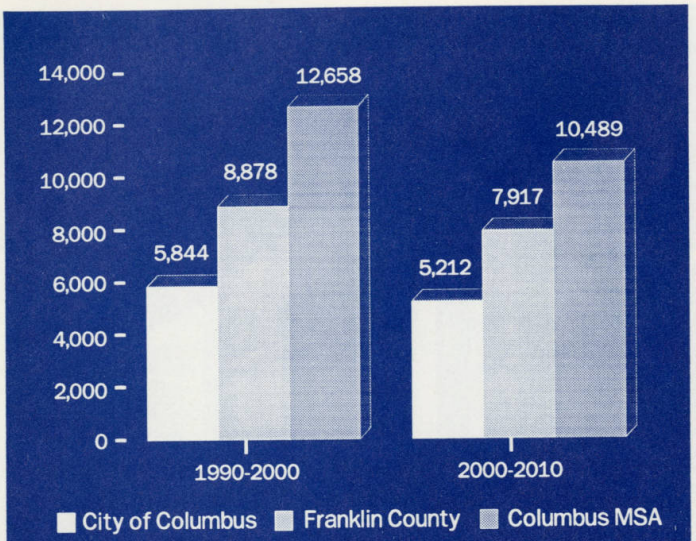
been revised upward. Projections released by the Ohio Data Users Center in 1985 have been adjusted by the city of Columbus Department of Development to reflect higher levels of population growth reported by the U.S. Census through 1990. These projections show that population growth in the central Ohio area will likely continue to increase, although at rates substantially below those experienced between 1980 and 1990. Over the long-run, it is assumed that the population projections based on mortality and fertility rates will provide a better guide to population change in central Ohio than the much higher short-term growth rates.

Although the State of Ohio is projected to lose population over the next ten years, the Columbus Metropolitan Statistical Area will enjoy a healthy rate of population increase. In 1990, the Columbus MSA had a population of 1,377,419 people. By the year 2000, the MSA population is expected to reach 1,503,999 people. In 2010, the forecast total population is 1,608,886. This increase represents a continuing growth pattern for central Ohio, although at rates lower than those of the last ten years. (See Appendix A: Table P-6.) The rate of growth decreases slowly over time, from 4.7 percent during 1990-95 to 3.3 percent between 2005 and 2010.

Actual population change is shown in Appendix A: Table P-7. The metropolitan area is expected to grow by an average of 12,658 people per year between 1990 and 2000. In contrast the area grew by 13,359 people between 1980 and 1990. The outlook for Franklin County is also positive. Between 1980 and 1990, Franklin County added an average of 9,231 people per year. Between 1990 and 2000 the Franklin County area is expected to add an average of 8,878 people per year. These projections should be considered a conservative forecast, likely to be low if continued economic growth stimulates more inmigration similar to that experienced in the late-1980s.

The city of Columbus increased by 6,804 persons per year during the 1980s, although this average was pulled up by strong growth performance late in the decade. Local projections assume that the city of Columbus will continue to capture a consistent share of the county's growth. Using this assumption, the city of Columbus is expected to grow by an average of 5,844 people per year between 1990 and 2000. (See Figure P-9.)

Figure P-9: **Average Annual Population Projections 1990 to 2010**



The Columbus MSA is projected to increase by an average of 12,658 people per year during the 1990 to 2000 time period. The rate of growth for the metropolitan area will decrease to 10,489 people per year during the 2000 to 2010 time period.

Population Change Implications

Projections of moderate population growth reflect assumptions about future local conditions. The projections of population growth projected for Columbus, Franklin County and the metropolitan area assume that local economic expansion will continue, and provide a sufficient base to support an increased population.

Adding to the effects of moderate population growth, Columbus and Franklin County will experience changes in the character of its population. Demographic changes underway in the 1980s will continue to influence aging patterns in the future. The next twenty years will see an increase in certain age groups and a decline in others. The largest segment of the population will stretch well into the middle years of life and over 41.8 percent of the metropolitan area population will be between the ages of 30 to 59 in the year 2010.

In effect, the Columbus metropolitan area population will become more heavily middle-aged over the next twenty years, having a substantial number of people in the advanced age brackets. Such shifts will result in different patterns of population and household growth, and will also bring about fundamental changes in income and employment.

The natural increase in population will slow, based on the number of people in the primary child-bearing years. Since this natural increase in population has been a mainstay of continuing population growth in central Ohio, the increase in rates of population growth that have been occurring over the last few years should slow. Similarly, the decline in the number of people in those age cohorts where household formation occurs most heavily, should further reduce the rates of household formation that the Columbus area has been experiencing.

The decrease in the formation rate of new households will have an impact on the demand for new housing. The total level of new housing starts is expected to fall gradually, and the nature of housing demand will continue to favor the smaller size homes necessary to maintain smaller households. The average value per housing unit, however, may increase, to reflect the increased affluence of a middle-aged population in their peak earning years.

The economic implications of the aging population are also substantial. The wealth effect should allow for higher levels of expenditure on both large scale and small scale purchases. It may be that the marketing of the future will need to focus on increasing the average value of each unit sale, rather than increasing the total volume of goods and services sold. The potential increases in disposable income should continue to support expansion in markets for high-technology consumer goods while also serving the health needs of a population that will be becoming increasingly conscious of the problems of aging.

The structure of the labor market will also face stresses from this shift in population age distribution. The bulge in population will tend to oversupply the middle management levels of most organizations, and the sheer numbers of employees in the older age groups should limit the possibilities of advancement for younger age groups. This effect should be especially noticeable in organizations that are broadly based, with very few supervisory positions. The shortage of new entrants in the labor force will also make it increasingly difficult to fill entry-level positions in the job market, and the competitive pressure to fill these jobs may drive wages up faster than historic experience would suggest. One possible result of shortages in the labor force would be an increase in inmigration patterns in the city of Columbus, Franklin County and the Columbus MSA.

Economic Patterns of Growth

Economic factors are central to growth and change in the Columbus area. The population growth and the transformations in the built environment discussed elsewhere in this report are in part consequences of central Ohio's economic performance. Measures of economic performance particularly relevant to regional growth are changes in employment and earnings. This section of the Growth Statement reports on employment and earnings trends in central Ohio industries and discusses related labor force developments.

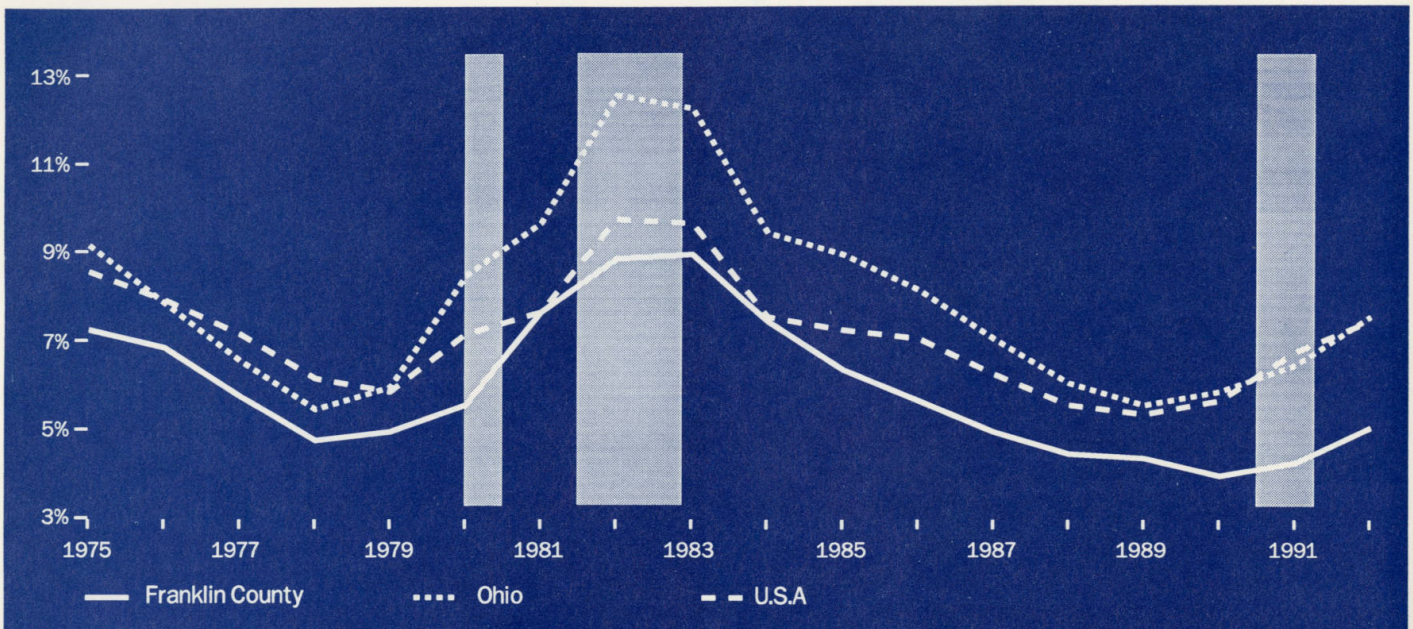
Job creation and population growth interact in the regional economic development process. Job creation encourages population growth by retaining central Ohio's existing residents and stimulating migration to the region. As the number of households (consuming units) increases, so also does the quantity demanded of housing units, retail goods, general services, educational services and local government. Population growth thus stimulates job creation.

The Columbus area has experienced substantial job creation in the last decade. Local employment growth surpassed both state and national rates of growth. As could be expected, the total wage bill for the Columbus area also grew at a rate higher than those for the state and the nation. Manufacturing, never dominant in Columbus in terms of the number of jobs, continued to shrink in employment while industries in the service-producing sector continued to expand. The unemployment rate was significantly lower than the state rate throughout the last decade, and lower than the national rate in eight of the last ten years. Long term forecasts indicate continued employment growth in central Ohio.

Detailed economic data are presented in Appendix B: Tables E-1 through E-13. In assessing economic trends, 1992 data are often compared with 1973 and 1979 data in this section. The years 1973 and 1979 are performance benchmarks because they mark national business cycle peaks as well as local manufacturing employment peaks. The Columbus MSA definition used here is Franklin County (the central county) and the six contiguous counties (Delaware, Fairfield, Licking, Madison, Pickaway and Union).

The Ohio Bureau of Employment Services (OBES) is a primary source of data for the tables and analysis in this section. OBES publishes two different statistical series on employment, Series 790 (See

Figure E-1: **Unemployment Rates 1975 to 1992**



The Franklin County unemployment rate for 1980 through 1992 averaged 2.3 percentage points below the Ohio rate and 1.2 percentage points below the U.S. rate. Note the relatively small increase in local unemployment as a result of the 1990-1991 recession. Shading indicates recessions as designated by the National Bureau of Economic Research, Inc.

Appendix B: Table E-1) and Series 203 (See Appendix B: Table E-8). The two differ in data definitions and collection techniques and thus vary somewhat in their resulting employment statistics.

Historic Employment Trends

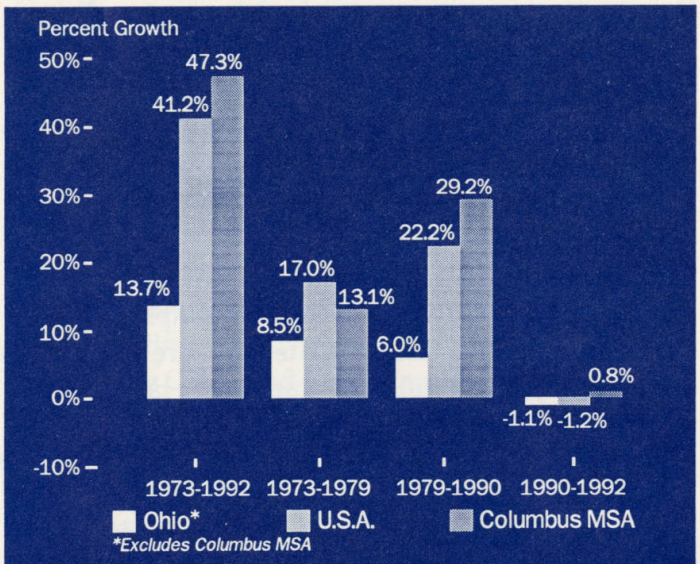
The most fundamental measure of the health and strength of any economy is its ability to provide employment for its labor force. The employment growth rate and the unemployment rate are important measures of a community's economic performance.

The annual unemployment rate in Franklin County from 1980 through 1992 averaged 5.9%, 1.2 percentage points lower than the national rate and 2.3 percentage points below the Ohio rate. (See Appendix B: Table E-2 and Figure E-1.) The city of Columbus and the MSA tend to have somewhat higher unemployment rates than Franklin County, yet also lower than the national and state averages. The annual unemployment rate for Columbus city from 1983, when separate data for the city first became available, through 1992 averaged 6.3% while the MSA averaged 5.9% for the same years. The Franklin County unemployment rate between 1983 and 1992 averaged 5.5%.

The annual rate of unemployment in Franklin County declined from a 1983 high of 8.9% in the wake of the 1981-82 national recession to a low of 3.9% in 1990. (See Appendix B: Table E-2.) Figure E-1 suggests that while not immune to broad economic trends, the local economy is resilient compared to both Ohio and the nation. In 1982, at the height of the 1981-82 recession, the unemployment rate in Franklin County stood 0.9 percentage points below the national rate. While the local unemployment rate registered its low point of 3.9% in 1990, the national rate was already climbing in response to the recessionary climate that began mid-year in 1990. The national unemployment rate rose to 7.4% in 1992, but local unemployment increased to only 5.0%.

The impact of the recent recession on the Columbus area economy has been milder than in past recessions. This has also been true, overall, of Ohio. Although the recent recession is shallow compared to past recessions in terms of job loss, employment has been slower to recover locally as well as nationally. The trend toward leaner and more productive companies that became evident in manufacturing in the last decade has spread to some service industries. While beneficial in the long term,

Figure E-2: **Employment Growth Performance**



From 1973 to the present, local employment growth has led state growth by an impressive margin. During the period 1979-1990, local employment growth exceeded national growth by seven percentage points. In 1990-1992, a period of recession and slow recovery, Columbus fared relatively well.

this trend can be expected to dampen employment recovery and future growth in the large service sector. The recent, and atypical, drop in FIRE employment from 1991 to 1992 may signal the appearance of this trend in Columbus. (See Appendix B: Table E-1.)

The 1992 unemployment rate of Franklin County was 5% representing approximately 26,900 unemployed persons. In the metropolitan area as a whole, 40,300 persons were unemployed in 1992, for an unemployment rate of 5.4%.

Comparisons of the rate of employment growth in Columbus to growth in Ohio and the nation testify to the vitality of the Columbus economy. (See Appendix B: Table E-3 and Figure E-2.) From 1973 to 1992, Columbus MSA employment increased by a total of 47.3%, a rate higher than the national growth of 41.2%. Ohio as a whole has tended to lag behind the local and national growth rates, gaining only 17.7% in employment from 1973 to 1992. If Columbus MSA employment is extracted from the Ohio total, moreover, the state growth rate for 1973 to 1992 drops to only 13.7%.

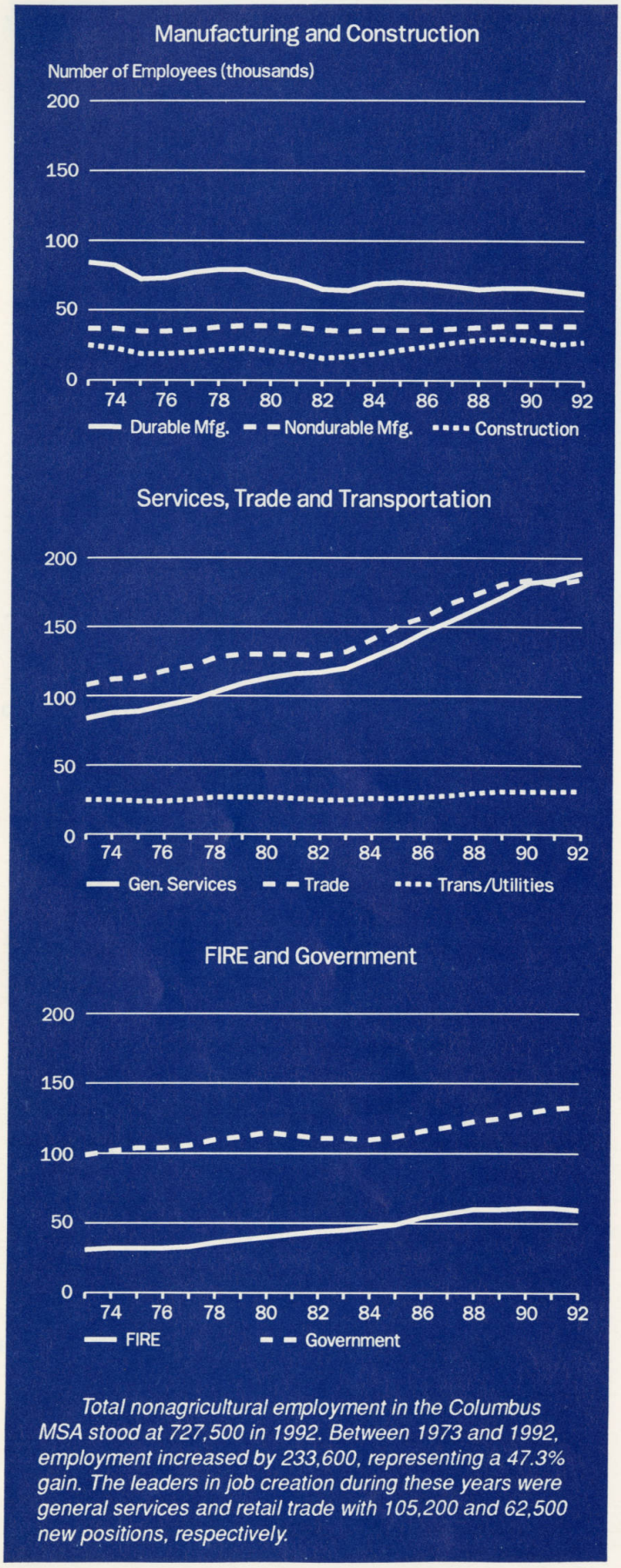
Growth of the Columbus area economy accelerated after 1979. (See Figure E-2.) During the 1970s, local economic performance was respectable. Even though employment growth occurred at a significantly lower rate than in the nation as a whole, Columbus still led Ohio in job creation. From 1973 through 1979, the Columbus area generated 64,600 new jobs, 17% of all the new jobs produced by the Ohio economy during the period. Since 1979, though, the Columbus area has consolidated its role as the major job generator in Ohio. Despite the loss of some 16,000 jobs during the 1981-1982 recession and a drop of 2,600 jobs from 1990 to 1991, over the 1979-1992 period the MSA registered a net gain of 169,100 jobs. This 30% employment growth in the Columbus MSA from 1979 to 1992 compares favorably with the national growth of 21% and is exceptional in Ohio, which experienced only 8% employment growth over 1979-1992.

From 1979 to 1990, when Columbus and Ohio employment peaked prior to the most recent recession, the Columbus area economy generated fully 41% of Ohio's new jobs, though accounting for only 13% of the state's population. Throughout the latter half of the 1980s, Columbus MSA employment grew at an average annual rate of around 3.6%, adding an average of 23,600 jobs a year. In reaction to the national economy which began to worsen in mid-year 1990, Columbus MSA employment dropped by 2,600 from 1990 to 1991, a decline of 0.4%. This was only one third of the rate of national employment decline, 1.3%, from 1990 to 1991. Ohio employment during the same period, excluding the Columbus MSA, declined by 1.5%. Thus, compared to Ohio and the nation, the Columbus economy has enjoyed substantially higher employment growth during the expansionary years of the 1980s and a milder downturn during the recent recession.

The Columbus area economy resumed its employment growth in 1992. Annual average employment for 1992 was 727,500, a gain of 8,400 jobs (1.2% growth rate) over 1991. During 1992 the national economy experienced a minimal 0.1% rate of employment growth.

One factor in the resilience Columbus has shown in the recent downturn is the industrial composition of the local economy. Highly volatile industry groups such as durable manufacturing and construction are comparatively small in size locally while the traditionally more stable industry groups such as government (including education) and general services are large in Columbus.

Figure E-3: **Employment Shifts 1973 to 1992**



Total nonagricultural employment in the Columbus MSA stood at 727,500 in 1992. Between 1973 and 1992, employment increased by 233,600, representing a 47.3% gain. The leaders in job creation during these years were general services and retail trade with 105,200 and 62,500 new positions, respectively.

Employment Growth By Industry Division

The national trend of employment shifting to the service-producing sector has been more pronounced in Columbus than in many other cities and has enhanced Columbus' ability to withstand economic downturns in business cycles. This section reports on the performance of the major employment divisions in the Columbus economy and discusses shifts that have occurred during the last two decades in industrial composition. The local agriculture and mining divisions, minor in terms of employment size, are not discussed separately but are included in the employment totals in the appendix tables. Figures E-3, E-4 and E-5 in the text and Appendix B: Tables E-4 and E-5 present details of the employment shifts. The discussion of industry performance is based on the OBES 790 employment series and the evaluation of industry growth prospects is based on the recently released Columbus MSA Projections 1991-2000 (OBES, 1993).

Manufacturing

Manufacturing employment in the Columbus MSA over the last several decades has been characterized by a long term trend of employment decline punctuated by short term fluctuations in response to a variety of economic conditions. (See Figure E-3.) The employment volatility of the manufacturing division, particularly durable goods, is widely recognized.

Manufacturing is the only division that experienced a net decrease in employment between 1973 and 1992. As Appendix B: Table E-1 indicates, the job loss was concentrated in the durable goods industries. Despite the shrinking size of employment, manufacturing is a key division of the economy, local no less than national. Manufacturing, because of its strong export orientation, has always figured as a cornerstone of the economic base. It maintains a rich array of backward and forward linkages to the service sector as purchaser of services and supplier of equipment and materials. Finally, the manufacturing division is a significant source of much of the research, development and technological innovations that shape the competitiveness of national and local economies.

The trend has been for manufacturing jobs to decrease as a share of all employment despite occasional small increases in the absolute number of manufacturing jobs. This trend is decades old but became more pronounced during the 1970s and

1980s when manufacturing as a share of all nonagricultural employment at the national level went from 27% in 1970 to 22% in 1980, then to 17% in 1992. In comparison with the nation and especially the Columbus area, Ohio still has a high percent of employment in manufacturing, 22% in 1992 (down from 36% in 1970).

Manufacturing in the Columbus MSA accounted for 101,000 jobs in 1992, 14% of the nonagricultural total. In 1973, manufacturing's share stood at 24% of the total MSA jobs. The current concentration of manufacturing employment in Columbus is less than in either the Cleveland or Cincinnati metropolitan areas, which have 20% and 19% of total employment in manufacturing, respectively. The Columbus economy's relatively mild reaction to the several recessions of the last dozen years is at least in part attributable to the area's smaller than average manufacturing division.

The decrease in manufacturing employment masks the importance of this industry division to the local economy. The total wage growth contributed by the manufacturing division to the local economy is of great benefit despite the lack of growth in the number of manufacturing jobs. (See Figure E-10.) Appendix B: Table E-8 reports on both employment and wages. While the number of local manufacturing jobs decreased by roughly 15,000 between 1979 and 1991, total wages from manufacturing grew by $1.3 billion, not adjusted for inflation. Jobs in the comparatively large general services industry division increased by almost 72,000 during 1979-1991, yet total wages in this division grew by only $2.6 billion, not adjusted for inflation. Total wages in manufacturing thus grew by 52% of the total wage growth of the general services division, despite the fact that manufacturing is a small division which lost jobs while general services is a large division with fast growing employment. Average wages in the two divisions experienced similar rates of growth between 1979 and 1991. (See Appendix B: Table E-9.) Yet because the typical manufacturing wage is at such a higher level than the typical wage in general services, similar rates of growth in average wages over time can generate large dollar impacts for the local economy from manufacturing.

A second aspect of manufacturing is that decreasing employment does not necessarily mean shrinking output. In fact, employment reductions in manufacturing can occur because of technological and organizational improvements. The results can be higher productivity and increased local competitiveness. Data from the Cleveland Federal Reserve's Ohio Manufacturing Index indicate that output in manufacturing increased statewide by 40% from 1979 to 1991, despite the loss of 314,000 manufacturing jobs statewide, a decrease of 23%.

Manufacturing employment in the Columbus MSA peaked in 1973 at 120,700, fell 14,100 by 1975, then rose to another high in 1979. As a result of the 1981-82 recession manufacturing employment dropped 19,100 from the 1979 level to a new low of 98,700 in 1983. Employment recovered to a post-recession peak of 106,100 in 1985, declined to 102,600 in 1988, then stabilized in 1989 and 1990 at around 104,800. Between 1990 and 1992, hit by the recession, manufacturing employment fell by 3,800 jobs. This 3.6% drop in local manufacturing employment is a milder reaction to the recession than that experienced by either the state or the nation. During the same time (1990-1992), manufacturing employment in the state decreased by 5.5% and in the nation by 4.8%. Within the manufacturing division the durable goods industries have been responsible for most of the volatility and employment loss.

Employment dropped by a total of 21,400 in durable goods industries as a whole from 1973 to 1992, but employment declines were not universal even in durable goods. The transportation equipment industries increased in employment by 4,700 partly as a result of Honda of America Manufacturing, Inc. which began auto production in Union County in 1979. Since that time, at least 60 other Japanese ventures have located in the Columbus MSA, mostly manufacturers with strong ties to Honda. Employment growth in transportation equipment industries, however, has levelled off since 1986. Another area of durable manufacturing that has shown some growth in employment is instruments and related products. This industry grew by 3,100 employees from 1973 to 1992. Durable manufacturing as a whole, however, declined as a share of total employment from 16.9% in 1973 to 8.5% in 1992.

Nondurable manufacturing accounted for about 38.6% of total manufacturing employment in 1992, up from a 30.8% share in 1973. As a share of total MSA employment, nondurable manufacturing went from 7.5% in 1973 to 5.4% in 1992. In terms of absolute numbers, overall employment in

nondurable manufacturing has been essentially flat since 1973. Three areas of modest growth have been printing & publishing, rubber and miscellaneous plastics products, and chemical & allied products. Together these three areas have grown by 7,400 employees since 1973.

Manufacturing will probably be a source of little, if any, local employment growth in the 1990s despite its importance in other ways to the local economy. The Ohio Bureau of Employment Services forecasts a slight decline for the Columbus MSA in durable manufacturing employment and only a modest growth in nondurable manufacturing to the year 2000. As a whole, manufacturing in Columbus is predicted to have an employment gain of only 900 jobs between 1991 and 2000. This is a slightly more optimistic prediction than for Ohio, which is projected to lose 800 manufacturing jobs by the year 2000. Thus, manufacturing employment for the remainder of the decade is expected to remain essentially constant at present levels. Unforeseen events and trends, however, such as a sharp change in energy costs, a rise or fall in the dollar's value, trade agreements, or international conflicts, could have more dramatic employment impacts on the volatile manufacturing division than on other divisions.

Construction

The construction division accounted for 27,600 jobs in 1992, making up only 3.8% of total employment in the Columbus MSA. This share is roughly the same as for Ohio, but less than for the U.S. When comparing growth in construction employment between 1973 and 1992, the increase is a modest 10%. Construction is highly sensitive to economic conditions and experiences wide fluctuations in employment between economic contraction and expansions. In the recessionary climate of 1982, for example, construction employed only 16,000 persons locally while in 1989, when construction peaked before the 1990-1991 recession, employment reached 29,700. The most recent recession resulted in the loss of some 2,400 construction jobs between 1990 and 1991. This setback has been mild and is only temporary. When 1990 is used as the end point for long term comparison instead of 1992, growth in construction since 1973 is seen to have been 16%. The latter rate is viewed as a more reasonable indication of the construction division's rate of growth over the last two decades than the 10% computed using 1992 as an endpoint.

Construction employment is projected to increase modestly through the year 2000 to roughly 30,900, or 1.9% annually, a somewhat higher rate of increase than for local employment as a whole (1.5% annually). As in the case of manufacturing, the construction industry tends to be highly sensitive to economic conditions but the small size of the division in Columbus mitigates the impact of construction job losses during economic downturns.

The Service-Producing Sector

The other major sector of the economy is the service-producing sector. The industries categorized as service-producing are extremely varied, ranging from legal services and banking to eating and drinking places and variety stores. This sector includes the major categories of transportation/public utilities/communications, wholesale trade, retail trade, finance/insurance/real estate (FIRE), general services and government. The general services division of the service sector includes business, social, legal and health services, as well as hotel, repair and amusement services. The service-producing sector is frequently dismissed as non-basic or derivative, with jobs viewed as dependent on the goods-producing sector. Some service-producing industries, however, are important contributors to the local export base, creating valuable services and information locally and selling them to nonresidents. Examples include insurance, security brokerages and dealers, hotels and motels, electric services, advertising, legal, health, accounting, architectural, engineering, research and educational services.

The shift of employment to the service-producing sector of the economy has been an established trend for decades, both nationally and locally. (See Figure E-3.) Currently, around 82% of Columbus MSA employment belongs to the service-producing sector compared to 78% nationally and 74% in Ohio. Since 1973, service-producing employment in the Columbus MSA increased by 251,300, to a total of 598,200 in 1992. (See Appendix B: Table E-4.) During the same time the goods-producing sector declined by 17,700 employees. There is no doubt that the steady employment growth Columbus has enjoyed is a result of the expansion of the service-producing sector.

It is the large size and diverse composition of Columbus' service-producing sector that has

provided the local economy with its resilience to national business cycles and its strong record of employment growth. In 1975, manufacturing and construction employment were both down from their 1973 levels, but the 14,100 increase in the number of service-producing jobs between 1973 and 1975 cushioned the impact of the recession on the local economy. During the 1982-83 period, manufacturing was again down substantially from both the 1973 and 1979 peaks, but services employment was down only marginally. As a result of the most recent recession, employment fell by 4,500 in the local goods-producing sector between 1990 and 1991, while the service-producing sector helped to make up the shortfall with an increase of 1,900 jobs. (See Appendix B: Table E-1.)

OBES projects a service-producing sector of 677,500 jobs in the Columbus MSA by the year 2000. This OBES projection is based on 1991 service sector employment and assumes a 1.7% average annual growth rate through the year 2000 (compared to an average annual growth rate of 1.5% for all nonagricultural employment in the MSA). The 1.7% annual rate of employment growth projected by OBES is less than half the annual rate of growth the local service sector has experienced during the past two decades.

Wholesale Trade

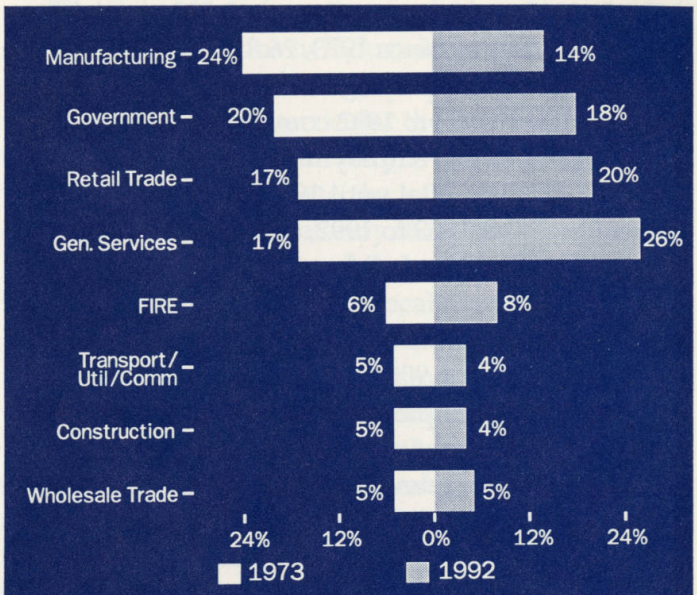
Wholesale trade employed 36,500 persons in 1992, or about 5% of total employment in the Columbus MSA. This is a slightly smaller proportion than the wholesale industry nationally. Employment increased in wholesale trade by 6,200 during 1973-1979, and by a further 7,400 between 1979 and 1990. The recession caused a small drop of 200 jobs in wholesale employment from 1990 to 1991. Over the entire period 1973 to 1992, the increase of 13,800 wholesale jobs translates to a growth rate of 60.8%, better than the 47.3% average for all local industry.

The Ohio Bureau of Employment Services projects wholesale trade employment to grow to 38,700 by the year 2000, reflecting a 0.8% annual rate of growth, about half of the 1.5% annual rate projected overall.

Retail Trade

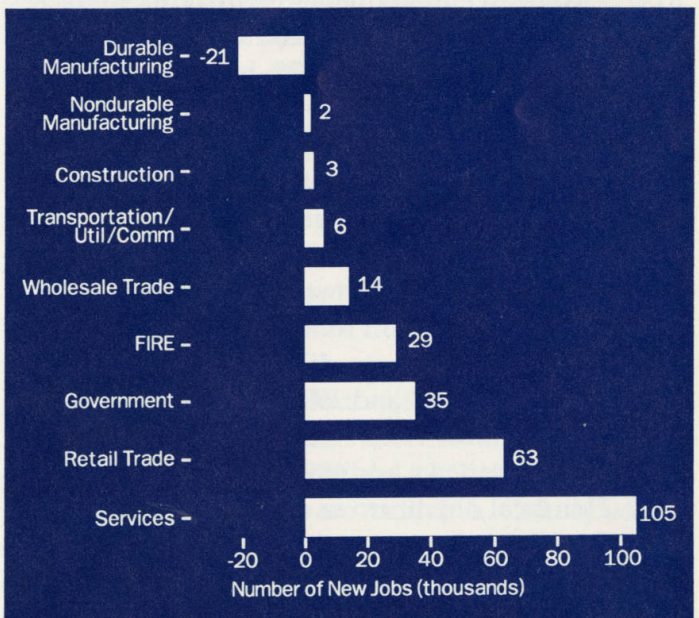
Retail trade has been a relatively fast-growing division in Columbus and the share of retail trade in the local economy is somewhat larger than in the nation as a whole. Retail accounts for about 17.6% of

Figure E-4: **Employment Share by Industry 1973 and 1992**



Employment shifted away from manufacturing and towards the production of services. General services, retail trade and FIRE grew to 54% of total employment in 1992, up from 41% in 1973.

Figure E-5: **Net Change in Employment by Industry 1973 to 1992**



Employment losses were concentrated in durable goods manufacturing. General services and retail trade, together, contributed 72% of the total job growth since 1973.

nonagricultural employment nationally; locally the figure is 20.4%. Retail trade employed 148,200 in the MSA in 1992 and has contributed 62,500 new jobs to the MSA economy since 1973, 26.8% of all new job creation locally. Employment has increased in retail by 72.9% from 1973 to 1992 compared to 47.3% growth for all MSA employment. Retail employment growth was rather flat until 1983 but took off thereafter. From 1983 to 1992, retail added 45,300 new jobs, fully 27% of all local job creation during that time.

The recession that began in 1990 resulted in the temporary loss of 1,900 retail jobs in the MSA from 1990 to 1991, an employment drop of 1.3%. This loss of retail employment was similar in proportion to that experienced statewide, and less than the -2.1 decrease in retail employment nationwide. Growth resumed locally in 1992, with a gain of 2,700 jobs, for an increase of 1.9%.

OBES projects retail trade employment to grow to 169,000 by 2000. This assumes an annual growth rate of 1.9%, somewhat higher than the average of 1.5% for all local industry.

Finance, Insurance, Real Estate (FIRE)

The FIRE industry division consists of banking, credit institutions, security and commodity brokers, insurance, and real estate, holding and investment offices. FIRE's employment rose by 28,900 from 1973 to 1992, a growth of 94% for the division compared to 47.3% overall employment growth. This sector's 1992 employment of 59,600 accounts for 8.2% of all MSA employment, up from 6.2% in 1973.

Twelve percent of all new jobs created since 1973 in the Columbus MSA have been in FIRE, an impressive proportion given the small initial size of the division. High average wages in the FIRE division amplify the economic impact of this division's employment growth. (See Figures E-10 and E-12.) FIRE's growth record has been remarkable, increasing steadily since 1973 in all years save three (1975, 1991 and 1992). The latest recession resulted in a loss of 1,100 FIRE jobs from 1990 to 1991, a 1.8% drop. An additional 200 jobs were lost in 1992. This local downturn in employment parallels the national trend and signals a conscious strategy by companies in banking, financial services, insurance and other FIRE industries to forge leaner, more productive, organizations. The more effective use of computer and telecommunications technologies, and the re-engineering of the work process, are widely anticipated to result in slower employment growth as well as reduced need for office space.

Reflecting these recent industry developments, the newly released OBES projection assumes a 1.4% annual rate of growth for FIRE, lower than the previous projection. This is slightly lower than the 1.5% average assumed for all nonagricultural employment in Columbus and much lower than historical growth rates for FIRE. OBES projects FIRE employment to grow to 68,800 by the year 2000.

General Services

General services is an extremely large and diverse employment division, accounting for 189,100 jobs in the Columbus MSA in 1992. It includes some of the lowest as well as the highest paying jobs, those requiring highly developed skills and knowledge as well as jobs requiring little formal education. Accountants, physicians, and research scientists work in the general services division as well as laundromat attendants and cinema ushers. General services has certainly been a growth division in Columbus in terms of employment. General services grew by 105,200 jobs between 1973 and 1992, for a growth of 125.4%. This was two-and-a-half times the rate of employment growth overall in the MSA. Forty-five percent of all new jobs in the MSA were created by the general services division between 1973-1992. As a result of this impressive growth, the share of general services in total MSA employment rose from 17% in 1973 to 26% in 1992. The relative employment size of the general services division in the Columbus MSA is about the same as in the nation.

Employment growth in the general services division was extremely robust in the face of national recessions in 1974-75, 1980, and 1981-82. Growth slowed somewhat during those periods, but remained positive, and recovery was quick. Growth from 1990 to 1991 was 1.7%, or 3,100 new jobs, and from 1991 to 1992, 2.2%, or 4,100 new jobs. This was a stronger performance than for Ohio or the nation. The general services division, like trade, has contributed more to the local economy in terms of jobs than wages because of relatively low wage levels. There has, however, been significantly more growth in the average wage level in general services than in retail. (See Appendix B: Table E-9 and Figure E-12.)

OBES expects employment in general services to increase to 226,700 by the year 2000. This assumes a

2.6% annual rate of growth, significantly higher than the annual average of 1.5% predicted for the MSA.

Government

Federal, state and local government employed 133,500 persons in the Columbus MSA in 1992. Since 1973, government has added 35,000 new jobs to the area economy, an increase of 35.5%. This rate of increase is more modest than the 47.3% rate of overall employment growth the MSA experienced from 1973 to 1992. Although government employment has risen in absolute numbers, its share of total employment decreased from 19.9% in 1973 to 18.4% in 1992. The drop in local share was due to the rapid growth of large divisions such as general services and retail. Nationally, 17.1% of nonagricultural employment falls into the government category. The Columbus area's relatively large proportion of government employment is a result of being the state capital and home to one of the nation's largest state universities. Within the government division, state and especially local government employment have expanded while federal employment has remained virtually unchanged. Local government employment in education grew by 54.7% since 1973 while local non-education employment grew by 46.6%. These rates of growth are similar to the average of 47.3% for the MSA over the period from 1973 through 1992. State employment, aside from the education segment, grew by 36.4% between 1973 and 1992. State education employment grew by 30.2% over the 1973 level.

The government division locally was not immune to the recessions of the early 1980s. Employment declined from 1981 through 1984 before beginning to grow again in 1985. During the most recent recession, though, government employment continued to grow, helping to compensate partially for the effects of employment losses in manufacturing, construction and retail trade. Compared to the 1.6% increase in government employment from 1990 to 1991 in the Columbus MSA, the state experienced a 0.8% increase and the nation a 0.4% increase. Locally, employment in the government division continued to grow at about a 1.6% annual rate in 1992.

OBES predicts future employment growth in the government division to continue through the year 2000 at an annual rate of only 0.5%, or one-third of the annual rate of 1.5% for all industry. In the year 2000, employment in the government division is projected to be 138,100.

The Columbus area economy has undergone substantial alterations in industrial composition since 1973, sharing in changes that have occurred at the national level, in particular the national trend towards a small manufacturing work force and a large service sector. Due to the longstanding diversity of the local economy these changes have not been as wrenching as elsewhere. It would seem that a substantial segment of local manufacturing is stabilizing and future employment losses, if any, will have less impact on the local economy than in the past. Manufacturing will continue to be an important element in area economic growth beyond its significance in employment numbers. Government remains a source of relative stability, of slow and steady employment growth. Trade and general services will continue to be the divisions responsible for the most of the employment increases in the Columbus area and will set the pace for the overall employment growth rate in the Columbus MSA.

Growth in the Number of Establishments

U.S. Bureau of the Census data, reported in *County Business Patterns*, on the number of establishments indicate that the Columbus area offers highly attractive conditions for business. Establishments are defined as "a single physical location at which business is conducted or where services or industrial operations are performed." Vigorous growth in the number of establishments from 1980 to 1990 is evidence that the Columbus economy is a nurturing environment for the formation of new firms and new branches of existing firms. In particular, a healthy birth rate for new firms is important in sustaining a region's economic growth. (See Appendix B: Table E-6 and Figure E-6.)

The total number of establishments in all business sectors in Franklin County grew by 43% from 1980 to 1990. In comparison, the average growth rate in Ohio, excluding Franklin County, was 22%. Nationwide, the number of establishments grew by 32% between 1980 and 1989, the most recent year for which U.S. data are available. Columbus' strong performance in generating new establishments is dramatic compared to the record for the central counties of Ohio's other large metropolitan areas. From 1980 to 1990 growth in the total number of establishments was 15% in Cuyahoga County (Cleveland), 26% in Hamilton

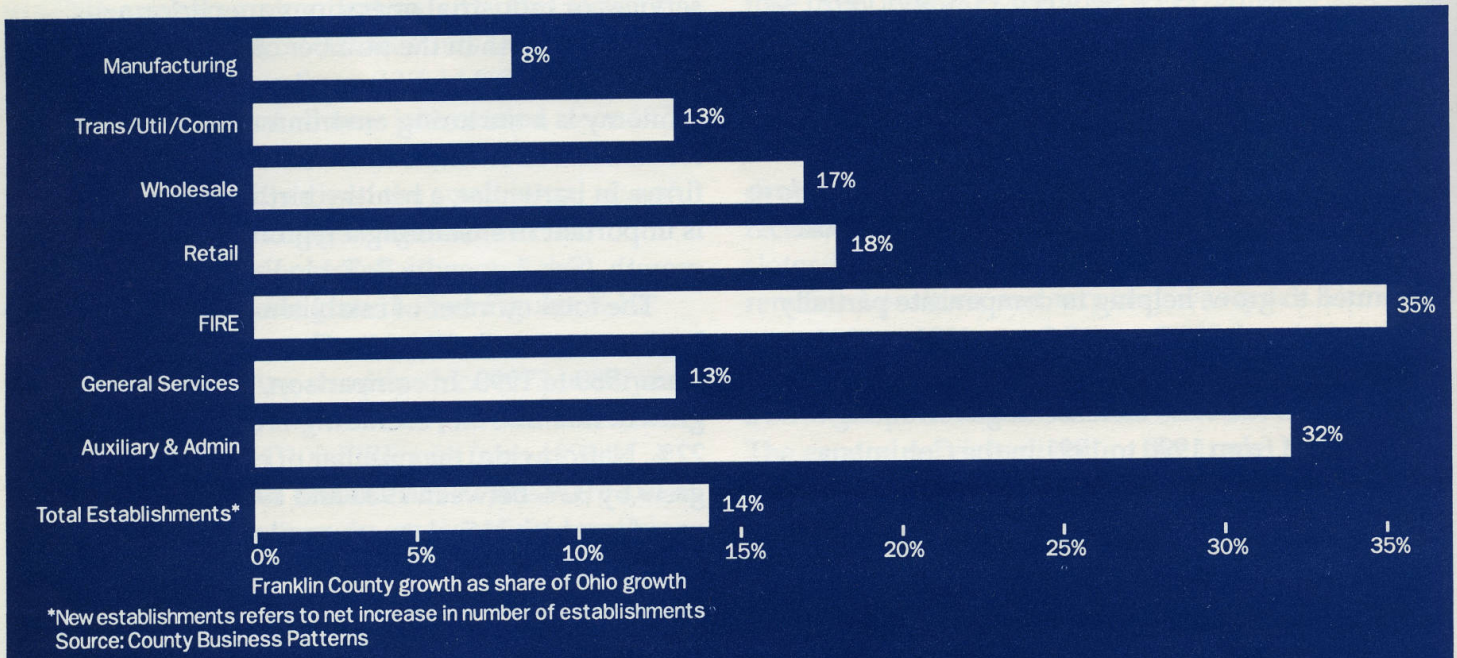
County (Cincinnati), and 22% in Montgomery County (Dayton).

Within the Columbus MSA, growth in the number of establishments is highly concentrated in the central county (Franklin). Between 1980 and 1990, 78% of the increase in the number of establishments in the 7-county Columbus MSA took place in Franklin County. (See Appendix B: Table E-6.) Much of the growth in Ohio's other large MSA's took place outside the central county. Only 58% of the 1980-1990 increase in the number of establishments in the four-county Cleveland MSA occurred in Cuyahoga County. In the seven-county Cincinnati MSA, Hamilton County accounted for only 57% of the growth. About 49% percent of the 1980-1990 growth in the number of establishments in the four-county Dayton-Springfield MSA occurred in Montgomery County. Growth differentials persist, albeit to a lesser extent, when entire MSA's are compared instead of just central counties. The number of establishments increased from 1980 to 1990 by 39% in the Columbus MSA, by 22% in the Cleveland MSA, by 34% in the Cincinnati MSA and by 24% in the Dayton-Springfield MSA.

The industry divisions in Franklin County that experienced the most pronounced growth in establishments numbers from 1980 to 1990 were general services (57%), transportation, communications & utilities (56%) and FIRE (40%). Within the general services industry division, the business services and social services industries are of special note for their rapid growth. In the transportation, communications & utilities industry division, the outstanding areas were the air transportation and transportation services industries. Within FIRE, industries showing the most growth were depository institutions, security & commodity brokers, and holding & investment offices.

Columbus' high growth rate in the number of FIRE establishments is unique in Ohio. Excluding Franklin County, the 1980-1990 statewide growth in the number of FIRE establishments was only 9%. Franklin County achieved a 41% increase in the number of FIRE establishments between 1980 and 1990, with a 37% rate for the Columbus MSA. In Cuyahoga County, growth in the number of FIRE establishments was only 3% during the same time period, compared to a 6% growth rate for the entire Cleveland MSA. Hamilton County experienced 15% growth in the number of FIRE establishments during the decade, with a 20% rate for the Cincinnati MSA. Montgomery County had only 4% growth in the

Figure E-6: **New Establishments in Franklin County As a Percent of New Establishments in Ohio, 1980 to 1990**



*New establishments refers to net increase in number of establishments
Source: County Business Patterns

Franklin County generated an impressive share of Ohio's growth in the number of administrative and auxiliary establishments, a category which includes company headquarters as well as back office operations. Equally notable is the large increase in the number of new FIRE establishments.

number of FIRE establishments from 1980 to 1990, with a 6% rate for the Dayton-Springfield MSA. These numbers imply that the Columbus area has recognized advantages for the formation of new firms and branches in the important FIRE industry division.

It is interesting to note that the central Ohio area experienced strong growth in the number of manufacturing establishments compared to areas in Ohio where manufacturing is traditionally more dominant. The number of manufacturing establishments grew by 20% in the Columbus MSA between 1980 and 1990. In Ohio as a whole, growth was 13% between 1980 and 1990. The Cincinnati MSA and the Dayton-Springfield MSA experienced growth rates of 19% and 18%, respectively, following the Columbus pattern. In contrast, the Cleveland MSA, despite a manufacturing tradition, achieved only a 3% increase in the number of manufacturing establishments during the decade.

County Business Patterns also contains information on the number of auxiliary and administrative establishments. This is the category that includes corporate headquarters and other establishments that "manage, administer, service or support establishments of the same company." Columbus experienced rapid growth in these important corporate functions during the 1980s. The number of auxiliary and administrative establishments in Franklin County increased by 61% over the decade, with a net increase of 168 establishments. This represents nearly one-third of Ohio's growth in the number of auxiliary and administrative establishments from 1980 to 1990. (See Figure E-6.) The Columbus growth record for the number of new auxiliary and administrative establishments is sharply higher, in absolute and percentage terms, than the increases experienced in the Cleveland, Cincinnati and Dayton-Springfield areas.

Of particular note is the rapid growth during the last decade in the number of auxiliary and administrative establishments in three industry divisions: transportation, communications & utilities; retail trade; and FIRE. By 1990, Franklin County accounted for 22% of all the state's auxiliary and administrative establishments in transportation, communications & utilities, up from 16% in 1980, 25% in retail trade, up from 15% in 1980, and 26% in FIRE, up from 16% in 1980.

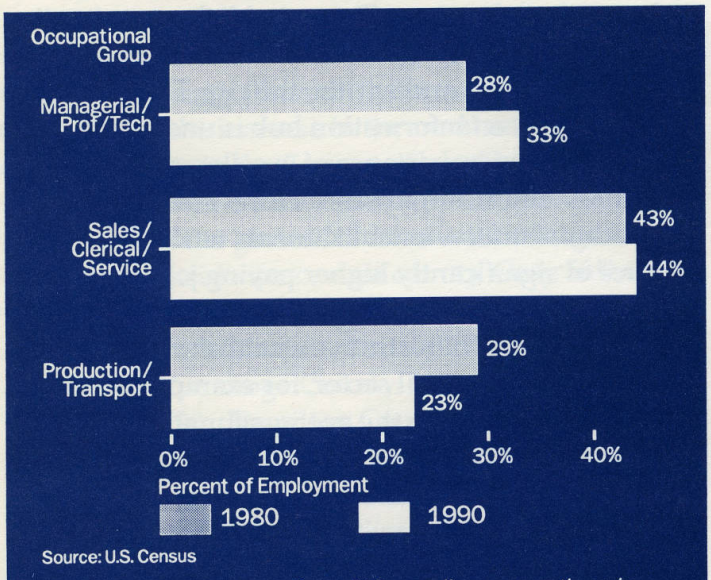
This growth indicates that Columbus is home to an increasing number of corporate headquarters and is acquiring stature as a corporate control center. The proliferation of corporate headquarters and other administrative and auxiliary establishments implies substantial growth in the volume of information flowing to, from, and within, the city. The view of Columbus as an information hub is underscored as is the continuing importance of excellence in the area's telecommunications infrastructure. Also, auxiliary and administrative establishments tend to be a source of significantly higher paying jobs than other establishments. The average annual wage in auxiliary and administrative establishments belonging to the retail sector, for example, was $24,410 in 1990 while the average for all retail establishments was only $13,465 (*County Business Patterns*). For these reasons and others, the Columbus area has benefitted from the surge it has experienced in the number of auxiliary and administrative establishments.

Occupational Composition

An analysis of the occupational profile of employment in the Columbus MSA, and the changes in this profile over the last decade, offers insights on the transformations taking place in the local work force. The following discussions of local occupational change are based on 1980 and 1990 Census data. Occupations in this analysis are grouped into three broad categories based on general tendencies in educational, skill and wage levels and blue-collar/white-collar distinctions. (See Appendix B: Table E-7, Figures E-7 and E-8.) Group I includes the high-wage, high-education/skill, service-sector occupations: executive, managerial, administrative, professional specialty, technicians and related support occupations. Group II includes the relatively low-wage service-sector occupations such as administrative support. Group III is made up of the typical blue-collar occupations of the goods-producing sector such as precision production, machine operators, material movers, and laborers.

Appendix B: Table E-7 gives 1980 and 1990 size and growth statistics for the three occupational groups described above. The highest rates of growth from 1980 to 1990 in the Columbus MSA were experienced in the Group I occupations (executive, managerial, administrative, professional and technical) and in sales occupations (Group II). Growth in the Group I occupations added 67,073 jobs to the MSA economy during 1980 to 1990, while growth of sales occupations added 26,637 new jobs.

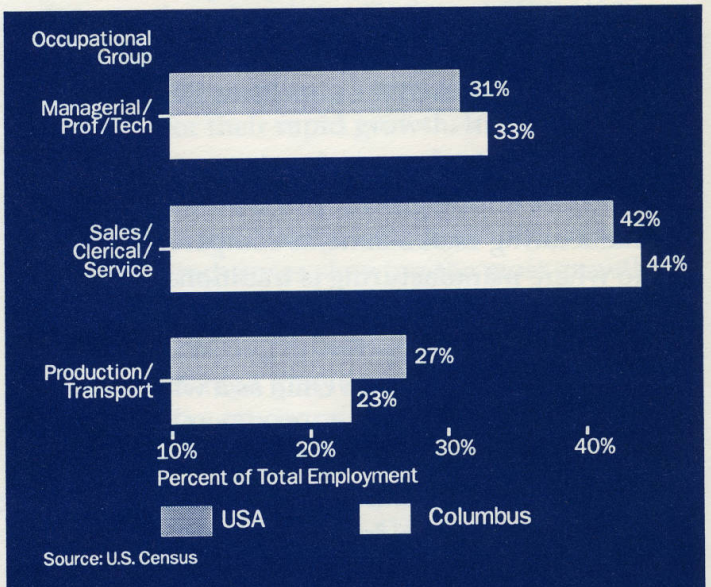
Figure E-7: **Occupational Shift in Columbus MSA Employment, 1980 to 1990**



Source: U.S. Census

Locally, the proportion of blue collar occupations in total employment shrank while the proportion of executive, managerial, administrative, professional and technical occupations grew. These directions of change were evident at the national level, though the local pace of change was more rapid.

Figure E-8: **Columbus MSA Occupational Profile Compared to USA, 1990**



Source: U.S. Census

Compared to national averages, the local work force has a larger proportion of executive, managerial, administrative, professional, technical, sales, clerical and service occupations, and a smaller proportion of blue collar occupations.

In contrast, the blue-collar Group III occupations suffered a net loss of 3,298 jobs during the decade. Within Group III, job losses were concentrated in the relatively high-skill, high-wage, categories of precision production, machine operators and assemblers. Figure E-7 portrays the general occupational shifts that took place from 1980 to 1990.

Appendix B: Table E-7 also profiles shifts in the occupational composition of the Columbus MSA work force by presenting occupational groups as a share of total employment in 1980 and 1990, while comparable data for the U.S. is given in the last two columns. Figure E-8 portrays the difference in occupational structures between the Columbus metropolitan area and the entire U.S.

Compared to the U.S., the Columbus MSA has a somewhat larger representation of the Group I service-sector occupations (high education and skill levels, high wages). In the Columbus MSA, 32.9% of all employment fell into this occupational group in 1990 compared to 30.8% in the U.S. Between 1980 and 1990, the shift toward these high wage service-sector occupations was more pronounced in the Columbus MSA than in the nation. The increase in employment share between 1980 and 1990 was 4.8 percentage points in the Columbus MSA compared to 3.0 percentage points in the U.S. Accompanying the increase in professional, technical, executive and managerial occupations has been a substantial increase in the proportion of adults, aged 25 and older, who are college educated. In 1980, 21.2% of adults in Franklin County had a 4 year college degree or higher. By 1990, this proportion had risen to 26.6%. In the Columbus MSA, 23% of adults had a 4 year college degree or better in 1990 compared to 20.3% in the U.S.

Group II occupations, including sales and service occupations and administrative support, accounted for 43.9% of Columbus MSA employment in 1990. Such service-sector occupations tend to pay lower wages than the Group I occupations. As a whole, Group II occupations in the Columbus MSA increased slightly as a share of total employment from 1980 to 1990, rising from 43.1% to 43.9%. In contrast there was a slight decrease in employment share for these occupations in the U.S.

The Group III, or blue-collar, occupations represent a smaller proportion of the work force in the Columbus MSA than in the U.S. (See Figure E-8.) In 1990, only 23.2% of Columbus MSA jobs fell into this category compared to 26.8% of all U.S. jobs. The categories of precision production, machine

operators and assemblers experienced the sharpest decreases in terms of employment share in the Columbus MSA. The traditionally high-skill category of precision production went from 11.6% of all Columbus MSA employment in 1980 to 9.4% in 1990. Machine operator and assembler occupations decreased in employment share from 8.3% to 5.9%. These decreases were sharper than those experienced in the U.S. For Group III as a whole, the employment share in the Columbus MSA between 1980 and 1990 dropped 5.6 percentage points while the decrease in the U.S. was 2.9 percentage points.

Recently released OBES labor market projections indicate that above average growth will continue in executive, managerial, administrative, professional and technical occupations (all of Group I), and in sales and service occupations (part of Group II). Administrative support and clerical occupations (part of Group II), and most blue collar occupations (Group III), are projected to grow at a less than average rate.

Wage Growth

The traditional view that a region's prosperity hinges entirely on achieving increases in manufacturing employment is giving way in the face of decades of shift toward the service sector. Manufacturing indeed pays higher wages than in much of the service sector. Also, manufacturing's higher multiplier impact means that, on average, a new manufacturing job creates more economic growth than a new service-sector job. Yet the fact is that in many regions the service sector now dwarfs the manufacturing sector in terms of employment size. Thus whatever the nature of the growth and change that occurs in a region's service sector, it is sure to bear much weight in the regional economy.

The Columbus service sector is diverse with its various divisions each lending their own elements of strength to the local economy. Among the large divisions, general services and retail are important from the standpoint of employment growth while the government division helps to lend stability. FIRE is a small division but has contributed the benefits of its dynamic employment growth rate and high wages to the economy. The diversity that has developed within the Columbus area service sector is an important factor in the region's steady growth and in its resilience to business cycle recessions. Although the average wage in the service sector is significantly below that in the goods-producing sector, some service sector activities seem good prospects for wage growth as noted below.

The total wage and salary performance of the Columbus area, as measured by the OBES 203 Series, was strong during the 1979-1991 period. (See Appendix B: Table E-8 and Figure E-9.) This is consistent with the healthy employment growth that occurred locally. Total wage earnings in the MSA increased by 138.1% or $9.3 billion. (See Appendix B: Table E-10.) Of that growth, Franklin County was responsible for $7.7 billion, or 83%. The large service-producing sector, which accounted for all the net new employment growth, contributed 81% of the growth in total wage earnings. That the goods-producing sector could manage to create 19% of the growth in total wages between 1979 and 1991, despite a 6.7% drop in total employment size, is due to the comparatively high wages and healthy wage growth in manufacturing. (See Figure E-12.)

Adjusted for inflation, the growth in total wage earnings in the Columbus MSA was 33.6% from 1979 to 1991. (See Appendix B: Table E-11.) This compares favorably with the national growth in real wage earnings of 21.2% and the Ohio growth of 3.4%. The comparatively high growth rates of total wage earnings in the Columbus MSA reflect the higher than average growth of employment in the local area.

A trend that can be clearly discerned in the earnings data is for the Columbus metropolitan economy to occupy a growing role within the state economy. The Columbus MSA generated only 11.5% of total wage earnings in Ohio in 1979 but by 1991 the MSA was responsible for 14.8% of Ohio wage earnings. (See Appendix B: Table E-10.)

Figure E-10 shows the contribution of the various industry divisions to growth in total wage earnings from 1979 to 1991, not adjusted for inflation. The large service sector divisions - general services, trade, and government - have been responsible for the bulk of new wage earnings because of their large sizes and large increases in employment. Note that despite being comparatively small, the FIRE division generated a sizeable amount of new total wage earnings because of the high average wages that prevail in that division. Manufacturing, also as a result of its high average wage, played an important role in growth of total earnings in the MSA even though manufacturing employment shrank by 13% between 1979 and 1991.

The average annual wage in the Columbus MSA in 1991 was $23,661, not adjusted for inflation. (See

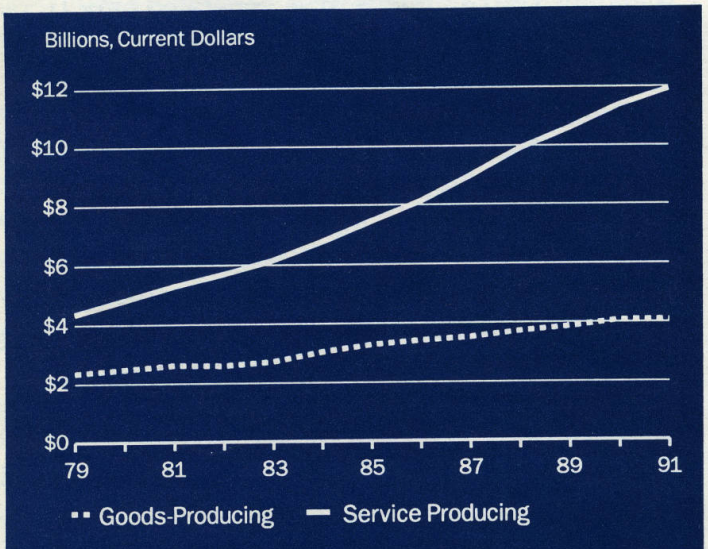
Appendix B: Tables E-9 and E-10.) This was 100.9% of the state average in 1991, up from 93.6% in 1979. Slow growth in the Ohio average wage from 1979 to 1991 was related to the loss of over 300,000 high-wage manufacturing jobs. The Columbus area average wage in 1991 continues to be lower than the U.S. average of $24,334. Since 1979, Columbus has fluctuated between 96.8% and 99.8% of the U.S. average wage. In the most recent years the Columbus average wage has tended to hover around 97% of the U.S. level. Aside from the important factor of industrial composition differences, cost and productivity differentials are the typical determinants of differences between geographic areas in the average wage.

A comparison of average annual wages across industry divisions reveals a good deal of disparity. (See Appendix B: Table E-9.) Jobs in the manufacturing division commanded by far the highest average annual wage in 1991, $32,078. The small transportation, communications & utilities division was second with an annual wage of $29,377, followed by FIRE at $27,861. The lowest wage sector is trade (wholesale and retail) with an average annual wage of only $16,961 in 1991. Trade's wage is only 53% of the average annual wage in the manufacturing division, and 61% of the average annual FIRE wage. The low average wage in the trade division is related to the prevalence of part-time positions and the relatively low value-added nature of the work, particularly in retail.

There have been small improvements during 1979-1991 in narrowing the wage gap between certain service-sector activities and manufacturing in the Columbus MSA. The reasons for these small improvements may include longer average number of years of experience on the job, improved worker skill levels, and technological and organizational improvements within individual service-sector industries, all of which contribute to productivity gains. On the whole, however, the relative size of the average annual service-sector wage compared to manufacturing actually slipped a bit between 1979 and 1991.

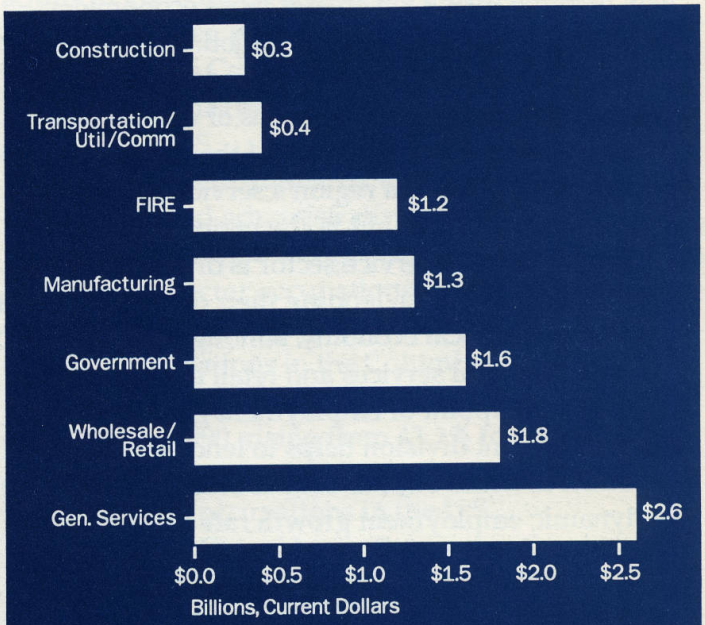
The small FIRE division was a bright spot in terms of wage growth. In 1979 the average annual FIRE wage was 77% of the manufacturing wage but by 1991 had risen to 87% of the manufacturing wage. The government and general services divisions also experienced small wage improvements relative to the manufacturing wage level but to a lesser extent than did FIRE. The average annual wage in the trade

Figure E-9: **Growth of Total Wages Columbus MSA**



The service-producing sector was the source of most of the net new growth in total wages between 1979 and 1991 due to the rapid expansion of employment in that sector. In the goods-producing sector, manufacturing wage improvements lessened the impact of job losses on the growth of total wages.

Figure E-10: **Change in Total Wages by Industry, 1979 to 1991**



General services was the largest contributor to the growth of total wages due to the industry division's large size and its higher than average rate of growth in both employment and wage levels.

industry division actually slipped relative to the manufacturing wage. In 1979 the average annual trade wage was 60% of the manufacturing wage but by 1991 it had fallen to 53%. (See Appendix B: Table E-9.) This is due to the rapid growth of retail trade within the wholesale and retail trade division. Average annual wages are considerably lower in retail trade than in wholesale trade.

Performance in the growth of the average wage, adjusted for inflation, gives an indication of improvement in the level of living. In this respect, the trend in the U.S. as a whole is not encouraging. By various measures, the average wage level, adjusted for the effects of inflation, has tended to grow very little, if at all, over time. One measure, published in the U.S. Council of Economic Advisors' *Economic Indicators*, shows that average earnings decreased in seven of the last ten years. Another measure shows the average wage in the U.S. to have grown by only 3.8% between 1979 and 1991, after adjusting for the effects of inflation. (See Appendix B: Table E-11 and Figure E-11.) The average wage in the Columbus MSA over this same period of time likely increased at a rate no higher than the national rate of increase, and probably lagged that rate. (See Appendix B: Table E-11.) It should be noted that the inflation adjustment used corrects for the national average change in the dollar's value and does not address local variations.

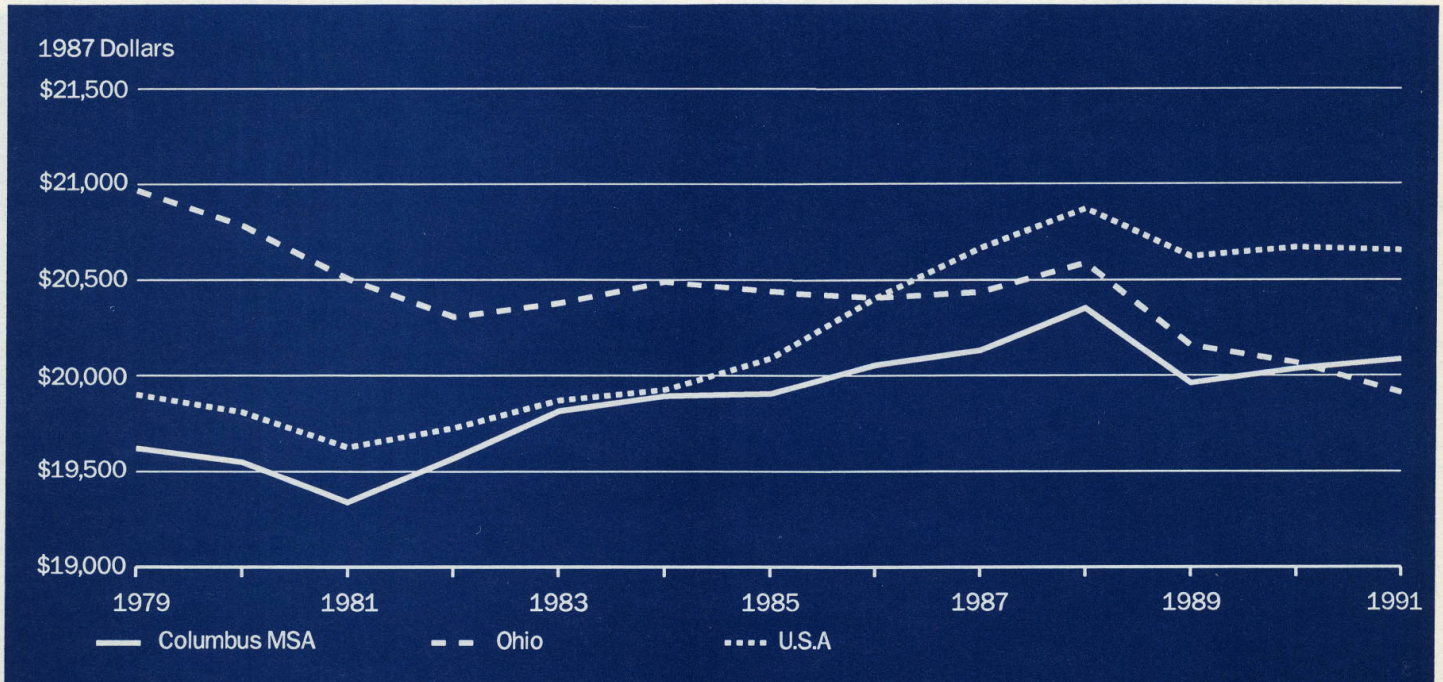
Labor Force Participation Rates and Household Wages

The following discussion is based on U. S. Census data on the Franklin County labor force. Franklin County accounts for approximately three-quarters of the Columbus MSA labor force. (See Appendix B: Table E-12.)

The rate of employment growth in Franklin County has been higher than the rate of population growth for some time. The working-age civilian population grew 16% from 1970 to 1980 and 12.9% from 1980 to 1990. In comparison, the civilian labor force grew by 24.4% from 1970 to 1980, and by 20.8% from 1980 to 1990.

The increase in female labor force participation helped to fuel the labor force growth of the last two decades. Forty-six out of every one-hundred females in the working-age civilian population were part of the labor force in 1970 in Franklin County. In 1980 the proportion was fifty-five in one-hundred and in 1990 the proportion had reached sixty-three out of every one-hundred. The male labor force

Figure E-11: **Growth of Average Wage Adjusted for Inflation 1979 to 1991**



Between 1979 and 1991, after adjusting for inflation (1987=100), the average annual wage grew by $463 in the Columbus MSA compared to $755 in the U.S. In Ohio the average annual wage during this time period decreased by $1,058.

participation rate remained essentially constant during this time (.78 was the rate in 1990). Growth in the female labor force participation rate is expected to slow in Franklin County in coming years. Slowing of this rate is a nationwide trend and helps to explain the lower rate of employment growth projected in the Columbus area and elsewhere for the year 2000 and 2010. (See Appendix C: Table G-12.)

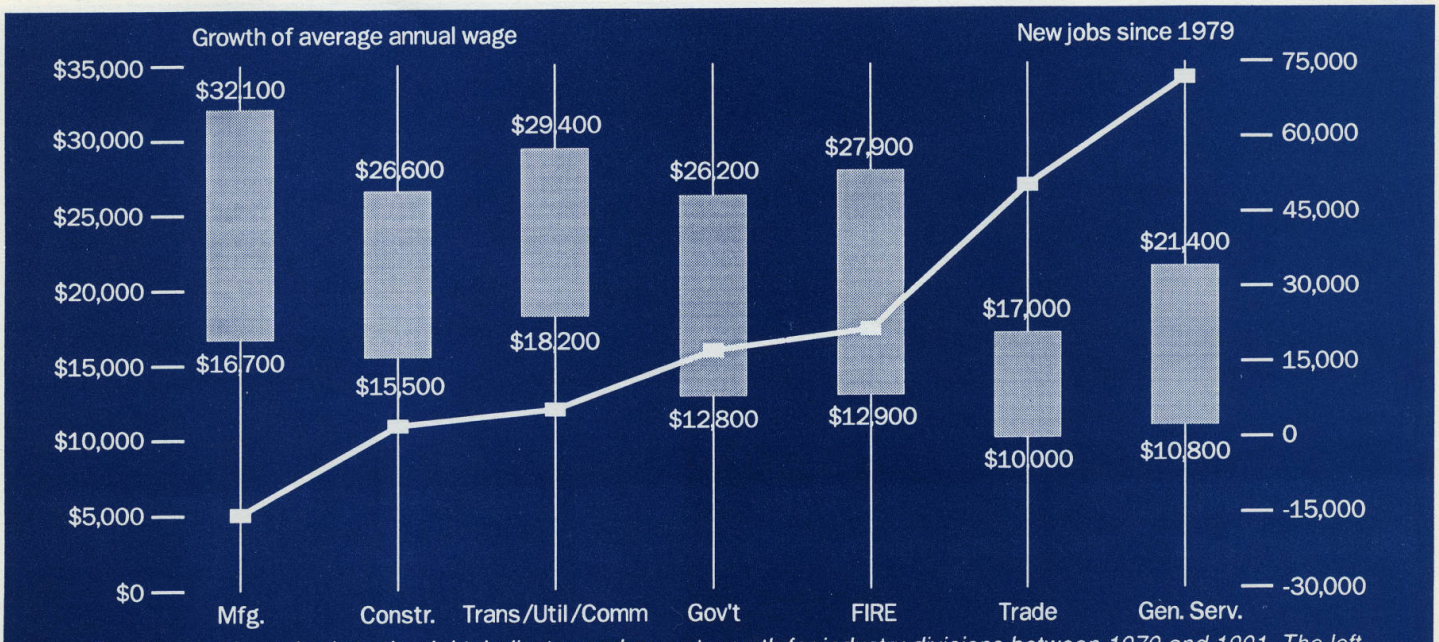
The increase in female labor participation helped to bolster average household income from the mid-1970s to the present, a time during which growth in real wage levels has been slow. (See Appendix B: Table E-11 and Figure E-11.) Between 1979 and 1989, for example, the average real wage grew by a total of only 1.7% in Franklin County while the Census reported that average real wage earnings in households with wage earnings rose by 7.9%. In current dollars, for households with wage earnings, the average household wage income in 1989 was $36,173 in Franklin County while the average wage was $21,903. (See Appendix B: Table E-7.) Female labor force participation is an important factor in making up the difference between the relatively low average wage level compared to the higher household income. Sixty-two percent of Franklin County women with children age 6 and under, and 77% with children age 6-17, were in the labor force in 1990.

Future Economic Trends

Employment growth in the Columbus metropolitan area through the year 2000 will be 1.5% annually, a rate that is above average when compared to the state's 1.2% and the nation's 1.3% forecast.

Service-producing industries are expected to create 96% of the new jobs in the Columbus metropolitan area in this decade. Close to half these new jobs will be created in the general services industry division. Much of the dynamism in this industry division will continue to come from health, business, social and engineering, management and architectural services. Demand for health services will grow based on factors such as the aging of the population and the increased number and effectiveness of medical technologies. Columbus, a well established center of medical excellence, can expect to enjoy employment growth from these factors in coming years. New policies on health care, currently under study at the national level, will impact the growth of health care employment in ways as yet undetermined. Business services

Figure E-12: **Growth of Average Annual Wage and Employment by Industry, 1979 to 1991**



The line graph, and axis to the right, indicate employment growth for industry divisions between 1979 and 1991. The left axis, and the vertical blocks, indicate average wage level in 1979 and growth through 1991. Several industry divisions with high average wages have created few jobs while trade and general services, with low average wages, have created numerous jobs. Next to manufacturing, average wage growth has been highest in FIRE and government.

industries will be another leader in local employment growth, especially services that relate to temporary personnel and computer services. Social services, such as residential care for the elderly and child care services for working parents will be another area of dynamic growth. Engineering, architectural and management services are also expected to grow rapidly in Columbus. Repairs to the public infrastructure and a growing local population and economy will generate demands on engineering and architectural services. Business consolidations, downsizing, and the competitive need to achieve greater organizational efficiencies will stimulate growth of management services.

Retail trade will generate a little more than a quarter of all new metropolitan area jobs between now and the year 2000. Plans for several large regional malls are likely to be realized during the coming decade, further consolidating Columbus' ability to attract shopping dollars from central Ohio and beyond. The anticipated slowdown in the rate of growth of female labor force participation may put a break on the shift to part-time jobs in retail and may contribute to some wage improvement.

Employment growth in finance, insurance and real estate (FIRE) will be restrained compared to the pace of growth in the eighties. Consolidation, re-engineering of the work process and the increasingly effective use of labor saving technologies are national trends in FIRE industries. To retain their competitiveness, local companies will need to heed these trends. While aimed at improving productivity and enhancing competitiveness, these developments in the industry will slow the rate of employment growth during this decade. As local FIRE companies forge leaner and more productive business organizations, the hope is that superior wage growth will result. Thus, Columbus stands to benefit from these trends in the long term because of the relative importance here of the FIRE industry division.

The government sector is expected to generate almost 7% of the employment growth between now and 2000. Employment growth in the government sector will occur primarily as a result of the increased demands on education from an expanding population.

Transportation and utilities employment is also expected to grow at a higher than average rate in the future. Air transportation and transportation services are well poised for growth in the Columbus metropolitan area. The Rickenbacker Air Industrial Park has excellent development potential with its giant runway capacity, large reserves of developable land and the tax incentives that accompany its foreign trade zone status. Development of the area in and around the Port Columbus International Airport will be encouraged by the recent designation of this area as part of the Columbus enterprise zone and as an Urban Employment Center. The city's natural advantages as a distribution hub place Columbus in a good position to benefit from the above average growth predicted nationally for the trucking industry. Two recent public-private initiatives will also help stimulate the local growth of transportation-related industries. One project will develop Columbus' capacities as an inland port. The other project, InfoPort, will establish a trade point center in Columbus which will offer several different types of international trade services.

Manufacturing, with the exception of printing and publishing for which above average employment growth is expected, will not contribute much to the Columbus economy in terms of employment growth. Instead, manufacturing's contribution will be in the area of higher wages and wage growth made possible by the city's now streamlined and highly productive manufacturing businesses. The creation of quality jobs accessible to inner-city Columbus residents remains a challenge but will be encouraged by the recent designation of three Urban Employment Centers: I-670/South Linden, Marion Road/S-104 and the Greater Airport Area. Tax incentives will be focussed on these areas to attract manufacturing and office development.

Geographic Patterns of Growth

The comparative strength of both population and economic growth has provided the driving force behind development pressures in the Columbus area. The distribution of that development within central Ohio determines the shape of our built environment, and helps to forecast what that environment will be like in twenty years.

The geographic patterns of growth in Columbus are reflected in the housing market and subdivision activity, in annexation patterns, and in commercial building activity. The housing market reflects demographic pressures, especially the dispersion of population into suburban housing alternatives and the decline in household size. Annexation has been the mechanism by which the city of Columbus has expanded into developing areas and maintained a share of the growth in central Ohio. Commercial building activity, and especially office development patterns, reveals a great deal about changes in the area's economic geography.

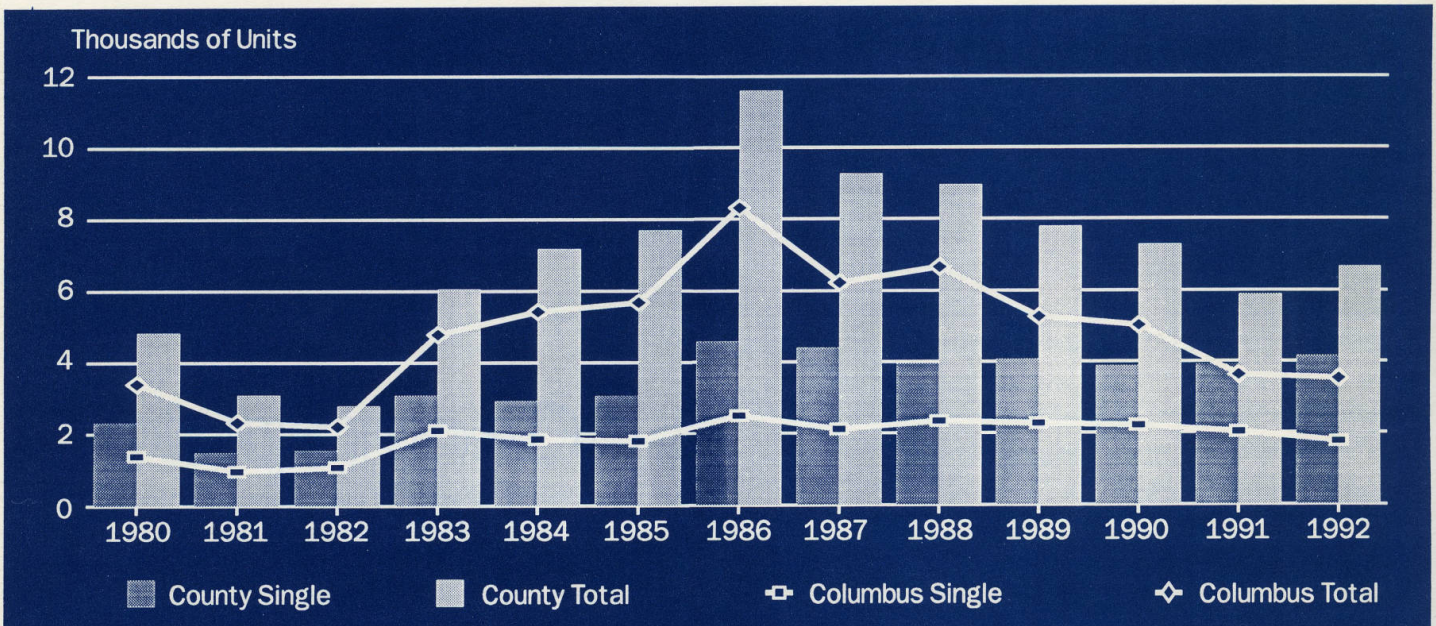
This section of the Growth Statement will address these activities in order to analyze the past and chart the future distribution of development in central Ohio. It will discuss the uneven distribution of population and wealth in the county, comparative projections of the area's population and labor force, and the distribution of wages in the county. Summary comparisons of census data from 1970 to 1990 for the older and newer sections of Columbus, the city as a whole, that part of Franklin County outside Columbus, and Franklin County as a whole can be found in Appendix C: Tables G-1 through G-5.

Housing Market Performance

New residential construction in Franklin County added 89,089 units to the total housing stock from 1980 through 1992. Of this total, 62,432 units, or about 70.1% of the total, were built in Columbus. Strong long-term trends in residential construction reflect the continuing population growth in central Ohio and the trend toward decreasing household size. Of the two factors, Franklin County's 10.6% population growth is clearly the dominant influence in the formation of new households, although average household size did decrease from 2.6 to 2.47 persons. This represents quite a shift from the 1970s, when population growth was only 4.3% but household size dropped from 3.1 to 2.6 persons.

Single family construction has been quite stable since the 1982 recession. From a county-wide low of

Figure G-1: **Residential Building Permit Activity**
Columbus and Franklin County, 1980 to 1992



Residential construction activity peaked in 1986, followed by a gradual decline through 1991 and a modest recovery in 1992. Single family construction has been remarkably stable, with fluctuations in total construction stemming from the volatility of multi-family housing. Columbus captured 70.1% of all housing units authorized in Franklin County from 1980 through 1992, although rates declined slightly for the 1986-1992 period. (County totals include Columbus.)

about 1,500 units in both 1981 and 1982, construction activity recovered to a decade-high in 1986 with 4,575 units in 1986. (See Appendix C: Table G-6 and Figure G-1.) The 1986-1992 construction average has been 4,132 units per year, with each year since 1986 within 10% of the average for the seven-year period. Single family construction in Columbus also peaked in 1986, at 2,493 units, and has fallen off slowly to a 1992 level of 1,761 units. The city has averaged 2,174 new single family units from 1986 through 1992, or 52.6% of the construction total for the county. By comparison, between 1980 and 1985 the city was averaging 700 fewer units per year, but had a higher percentage share (63.4%) of single family construction activity.

Multi-family construction has been highly volatile over the last twelve years. From a low of 1,245 units countywide in 1982, permits jumped to a high of 7,024 in 1986. By 1992, the total was 2,514. Multi-family construction is more speculative than single family and was more heavily affected by recession and credit restrictions over the last few years. Multi-family construction in Columbus follows the same pattern. From a low of 1,129 units in 1982, construction peaked in 1986 at 5,816 units, fell to 1,594 in 1991 and recovered to 1,756 in 1992. The Columbus share of multi-family construction activity has remained fairly constant over the past thirteen years. From 1980 through 1985, 85% of all multi-family permits issued in the county were issued in Columbus. Over the last seven years the percentage fell marginally to 83.2%.

Capture rates will be mentioned frequently in the discussion of the geographic distribution of growth in Central Ohio. They are an important measure of Columbus' position in the area, and decreases in these rates can raise concerns. Columbus captured 70.1% of all new units authorized by permit in Franklin County between 1980 and 1992, but there is a substantial difference between the 1980-1985 period, when the city captured 75.2% of all new units, and the 1986-1992 period, when the city's capture rate fell to 67.3%. (See Appendix C: Table G-7.) This decrease is caused primarily by shifts in single family construction. Between 1980 and 1985, Columbus captured 63.4% of the county's single family construction, but this percentage fell to 52.6% for the 1986-1992 period. Capture rates for multi-family housing fell from 85.5% to 83.2%, while the overall dwelling unit capture rate decreased from 75.2% to 67.3%.

A different measure of Columbus' relative

position is available through use of Census Bureau data from 1980 and 1990. Population comparisons indicate that Columbus captured 73.5% of Franklin County's population growth between 1980 and 1990. Of the net housing unit increase of 58,394, Columbus captured 71.1%. Long-term forecasts for the city of Columbus assume that the city will capture only two-thirds of the Franklin County population increase, so Columbus' recent performance still supports that long-term growth assumption.

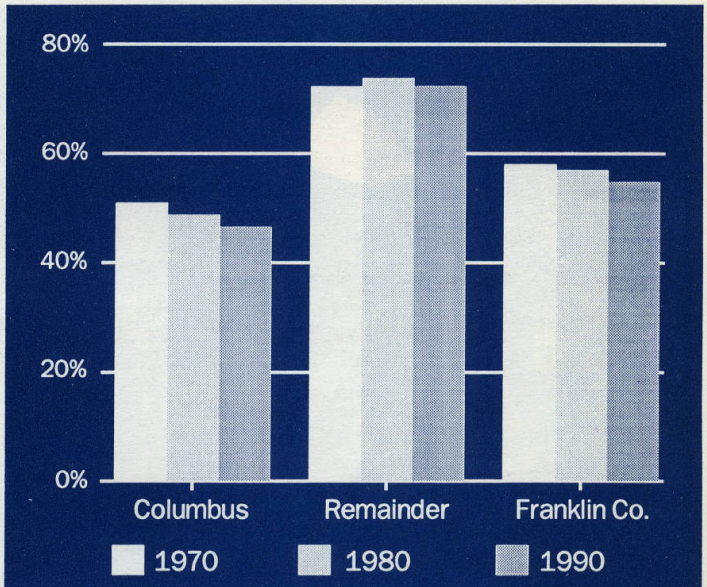
Owner Occupancy and Vacancy Rates

High levels of home ownership traditionally indicate stability in a community. Columbus falls behind its suburban neighbors by this measure. Columbus had 88,265 owner-occupied units in 1970, or 51% of its occupied housing stock. That percentage fell to 48.8% in 1980, and declined further to 46.6% in 1990. In contrast, the remainder of Franklin County has a higher, more sustained rate of home ownership. In 1970, 72.3% of occupied housing in the suburbs was owner-occupied. This percentage increased to 73.8% in 1980 and then dropped back to 72.4% in 1990. Over the 1970-1990 period, the Columbus home ownership rate has fallen by 4.4% while the suburban rate has increased by .1%.

Building permit trends reflect the predominance of owner occupancy in the suburbs. Single family homes are typically owner-occupied, and in the remainder of Franklin County, 70.6% of all units authorized by permit from 1980 through 1991 were single family units. By contrast, only 38.4% of units authorized in Columbus were single family. This discrepancy in single family construction certainly reinforces the suburban predominance in owner occupancy, as well as illustrating the continued decline in owner occupancy in the city of Columbus. The suburban percentage of single family construction, although high, was below the 1980 rate of owner occupancy, and illustrates the return of suburban owner occupancy rates to 1970 levels in 1990. (See Figure G-2.)

The rate of housing unit vacancies in Franklin County increased from 4.4% in 1970, as measured by Census data, to 6.6% in 1990. The 1980 rate was 7.0%. Columbus follows this pattern at a higher level of vacancies, with a 1970 vacancy rate of 5.1%, peaking at 8.2% in 1980 and declining to 7.6% in 1990. The suburban part of the county shows an increase in vacancies in 1980, from 2.9% to 4.3%, with an additional increase between 1980 and 1990, to 4.4%.

Figure G-2: **Home Ownership Patterns, 1970 to 1990 Columbus and Franklin County**

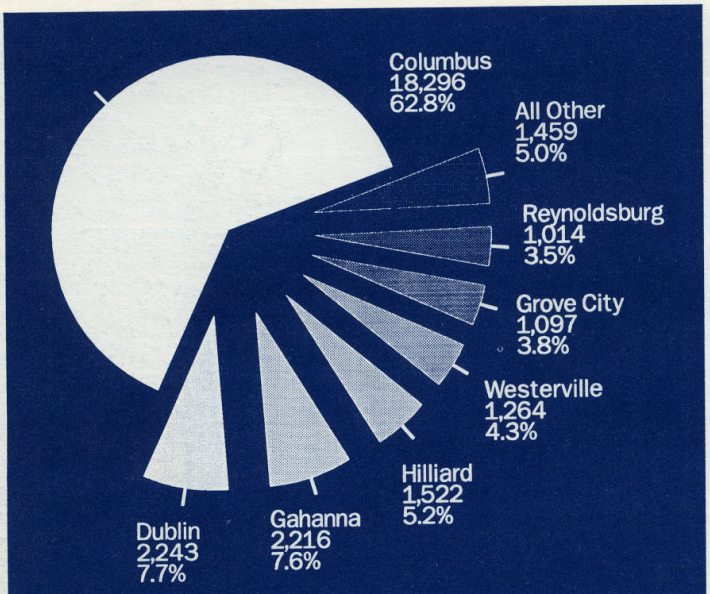


The city of Columbus has a much lower rate of owner-occupancy than the suburban parts of Franklin County, and the level of owner-occupancy has declined by almost 4.4% over the last twenty years, while the suburban rate has been stable.

The overall level of vacancy was over 2% lower than Franklin County and over 3% lower than the city of Columbus. (See Appendix C: Tables G-1 through G-5.)

The overall picture of Columbus that emerges from this view of owner occupancy and vacancy is that the city has a consistent pattern of high rental population and comparatively higher vacancy rates than its surroundings. These trends pose two issues for Columbus policy makers. First, what does this high percentage of rental activity say about the nature of the Columbus housing market and population? Traditionally, home ownership has been a source of stability, but it may be that the rental market serves an important function in the area's continued population growth. Columbus currently enjoys a high population growth rate for a Northern city, maintained largely by high rates of inmigration since the mid-1980s. Clearly, rental housing serves as the first housing option for many of these new residents before some of them move on to home ownership in Columbus or the suburbs. However, such migration would not support continued expansion of the rental housing market. A second possibility is that the pattern of rental activity reflects the increasing problems that younger people have in finding affordable housing for purchase. This

Figure G-3: **Franklin County Subdivision Platting 1980 to 1991**



For the period 1980-1991, 18,296 lots (62.8% of all lots) were platted in the city of Columbus. Of the suburban jurisdictions, Dublin and Gahanna were the most active. Recent trends indicate that the Columbus share of single family residential lots may be decreasing.

possibility raises the second issue, should the city encourage the construction of single family homes, and especially lower-cost single family homes, in order to encourage more traditional patterns of home ownership?

Subdivision Activity

An additional source of information regarding the distribution of growth is the record of subdivision activity in Franklin County. Monitoring the volume of activity and the number and location of new single family residential lots provides an understanding of the rate and direction of growth.

Between 1980 and 1991, 62.8% of all single family lots platted in Franklin County were located in Columbus. This compares to 60% during the 1970s. (See Appendix C: Table G-8 and Figure G-3.) Columbus has continued to retain a dominant share of new single family lots platted in Franklin County over the last ten years, although annual analysis reveals a less optimistic pattern.

The total number of lots platted in the County has increased considerably since 1982. This increase in housing construction is primarily attributable to a better performance of the local economy and the steady growth of its population and number of households. Only 826 lots were platted in all of Franklin County in 1982. The years 1981 and 1982 mark the first time since 1970 that new lot totals in Franklin County dropped below 2,000 in any given year. This lull in new housing construction is attributable to the high cost of new housing and higher interest rates that prevailed during the recession period of 1981 and 1982.

By 1983 the slow period for new housing development for Columbus and Franklin County came to an end. In 1982 only 549 lots were platted in Columbus. In 1983 the total number of lots platted in Columbus rose sharply to 2,077, an almost three-fold increase over 1982. The resurgence in total platting activity in 1983 was based on the improvement of the economy combined with a backlog of housing demand. From 1983 to 1985, the total number of lots platted in both Franklin County and Columbus increased at a much slower rate and began to decline by the end of 1985, although still representing a period of heavy activity. From 1985 to 1986, the rate of subdivision platting activity once again increased to a considerable degree in Columbus and the County. Subdivision platting declined in 1987 and 1988, but the 1989 and 1990 levels of activity returned to mid-1980s levels, with a small decline in 1991.

The rate of new housing construction in the suburban areas of the County has varied with economy over the last ten years, but the general trend is upward. In addition to this construction growth, there is a marked change in platting patterns in the periods 1980-1984, 1985-1989, and 1990-1991. From 1980 to 1984, Columbus maintained a dominant position in new housing construction with an average capture rate of 72.5% of all new lots platted in the County.

For the period 1985-89, however, this average fell to 54.4%. The combination of this parity in platting activity with housing construction trends noted above strengthened the indication that, in the future, Columbus would share more equally with the suburban jurisdictions of the County in new housing development.

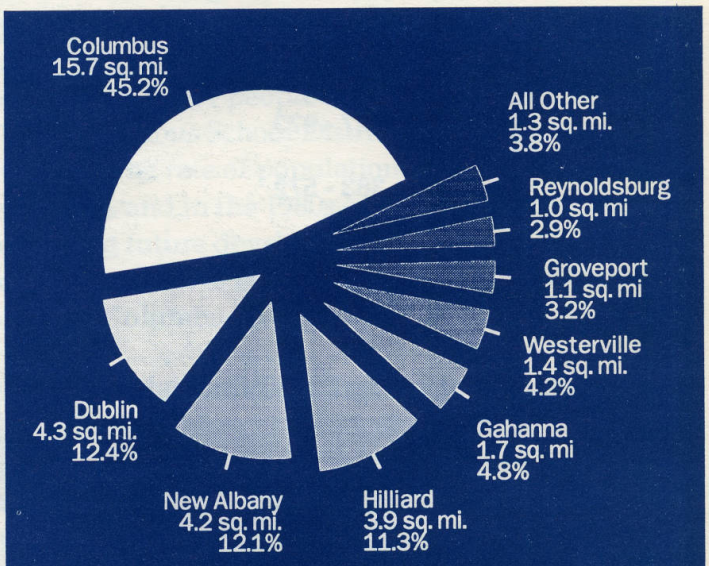
Data from 1990 and 1991 may signal a modest shift back to development in Columbus. Although the single family housing construction pattern still reflected more parity with suburban jurisdictions, the city captured 65.4% of all new residential lots.

This pattern may reflect the cost difference in the Columbus and suburban housing markets. The

Columbus new construction market may be less susceptible to fluctuations in the economic cycle, while the suburban market fluctuates more markedly. This pattern, however, ignores increased subdivision activity outside Franklin County in some suburban jurisdictions such as Westerville and Reynoldsburg. For example, 146 lots were platted in Westerville in Delaware County in 1991. If these lots are factored into the Franklin County numbers, the plat capture rate for 1991 drops below 60%. Nevertheless, the Columbus lot total of 2,159 in 1990 is certainly a positive sign for continued single family development in Columbus.

The analysis of the distribution of new lots from 1980-1991 by census tract shows that fringe area census tracts have had the highest platting activity in the County. (See Map One: Platted Lots, Franklin County, 1980 to 1991.) Although not mapped, the Fairfield County portion of Columbus had 867 lots platted during the period. These tracts highlight the areas of the County that have experienced the highest growth in new single family development. Dublin, Westerville, Gahanna, and the trans-Scioto corridor are the major areas of platting activity and should continue to be growth areas for the foreseeable future. All of these growth areas are in suburban school districts. The location of this platting activity also suggests that population growth in Columbus will continue to occur in fringe areas of the city.

Figure G-4: **Annexation in Franklin County 1980 to 1991**



Suburban jurisdictions have become more active in annexations in the 1980-1991 period, while the pace of Columbus' annexation has slowed from earlier periods. Nevertheless, Columbus annexed over 45% of all land annexed in Franklin County during the period, with Dublin, New Albany and Hilliard each annexing over 10%.

Annexation Patterns

Annexation has had a profound impact on the political boundaries of Columbus since 1950, when the city covered 39.9 square miles, to 1975, when the city had grown to 173.2 square miles. During this twenty-five year period, the city was adding an average of over 5.3 square miles each year. Since 1975, the pace of Columbus annexations has slowed considerably. Between 1975 and 1979, the city added 7.7 square miles, for an average of 1.9 square miles per year, and during the 1980-1992 period, about 17.1 square miles has been added to the city, or about 1.3 square miles per year. At the end of 1992, Columbus encompassed about 198 square miles.

During the 1980-1991 period, suburban municipalities have been active in annexations. (For the purposes of these suburban comparisons, Franklin County records have been used. Annexations are dated from the time that the County Commissioners approve the annexation, rather than, as in the case of Columbus, when City Council approves the annexation.) Suburban jurisdictions accounted for 54.8%, or 19 square miles, of the 34.8 square miles annexed within Franklin County during the period. (See Appendix C: Table G-9 and Figure G-4.) New Albany's single annexation of 4.2 square miles in 1989 was the largest of the period. A number of other jurisdictions have been active over the last twelve years. Dublin leads this group with 4.3 square miles annexed, or 12.4% of the total. New Albany is second at 12.1%. Hilliard has annexed 3.9 square miles over the last twelve years, for 11.3% of the total. Four other suburban jurisdictions (Gahanna, Westerville, Groveport and Reynoldsburg) have annexed at least one square mile in the last twelve years. The main reasons for this shift in annexation patterns are the preference of developers for single-family housing construction in suburban school districts and the city reaching the northern limits of its sewer system.

Despite Columbus' diminishing share of the area annexed each year in Franklin County, the interest of property owners in annexation to the city of Columbus remains strong. In 1990 Columbus received more petitions for annexation than in any one year during the decade of the 1980s, reflecting a

continued interest in Columbus services. The prevailing motivation for annexation by developers in suburban fringe areas and by individual homeowners has been to obtain sewer and water services.

Future annexation activity for Columbus can be classified into two categories — infill and fringe area annexations. Given the projected rates of population growth in central Ohio and the vast amount of undeveloped land in Columbus, it could be argued that additional annexation is unnecessary. However, growth does not occur simply because an area is undeveloped. The market does display strong geographical preferences. (See "Future Growth Patterns" later in this chapter.)

Columbus should continue to maintain its "open door" policy in locations anticipated to be high growth corridors and which can be served in a cost-effective manner. Recent annexation history would also indicate a continued strong interest in infill annexations. In general, infill annexations are logical from an overall service point of view. The islands of township land often lead to jurisdictional confusion. Both annexation trends are addressed in the recommendations of the Columbus Comprehensive Plan, which recommends that "Columbus round out its corporate boundaries to make the city more serviceable, aggressively pursue and accept annexation of unincorporated land surrounded by city land, and accept annexations in expansion areas which the city can support with timely capital investments."

The issue of continuing annexation is also sensitive in light of its implications for the Columbus City Schools. Legislation was approved in May of 1986 by the Ohio General Assembly and an agreement reached between the Columbus Board of Education and adjacent school boards, which would, with the exception of certain specific areas, or unless otherwise agreed between affected school boards, require future territory annexed to a municipality to be transferred to the school district of the municipality to which the annexation is made. The primary effect of the agreement is to discourage the practice of allowing unincorporated fringe areas to annex to the city of Columbus for the benefit of water, sewer, and other services, while remaining within a suburban school district. At present, the primary annexations under this agreement have been for industrial or commercial land.

One reason for concern about residential development in the Columbus School District is the loss of population in the district over the last twenty years. From a high of 550,523 people in 1970, the population in the district fell by 25,818 between 1970 and 1980, and the district saw the loss of an additional 37,641 people between 1980 and 1990. The 1990 Columbus School District population was 487,064. The rate of population decline in the 1970s was 4.7% and in the 1980s another 7.2% was lost. It is clear that future development and vitality of the city of Columbus is of critical importance to both the city and the Columbus School District.

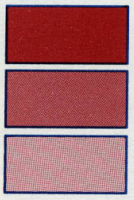
Commercial Building Trends in Columbus

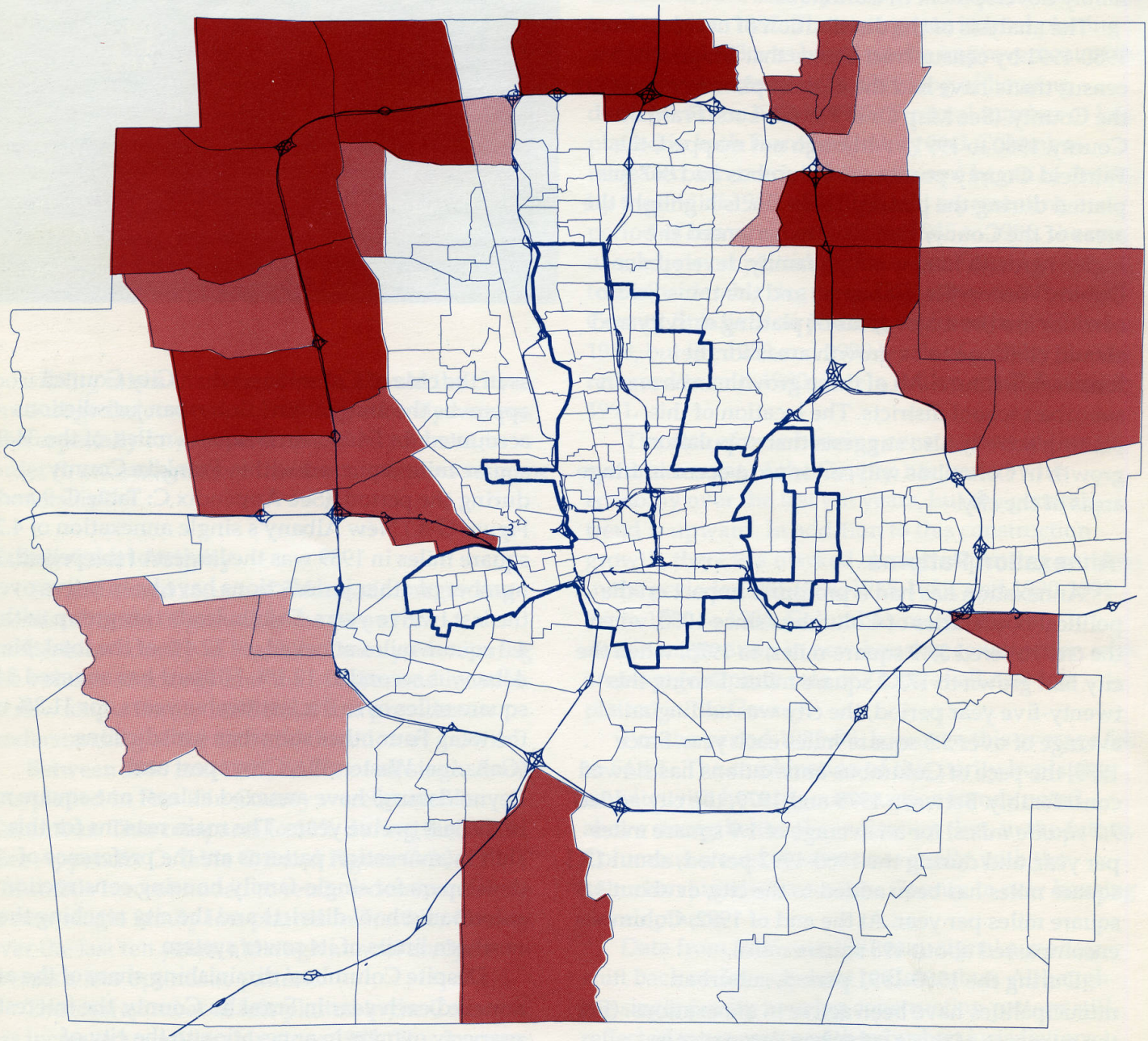
Commercial building activity includes a wide variety of projects, from mercantile and office buildings to industrial projects. It also reflects the geographic patterns of economic activity in Franklin County. Such patterns have long-term implications for the economic vitality of the city of Columbus. The construction of an industrial or office building can create an employment center that will generate continuing income tax benefits for the city, although some construction can serve only to siphon economic activity away from existing employment centers.

Local commercial building activity between 1980 and 1991 followed the national economic cycle. The value of new commercial construction in both Columbus and Franklin County in 1983 dropped by over 50% from 1982, as slow economic growth and high interest rates discouraged investment. Nevertheless, the local economy recovered more quickly than the national cycle, and investment in commercial structures expanded rapidly. From the County's low point of $118 million of commercial investment in 1983, commercial building activity expanded rapidly until, in 1987, the investment of $375 million represented a tripling of construction activity. From 1987 through 1990 commercial building activity maintained this plateau, with small increases each year in total activity. The Columbus recovery from 1983 was even stronger, with 3.5 times the construction activity in 1987. In 1991, commercial construction fell off dramatically as banking constraints and recession combined to cut activity to 49% of its 1990 level in the city, and 57% of its 1990 level in the County. Commercial building activity in Columbus and Franklin County continued to decline in 1992, by 18.9% and 18%, respectively. (See Appendix C: Table G-10 and Figure G-5.)

Investment in commercial building in Franklin County from 1980 to 1992 totalled over $3.43 billion.

Map One: **Platted Lots**
Franklin County, 1980 to 1991





In the city of Columbus for the same period, the investment was over $2.59 billion, for a capture rate of 75.6%. Commercial building activity in Columbus was concentrated in office/bank/professional building construction (36.8%), industrial construction (17.1%), and mercantile construction (15.8%).

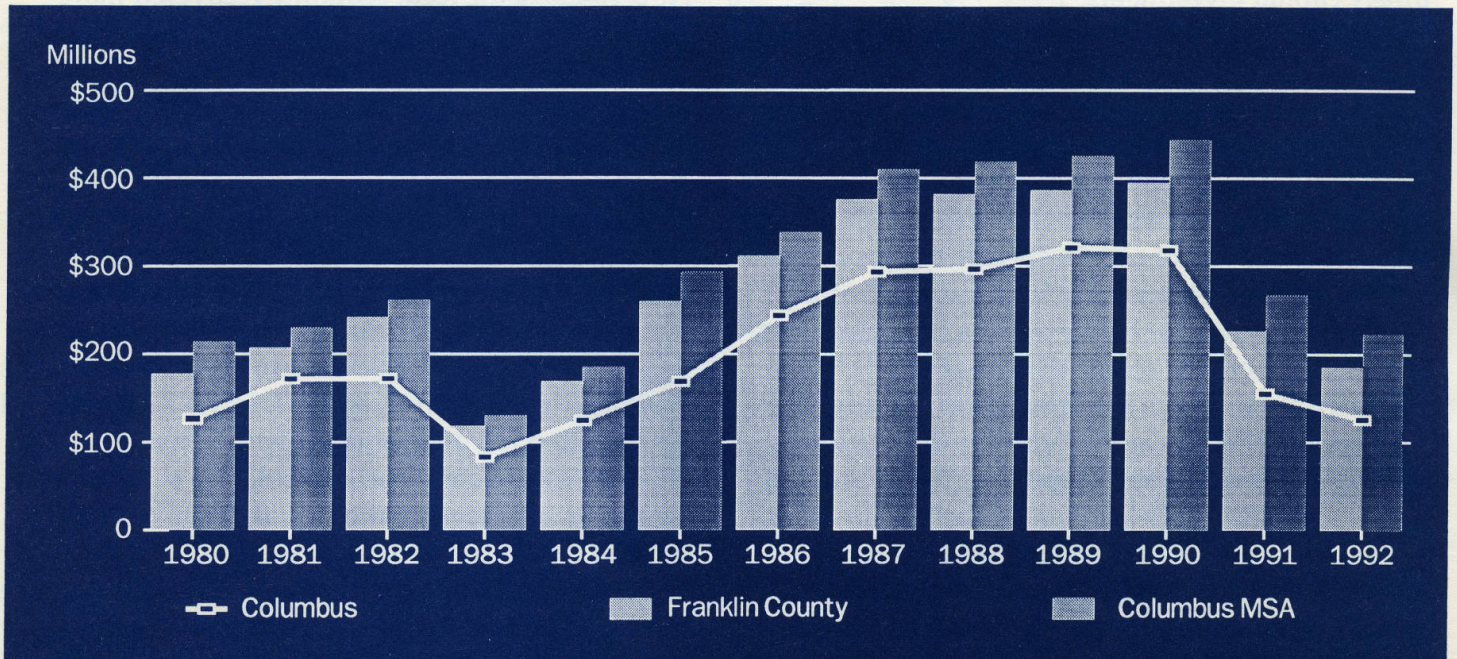
Distribution of Commercial Office Space

The Columbus area office market represents an important subset of commercial activity. The material that follows is useful in understanding the increased dispersion of office-related activities, a dispersion that is especially important given the preeminence of such activities in the local economic mix. The largest employment growth in the Columbus metropolitan area economy has been in the sectors of government, services, trade and FIRE (finance, insurance and real estate), which are traditionally heavy office space users. The distribution of office space in the Columbus area serves as a guide to the distribution of employment in the area and, indirectly, tax revenue from that employment. The analysis in this section is taken from an 1991 update to a Department publication, *The 1990 Columbus Office Market* report.

In 1991, the Columbus speculative office market consisted of over 25 million square feet of rentable space. Over 12 million square feet of new office space has been added since 1982, for an increase of 92.4 percent. With the placement of this much office space on the market in such a short period of time, increases in vacancy rates were inevitable. Vacant space has increased by over 321 percent since 1982. The amount of vacant space increased from 981,000 square feet in 1982 to over 4.1 million square feet in 1991. The Columbus area vacancy rate peaked in 1987, when it reached 17.6 percent, and has steadily declined since then. As of the fall of 1991 the vacancy rate stood at 15.6 percent. Occupied space has increased 74.1 percent, growing from over 12 million square feet in 1982 to over 21 million square feet in 1991. Office space has been absorbed on an average annual basis of over 1 million square feet a year between 1982 and 1991. However, the high rates of absorption have begun to taper off and for the 1990 to 1991 period stood at about 530,000 square feet.

Office space in the Franklin County market is distributed between suburban (65 percent) and downtown (35 percent) areas. For the purposes of this report, any office space falling outside of the downtown innerbelt core area is considered suburban space. Local suburban office space has been developed primarily between 1970 and 1990.

Figure G-5: **Commercial Building Activity 1980 to 1992**



Over the 1980-1992 period, the valuation of commercial building activity totalled over $3.4 billion in Franklin County and $3.8 billion in the Columbus MSA. Activity has followed the building cycle, with 1992 activity 18.9% below 1991 in the city of Columbus, and 18% below in the county. Over 75% of all activity from 1980 to 1992 in the county was in Columbus.

The development of this office space has occurred in suburban municipalities as well as within the city limits of Columbus. During the 1970 to 1979 period, Columbus led the growth in new office space development with 92 new buildings, amounting to 2,720,917 square feet, or 61 percent of all the new office space added to the suburban market. The cities of Worthington and Upper Arlington followed with over 797,000 (17.9 percent) and 349,000 (7.8 percent), respectively.

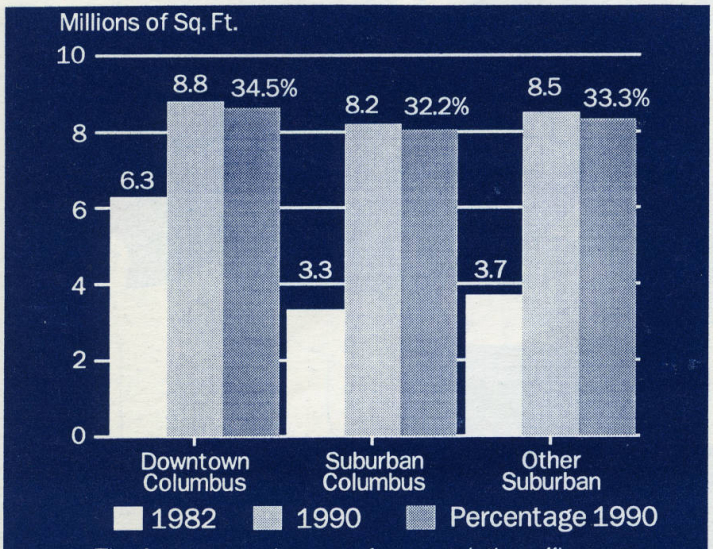
During the 1980 to 1989 period, Columbus continued to dominate the local office space development market by adding 108 new buildings, or almost 50 percent of new office space development. These new buildings added over 5 million square feet of new office space to the suburban market outside of the downtown core area. The suburban communities of Dublin, Westerville and Worthington also played major development roles during this time period as they together accounted for almost 45 percent of the new office space development, totalling over 4.6 million square feet of new office space.

Downtown Columbus office space development has a longer history, but has followed a similar course. Before 1950, the downtown office market consisted of over 3.2 million square feet of rentable space. This space was concentrated primarily along Broad, High and Gay Streets. Between 1950 and 1959, the downtown office market added over 110,000 square feet of new office space. In comparison, the 1960 to 1969 period saw the addition of over 998,000 square feet, while the 1970 to 1979 increase was over 1.4 million square feet.

This trend of downtown office space growth has continued well into the 1980s. The last ten years have seen more office space come on the market than had the previous twenty years. The 1980 to 1989 period has seen over 2.8 million square feet of speculative office space added to the market. The total amount of speculative office space in the downtown market is over 8.6 million square feet, which is distributed throughout 132 office buildings. In addition to this 8.6 million square feet of speculative office space the downtown area also contains 9.7 million square feet of non-speculative (owner occupied) space. The total amount of all types of office space in the downtown core area consists of over 18.3 million square feet.

Combining both suburban and downtown office space, the city of Columbus contains 17 million, or 71 percent, out of the total 25 million square feet of all office space within Franklin County. Recent trends, however, indicate a surge in the growth of office space in suburban municipalities. Since a key to the continuing vitality of the city of Columbus has been a healthy share of wages earned in Franklin County, the development of additional suburban employment centers can only serve to limit the historic wage capture rate. (See Figure G-6.)

Figure G-6: **Speculative Office Space Franklin County Patterns, 1982 to 1990**



The fastest growing area for speculative office space development in the 1980s was Suburban Columbus with 4.9 million square feet of new space added. Downtown Columbus added 2.5 million square feet while other suburban municipalities in Franklin County added 4.8 million square feet of new space. Columbus contains 66.7 percent of all office space within Franklin County.

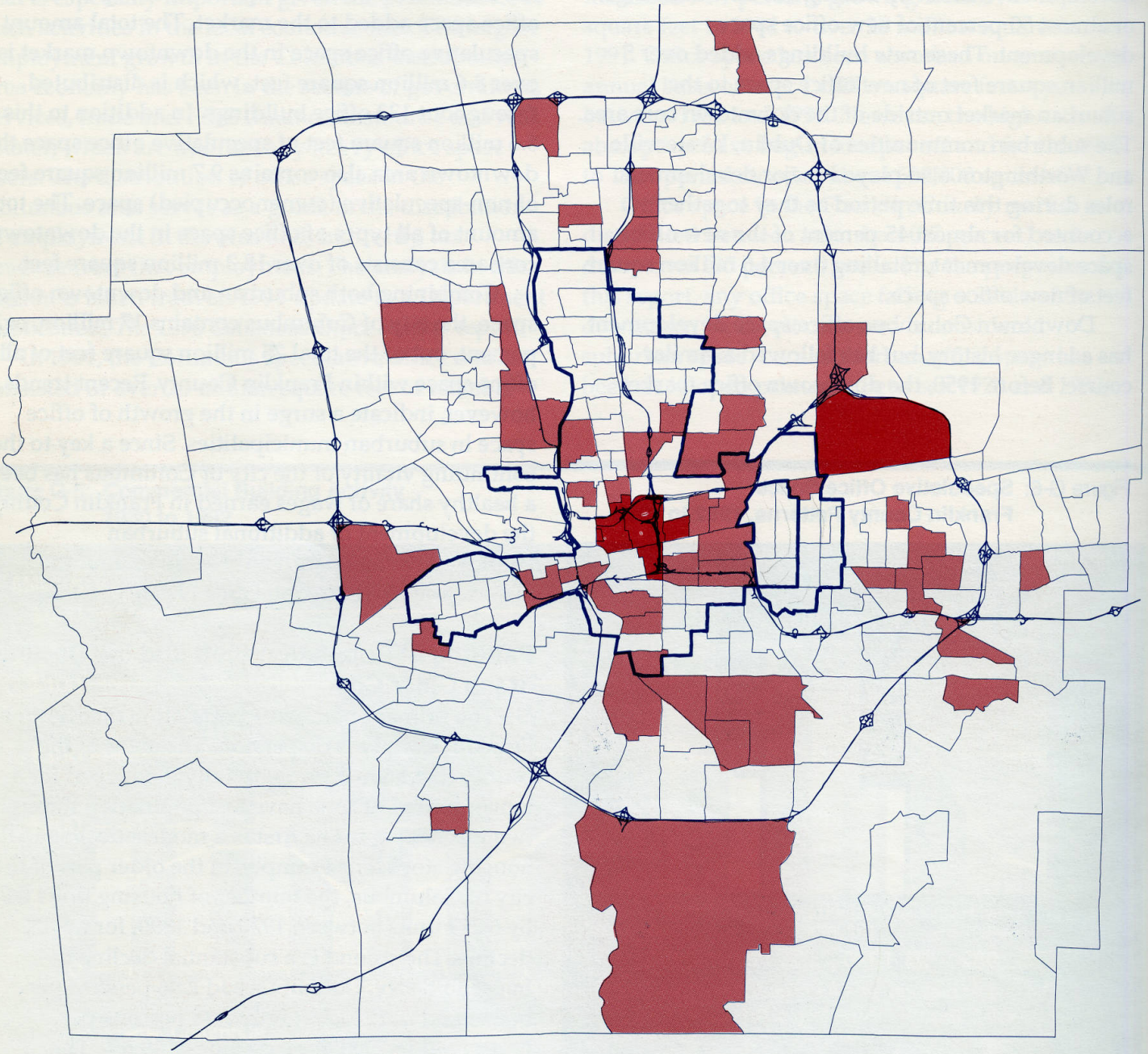
Patterns of Population Shift and the Decline of the Older City

The primary pattern of population distribution in Franklin County is dispersion. The areas of the county that have been more fully developed for a longer period of time have lost population through two mechanisms. The first is a modest decline in the housing stock. For example, in the older part of the city of Columbus, the number of housing units fell by 6,279 units between 1970 and 1990, for a 5.1% decline. The second is a substantial decline in household size. Columbus had 2.96 persons per household in 1970, but only 2.38 persons per household in 1990, for a decline of 19.6%. The pattern of population loss caused by these mechanisms can be seen in Map Two. Census tracts showing a population decline of 10% or more are

Map Two: **Population Loss 1980 to 1990**

Over 20%

10% to 20%

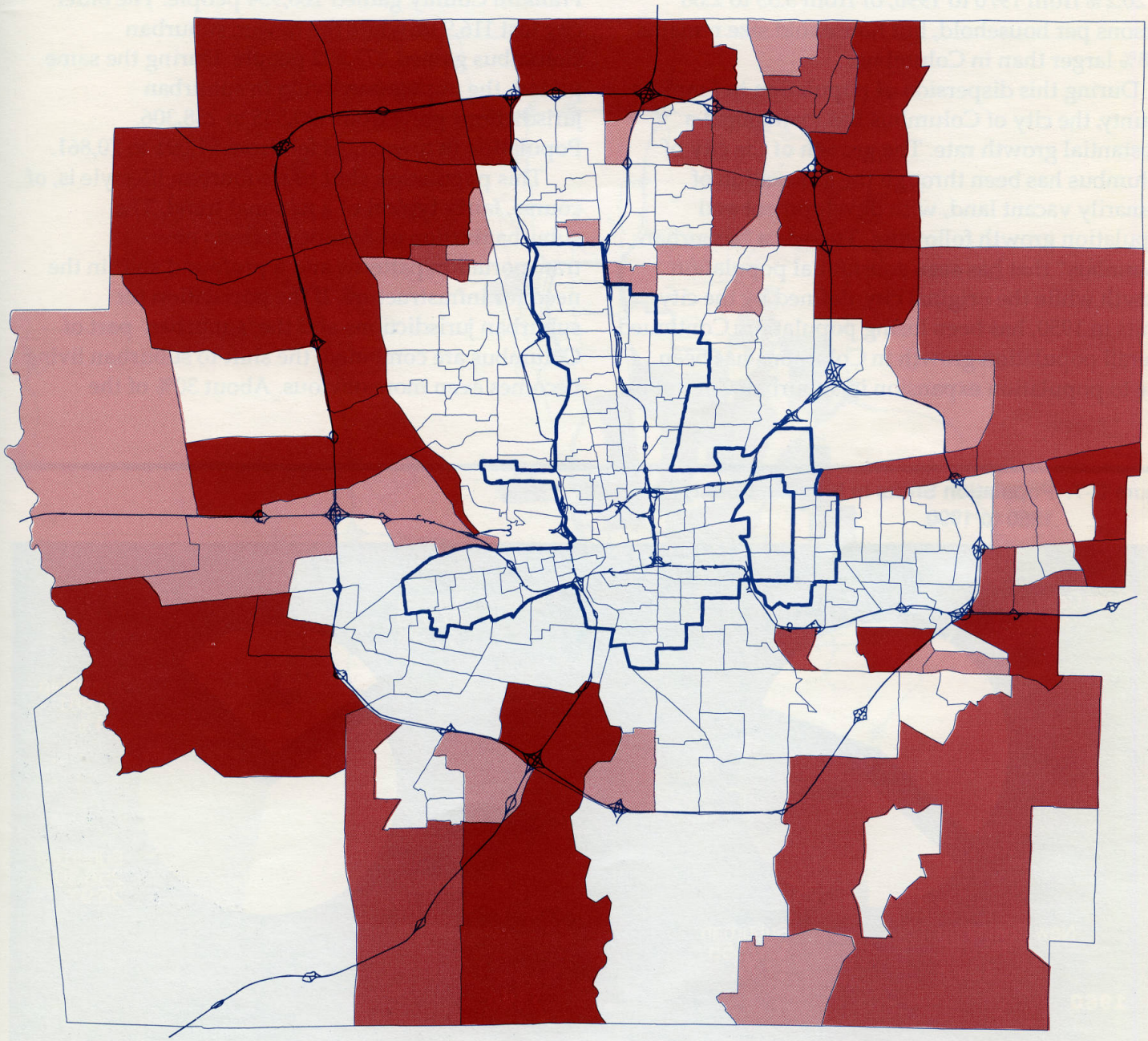


Map Three: **Population Gain**
1980 to 1990

Over 50%

30% to 50%

10% to 30%



concentrated in the older part of Columbus and some of the older suburban jurisdictions.

Map Three illustrates areas of population growth of 10% or more. This growth is occurring throughout the fringe of Franklin County, predominantly outside or around the I-270 Outerbelt. An examination of the remainder of Franklin County outside of the city of Columbus illustrates that housing construction has been augmented by larger, albeit declining, household sizes. An additional 38,870 housing units were added to the housing stock from 1970 to 1990, for a total growth of 43.8%. Household size declined by 20.2% from 1970 to 1990, or from 3.33 to 2.66 persons per household, but household size remains 11.8% larger than in Columbus.

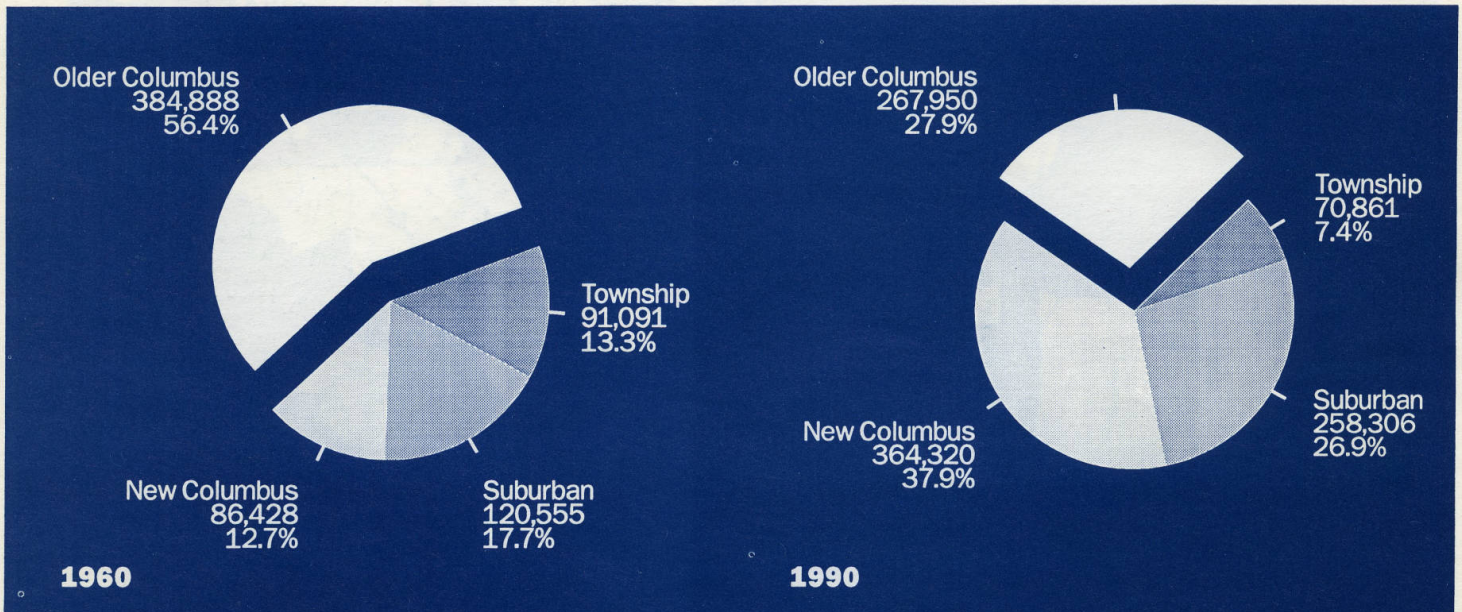
During this dispersion of population in Franklin County, the city of Columbus has maintained a substantial growth rate. The growth of the city of Columbus has been through the annexation of primarily vacant land, with development and population growth following. There is a "suburban Columbus" that has seen substantial population growth while the original city, defined by the city limits in 1950, has been losing population. Continued overall population growth in Columbus has been due to population expansion in suburban Columbus. (The 1950 boundary of Columbus is marked by the heavier black line on Maps Two and Three.)

Between 1960 and 1970, the total population of Columbus increased by 68,709. The older city lost 35,589 people while the newer city gained 104,298. In the 1970 to 1980 period, total population growth slowed to 25,344. The older city loss increased to 61,576 while the newer city gained 86,920. From 1980 to 1990, total population increased by 67,889. Population loss in the older city slowed to 19,773, while suburban Columbus gained 87,662.

Overall, between 1960 and 1990 Columbus inside Franklin County gained 160,954 people. The older city lost 116,938, while the newer, suburban Columbus gained 277,892 people. During the same period, the population living in suburban jurisdictions grew from 120,555 to 258,306. Population in townships fell from 91,091 to 70,861.

This population shift to a suburban lifestyle is, of course, fairly typical of a national trend. The suburbanization of America reflects new transportation patterns and a profound shift in the need for infrastructure. If the population for suburban jurisdictions and the 'suburban' part of Columbus are combined, the shift to suburban living becomes even more obvious. About 30% of the

Figure G-7: **Population Shifts in Franklin County 1960 to 1990**



Franklin County's population has become increasingly suburbanized over the last thirty years. In 1960, over 56% of the population lived within the 1950 Columbus boundary, while a little over 30% was suburban (defined as the newer parts of Columbus and other suburbs.) By 1990, the ratio had reversed, with under 28% of the population in the older city and almost 65% suburbanized.

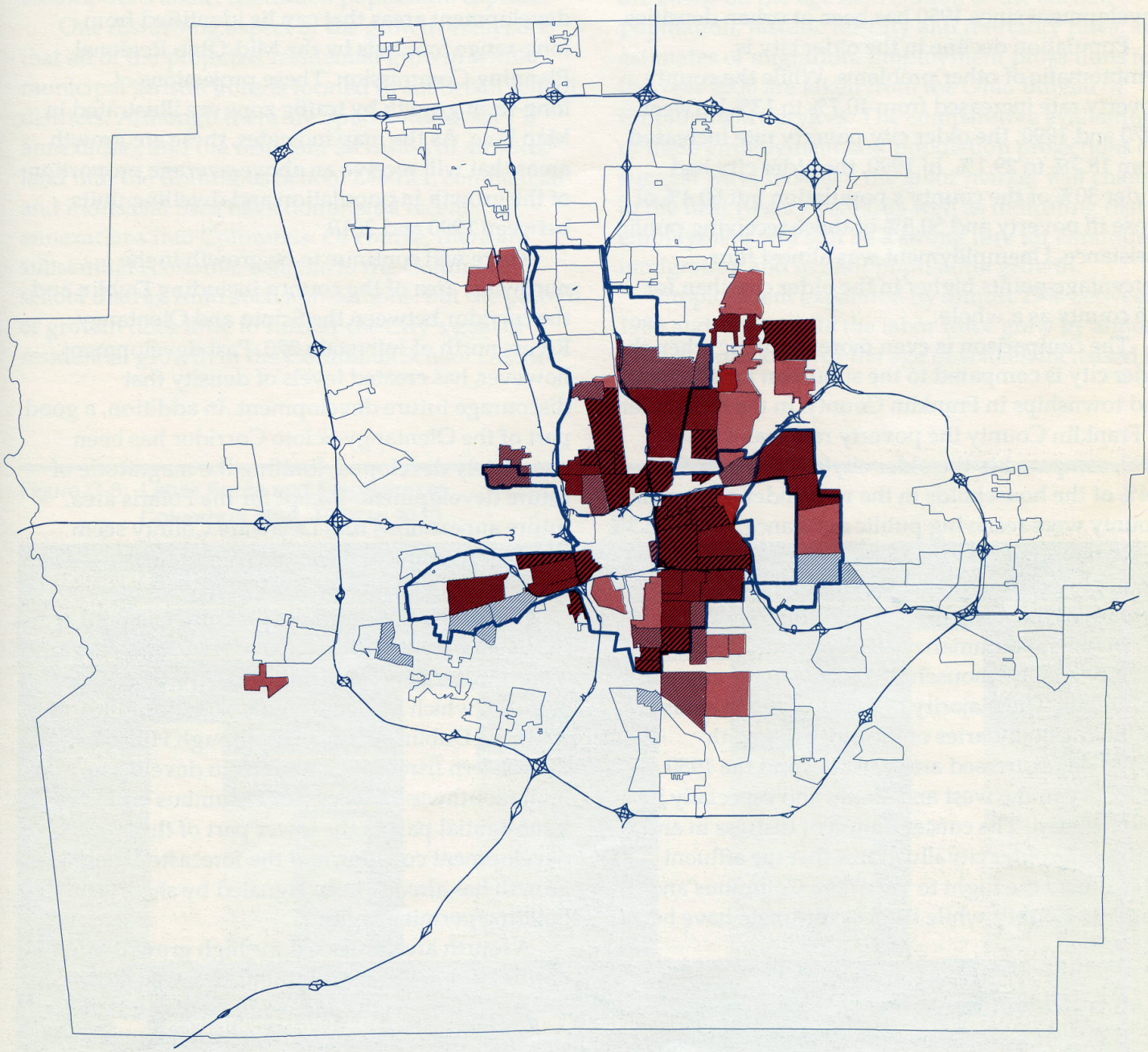
Map Four: **Median Income and Poverty Rates**

Median income under 80% of county

Median income under 50% of county

Poverty rates 13% to 25.9%

Poverty rates 26% and over



Franklin County population was suburban in 1960, but that percentage more than doubled in thirty years until almost 65% of the population lived in "suburban" areas in 1990. Township population dropped from 13.3% to 7.4% of the total, while the most substantial loss was in the older city of Columbus, with the percentage of total county population falling from 56.4% in 1960 to 27.9% in 1990. (See Figure G-7.) The older city/suburban distinction is drawn to illustrate a trend in population dispersion and is not meant as an absolute comparison. Some parts of the older city of Columbus have a suburban flavor, while some development since 1950 has been at urban densities.

Population decline in the older city is symptomatic of other problems. While the county poverty rate increased from 10.7% to 13% between 1970 and 1990, the older city poverty rate increased from 18.7% to 29.1%. In 1990, the older city had under 30% of the county's population but 60.4% of those in poverty and 50.5% of those receiving public assistance. Unemployment was almost four percentage points higher in the older city than for the county as a whole.

The comparison is even more dramatic when the older city is compared to the suburban jurisdictions and townships in Franklin County. In the remainder of Franklin County the poverty rate was 4.9% in 1990, compared to the older city's 29.1% rate. Only 3.4% of the households in the remainder of Franklin County were receiving public assistance, while 15.3% of the households in the older city were. Unemployment in the remainder of the county in 1990 was 3.5%, compared to the older city's 8.9%.

Map Four summarizes the concentrations of poverty and low household income in the city of Columbus. The majority of disadvantaged areas are within the boundaries of the older city, with additional distressed areas just beyond the 1950 boundary in the west and south, and especially in the northeast. The concentration of distress in and around the older city illustrates that the affluent have fueled the flight to suburban Columbus and Franklin County, while the less fortunate have been left behind.

Future Growth Patterns

Continued population growth in the city of Columbus is a function of the continued growth and prosperity of Franklin County and the central Ohio region. From 1970 to 1990, Columbus captured 72.2% of the population growth in Franklin County. Its percentage of the total population has risen from 65% to 65.8%. Franklin County's share of regional growth, however, has not been as constant. In the 1960s, the county captured 78.7% of the population growth in the Columbus MSA, but this rate fell to 38% in the 1970s. The county capture rate recovered substantially in the 1980s, rising to 69.1% of MSA growth. Based on the long-term population forecasts prepared for this report, the capture rate should increase to 72.6% for the 1990-2010 period. (See Appendix C: Table G-11.)

Within Franklin County, there are five major development areas that can be identified from long-range forecasts by the Mid-Ohio Regional Planning Commission. These projections of long-term growth by traffic zone are illustrated in Map Five. As the map indicates, these are growth areas that will receive an above-average proportion of the growth in population and dwelling units between 1990 and 2010.

There will continue to be growth in the northwest area of the county, including Dublin and the corridor between the Scioto and Olentangy Rivers north of Interstate 270. Past development, however, has created levels of density that discourage future development. In addition, a good part of the Olentangy-Scioto Corridor has been completely developed, limiting the magnitude of future development. Except for the Polaris area, future annexations into Delaware County seem unlikely, so some of the expansion pressures in the north/northwest will be redirected.

Part of the development pressure will spill across the Olentangy to the east above I-270, and part forms a third major development area in the trans-Scioto corridor, which stretches south from Route 161 in southern Dublin, along I-270 through Hilliard and the western fringe of Columbus to developing areas in the southwest. The city of Columbus encompasses a substantial part of the lower part of this development corridor, and the forecasted long-term growth has already been signaled by short term building permit activity.

A fourth area projected for high growth is in the northeast, starting in Columbus between Morse Road and Westerville and continuing east into Gahanna, New Albany and Jefferson and Plain Townships.

The fifth major development area is an arc from around Broad Street and Reynoldsburg in the far

east, through the Brice-Tussing area in the southeast and Groveport. Additional growth pressures will continue in the Licking County portion of Reynoldsburg and the Fairfield County portion of Columbus.

A significant portion of this growth is forecast for areas already in the city of Columbus. This lends credence to long-term population forecasts for the city of Columbus. Population forecasts for the city are based on projections of county growth and maintenance of historic population capture rates. It is encouraging to have independent corroboration of assumptions about continued population capture.

One disturbing aspect of the growth analysis is that all of the projected residential growth within municipal jurisdictions is located in suburban school districts. Although there are opportunities for annexation, and the resultant inclusion of annexed land into the Columbus School District, commercial and industrial uses have dominated recent annexations into Columbus. Of course, there are substantial economic benefits to the Columbus school district from such annexations, but the pattern of growth does little to further the City's goal of residential growth in the Columbus School District.

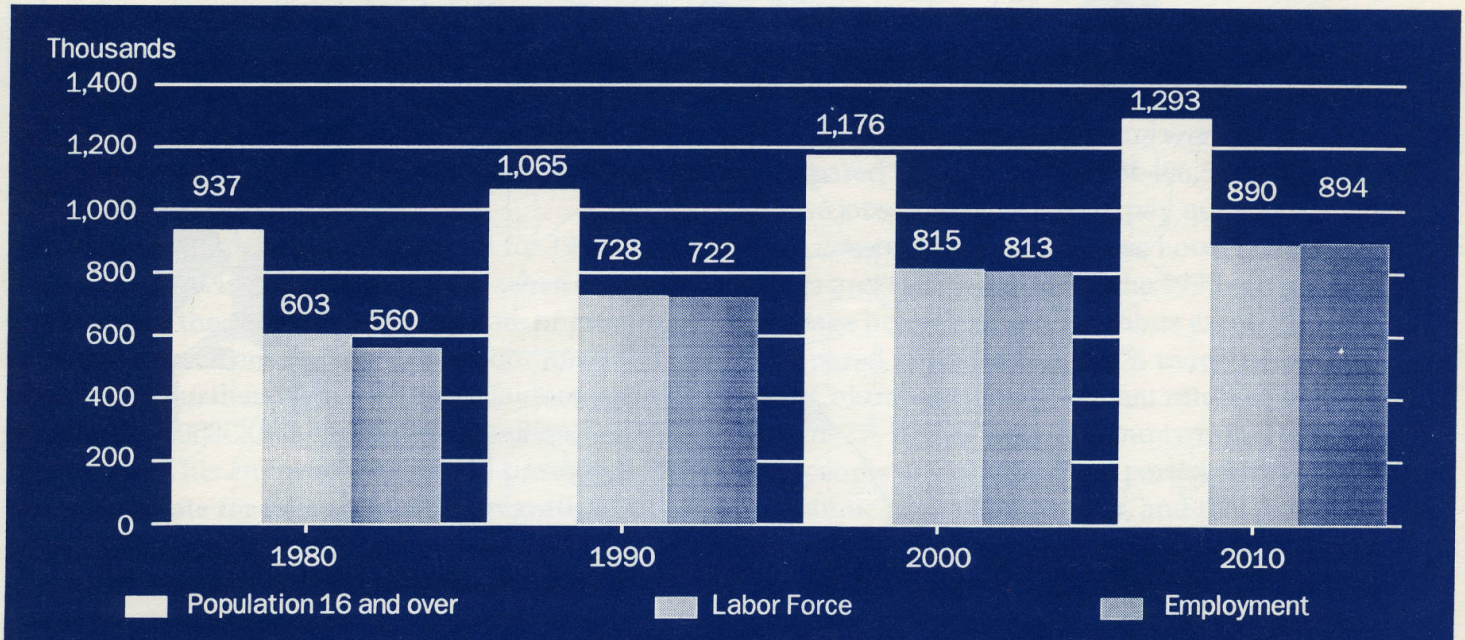
Employment And Population Growth

Economic and demographic trends are closely related. A rapidly increasing population creates a demand for goods and services that increases employment. Expanding employment enhances the attractiveness of an area for migrants. There are, of course, independent variables at work as well. Shifting age patterns and fertility rates change the underlying population dynamic of a region, and the national economic cycle can override local trends in job creation.

Population projections prepared for this report are based on the age distribution of the current population, historic fertility and mortality rates, and estimates of migration. Employment projections for the year 2000 are taken from the Ohio Bureau of Employment Services. The comparative evaluation of these employment and population projections can suggest ways in which the labor market will change in the next twenty years, as well as indicating that employment will still be a strong lure for continued inmigration and overall population growth.

Employment expanded by almost 29% between 1980 and 1990, while the labor force grew by almost 21%. Population over the age of sixteen increased by

Figure G-8: **Labor Force and Employment Columbus MSA, 1980 to 2010**

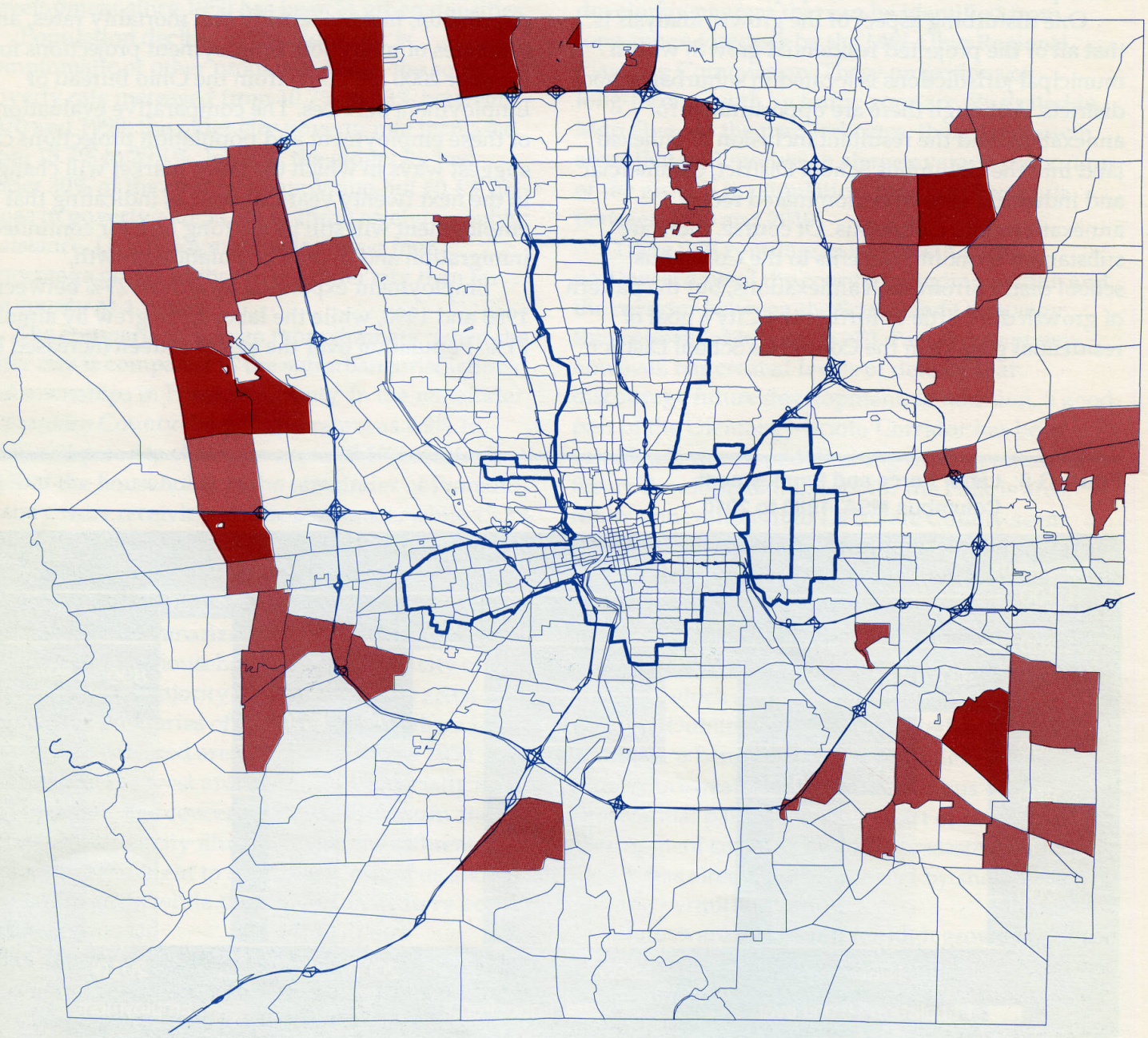


Labor force participation rates are expected to increase, resulting in an 87,000 increase in the Columbus MSA labor force between 1990 and 2000. Lower participation rates in higher age brackets drops this 2000-2010 increase to 75,000. The gap between total employment and the labor force should remain narrow, encouraging continued positive inmigration.

Map Five: **Growth Areas 1990 to 2010**

Housing unit increase between 500 and 1000, Population increase between 1000 and 2000

Housing unit increase greater than 1000, Population increase greater than 2000



13.7% during this period, with the rest of the increase in the labor force arising from increased labor force participation rates. The overall participation rate increased from 64.4% in 1980 to 68.3% in 1990.

As the population ages and more women move out of their prime child-bearing years, the rate of population increase will slow. The Columbus MSA population, which grew by 10.7% between 1980 and 1990, will grow by 9.2% from 1990 to 2000, and 7% between 2000 and 2010. The population sixteen years of age and over will continue to grow faster than the overall population, although its growth rate will also decline. From 1990 to 2000 the sixteen-plus population is forecast to grow by 10.4%, with the rate declining to 9.9% for the 2000-2010 period. (See Appendix C: Table G-12 and Figure G-8.)

The civilian labor force, defined as those people aged sixteen and over who are employed or seeking employment, will expand by 11.9% during the 1990-2000 period. This growth rate is somewhat higher than the base population rate, since the rate of labor force participation is expected to increase from 68.3% to 69.3%. From 2000 to 2010, the rate of labor force expansion falls to 9.3%, as more of the population ages past fifty-five. Although the forecast still indicates higher participation rates by older workers, there is a substantial drop in age-specific rates between those 45 to 54 and potential workers over 55.

The Ohio Bureau of Employment Services reported 560,200 jobs in the Columbus MSA in 1980, when the civilian labor force was estimated at over 603,000. This period also saw substantial net outmigration from the central Ohio area. In 1990, the gap between labor force and employment has shrunk substantially, and central Ohio is experiencing a net inmigration of population.

The employment growth forecast for 1990 to 2000 is 12.7%, which is quite conservative when compared to growth in the 1980s. Even at this rate of growth, the gap between employment and labor force will shrink even further. With a 10% employment growth forecast for 2000-2010, employment will exceed the labor force. This environment should provide a healthy climate for the continued inmigration that central Ohio has experienced in recent years.

The nature of the labor force will also be changing, as population aging creates a comparative shortage of younger, entry-level workers and an increase in the proportion of older workers in the workplace. The last of the baby boom, aged between 25 and 34, comprised 32% of the labor force in 1990, while 24% of the labor force was 45 and over. By 2010, 25% of the labor force will be between 25 and 34, while the proportion 45 and over grows to 36%. In a work force that is already ranking job satisfaction increasingly important, the age factor should also increase the importance of job security. With more workers in what are traditionally peak earning years, the wage structure of the labor force should be biased toward higher paying jobs, but workers will need to be more productive to support such a wage structure. Current trends toward flexibility in the workplace, and the increased emphasis on training to adapt to changing work duties, should become more important.

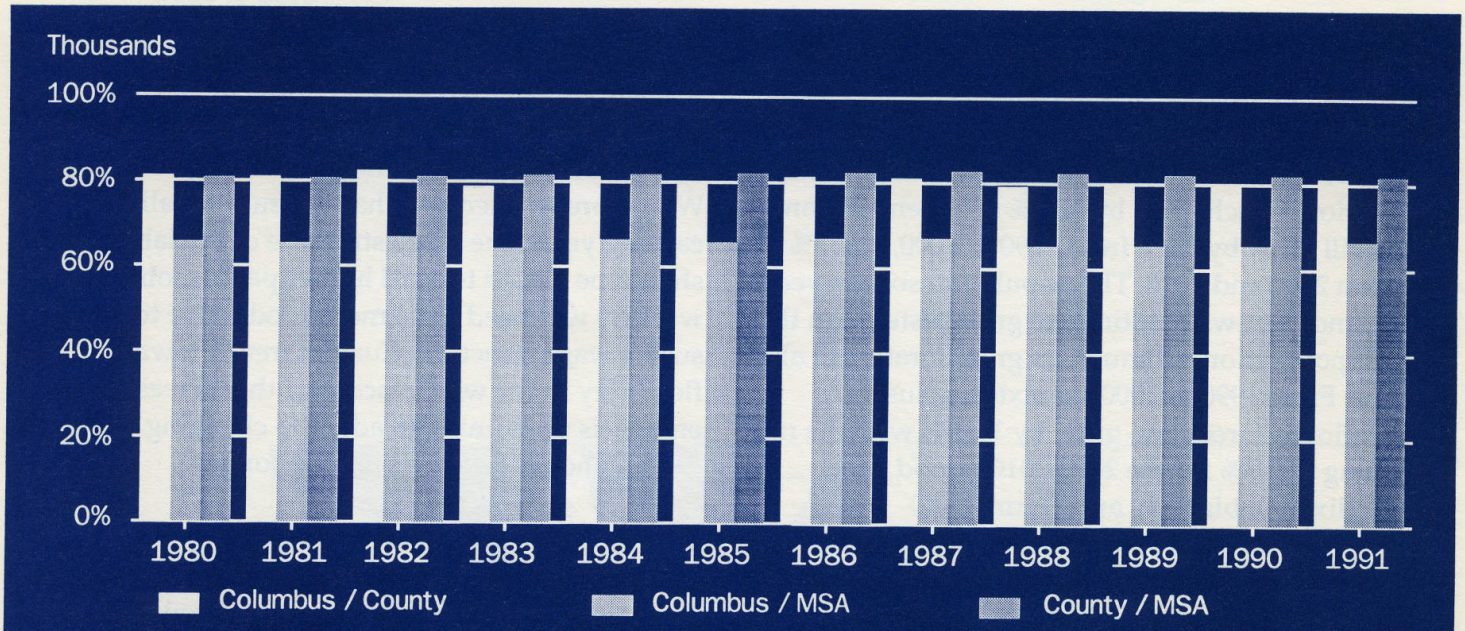
The Economic Vitality Of The City

The focus of much of this report has been on the population and economic trends of Franklin County and the Columbus Metropolitan Statistical Area. The assumption is that, if the central Ohio area grows and prospers, so will the city of Columbus. In fact, it can be argued that a strong central city is a major factor in encouraging continued growth and prosperity for the region. It is, however, useful to monitor the city's success in sharing in the area's prosperity, and that is why the geographic analysis of growth devotes so much attention to capture rates.

Columbus residents capture about two-thirds of the County's total wage and salary employment. Based on OBES estimates of employment by place of residence, city residents held about 64% of all covered employment in Franklin County in 1988-1991 period. The 1990 Census indicates that 325,088 residents of Columbus were employed, compared to a county total of 496,524, or 65.4%. These jobs do not, however, pay quite as well. Based on a comparison of only those households reporting wage and salary income in the 1990 census, the average household in Columbus earned $31,117, compared to $35,369, or 13.7% more, in the county. The Columbus unemployment rate also tends to be about .7% higher than the county rate. Nevertheless, the people of Columbus are participating in the economic growth of the area, and this participation helps to fuel the expanded population growth and housing expansion detailed earlier in this document.

From a city government perspective, it is also important to note that city revenues are growing with the economic expansion in Franklin County and the Columbus MSA. The city of Columbus is an

Figure G-9: **Wage Capture Rates**
Columbus and Franklin County, 1980 to 1991



Both the city of Columbus and Franklin County have shared in the growth of the central Ohio area. Based on extrapolations from income tax withholding collections, about 80.6% of all wages earned in Franklin County are earned and taxed in Columbus. Franklin County wages are 81.8% of the MSA total from 1980 to 1991. These capture rates indicate the continued economic vitality of Columbus and the interdependence of the region.

employment center for the region, and taxes income earned within its boundaries. Based on income taxes withheld on wages and salaries, it is possible to estimate the total wages earned in the city. This total can be compared to Ohio Bureau of Employment Service estimates of wages earned in Franklin County and the Columbus MSA. The Columbus rate of wage capture in Franklin County has been fairly constant over the last twelve years. The cumulative capture has been 80.6%. Data for the last three years has been adjusted for inter-city transfers, but this adjustment does not seem to affect the overall level of capture significantly. Similarly, the Columbus rate of wage capture in the MSA has also held steady from 1980 through 1991 at 65.9%. For the same period, Franklin County's cumulative capture rate in the MSA is 81.8%. The stability of this rate reflects the continuing vitality of Columbus within the central Ohio regional economy and the economic interdependence of the region. (See Appendix C: Table G-13 and Figure G-9.) The stability of the rate, of course, does not insulate the city from economic fluctuations. In the 1988-90 period, city income tax revenues from withholding grew by between 6.3% and 7%, while the 1991 growth rate was 5.2%. It is too early to tell if economic recovery will return city revenue growth to higher levels. Nothing in the local employment forecast, however, would suggest substantial increases in growth.

In residential geography, it seems clear that past patterns of dispersion are continuing and, with the projections of continuing expansion on the fringe of Columbus, these patterns will pose a continuing challenge to city and county infrastructure. The Columbus central city population continues to shrink, albeit at a decreasing rate. There is a sharp income disparity between the central city population and those living in the rest of central Ohio. The economic geography of the city is sound, although commercial building activity has been sharply curtailed by the current recession and the Columbus preeminence in office development is clearly at an end. The city's economic vitality seems to be on a firm footing as well, although substantial changes in the urban geography of job dispersal could affect that evaluation.

Appendix A: Demographic Patterns of Growth

Table P-1: Population Trends, 1960 to 1992
Columbus Metropolitan Area

County:	Population					Average Annual Growth Rate				1990 Land Area Square Miles	1990 Pop. Per Square Mile
	1992	1990	1980	1970	1960	1990-92	1980-90	1970-80	1960-70		
Delaware	68,309	66,929	53,840	42,908	36,017	1.03%	2.43%	2.55%	1.91%	443	151.1
Fairfield	104,289	103,461	93,678	73,301	63,951	0.40%	1.04%	2.78%	1.46%	506	204.5
Franklin	**979,658**	**961,437**	**869,132**	**833,249**	**682,923**	**0.95%**	**1.06%**	**0.43%**	**2.20%**	**542**	**1,773.9**
Columbus	**644,905**	**632,910**	**564,871**	**540,025**	**471,316**	**0.95%**	**1.20%**	**0.46%**	**1.46%**	**198**	**3,196.5**
Licking	129,270	128,300	120,981	107,799	90,242	0.38%	0.60%	1.22%	1.95%	686	187.0
Madison	37,480	37,068	33,004	28,318	26,454	0.56%	1.23%	1.65%	0.70%	467	79.4
Pickaway	48,363	48,255	43,662	40,071	35,855	0.11%	1.05%	0.90%	1.18%	503	95.9
Union	32,305	31,969	29,536	23,786	22,853	0.53%	0.82%	2.42%	0.41%	437	73.2
MSA Total	**1,399,674**	**1,377,419**	**1,243,833**	**1,149,432**	**958,385**	**0.81%**	**1.07%**	**0.82%**	**1.99%**	**3,584**	**384.3**
Ohio Total	**NA**	**10,847,115**	**10,797,630**	**10,657,423**	**9,706,397**	**NA**	**0.05%**	**0.13%**	**0.98%**	**41,004**	**264.5**
U.S.A. Total	**NA**	**248,709,873**	**227,757,000**	**205,052,000**	**180,671,000**	**NA**	**0.92%**	**1.11%**	**1.35%**	**3,539,289**	**70.3**

Source: 1960, 1970, 1980 and 1990 Population data: U.S. Department of the Commerce, Bureau of the Census.
1992 Population estimates: City of Columbus Development Department, Planning Division.

Table P-2: Net Migration/Increase Estimates, 1980 to 1989
Columbus Metropolitan Area

County:	Net Migration									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Delaware	272	788	100	701	764	979	1,519	1,941	1,600	1,429
Fairfield	76	(492)	(421)	(59)	175	525	1,120	875	854	1,173
Franklin	**(1,690)**	**(5,876)**	**(3,405)**	**(2,576)**	**(1,140)**	**1,018**	**1,537**	**1,989**	**121**	**2,249**
Licking	295	3	(87)	(573)	(68)	(31)	328	135	349	1,193
Madison	131	(88)	34	(339)	339	(53)	205	250	251	(21)
Pickaway	(472)	(208)	(92)	(11)	142	(361)	130	252	155	(129)
Union	58	(86)	(348)	231	(83)	72	249	414	144	116
MSA Total	**(1,330)**	**(5,959)**	**(4,219)**	**(2,626)**	**129**	**2,149**	**5,088**	**5,856**	**3,474**	**6,010**
Ohio Total	**(75,727)**	**(92,824)**	**(73,149)**	**(70,814)**	**(62,517)**	**(48,621)**	**(31,505)**	**(24,795)**	**(19,732)**	**(11,579)**

Source: Department of the Treasury, Internal Revenue Service, County Migration Flows.

County:	Net Natural Increase									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Delaware	399	418	335	428	396	398	462	347	472	428
Fairfield	770	679	648	495	489	570	496	559	460	529
Franklin	**7,172**	**7,321**	**7,465**	**7,517**	**7,712**	**7,994**	**7,664**	**7,675**	**8,563**	**9,300**
Licking	767	867	859	689	752	752	721	647	715	746
Madison	231	189	203	212	213	186	239	183	216	228
Pickaway	261	266	302	233	245	296	198	253	269	261
Union	229	225	284	187	223	260	164	196	221	197
MSA Total	**9,829**	**9,965**	**10,096**	**9,761**	**10,030**	**10,456**	**9,944**	**9,860**	**10,916**	**11,689**
Ohio Total	**70,477**	**70,461**	**70,133**	**61,220**	**61,904**	**61,657**	**58,349**	**58,643**	**60,019**	**65,838**

Source: Ohio Department of Health, Statistical Analysis Unit, "Vital Statistics Summary, 1980-1989".

Table P-3: **Household Size Trends, 1960 to 1990**
Columbus Metropolitan Area

1990 County:	Population	In Group Quarters	Population In Households	Persons Per Household	Total Households
Delaware	66,929	2,719	64,210	2.78	23,116
Fairfield	103,461	2,497	100,964	2.74	36,813
Franklin	**961,437**	**25,317**	**936,120**	**2.47**	**378,723**
Columbus	**632,910**	**20,520**	**612,390**	**2.38**	**256,996**
Licking	128,300	3,297	125,003	2.65	47,254
Madison	37,068	4,221	32,847	2.74	11,990
Pickaway	48,255	5,830	42,425	2.72	15,602
Union	31,969	1,838	30,131	2.73	11,037
MSA Total	**1,377,419**	**45,719**	**1,331,700**	**2.54**	**524,535**
1980 County:					
Delaware	53,840	2,729	51,111	2.91	17,588
Fairfield	93,678	760	92,918	2.92	31,806
Franklin	**869,132**	**27,720**	**841,412**	**2.60**	**323,150**
Columbus	**564,871**	**23,508**	**541,363**	**2.49**	**217,513**
Licking	120,981	2,910	118,071	2.79	42,322
Madison	33,004	1,989	31,015	2.93	10,598
Pickaway	43,662	2,274	41,388	2.92	14,154
Union	29,536	766	28,770	2.87	10,030
MSA Total	**1,243,833**	**39,148**	**1,204,685**	**2.68**	**449,648**
1970 County:					
Delaware	42,908	2,903	40,005	3.22	12,428
Fairfield	73,301	1,554	71,747	3.17	22,629
Franklin	**833,249**	**33,964**	**799,285**	**3.08**	**259,321**
Columbus	**540,025**	**28,135**	**511,890**	**2.96**	**173,056**
Licking	107,799	2,486	105,313	3.17	33,183
Madison	28,318	1,609	26,709	3.26	8,183
Pickaway	40,071	3,560	36,511	3.26	11,210
Union	23,786	525	23,261	3.14	7,418
MSA Total	**1,149,432**	**46,601**	**1,102,831**	**3.11**	**354,372**
1960 County:					
Delaware	36,107	2,147	33,960	3.35	10,143
Fairfield	63,951	1,352	62,599	3.29	19,041
Franklin	**682,923**	**29,331**	**653,592**	**3.26**	**200,763**
Columbus	**471,316**	**23,538**	**447,778**	**3.14**	**142,378**
Licking	90,242	1,923	88,319	3.25	27,155
Madison	26,454	1,933	24,521	3.48	7,050
Pickaway	35,855	4,030	31,825	3.41	9,330
Union	22,853	517	22,336	3.28	6,811
MSA Total	**958,385**	**41,233**	**917,152**	**3.19**	**280,293**

Table P-4: **Household Growth Estimates, 1960 to 1990**
Columbus Metropolitan Area

County:	Households				Average Annual Growth Rate		
	1990	1980	1970	1960	1980-1990	1970-1980	1960-1970
Delaware	23,116	17,588	12,428	10,143	3.14%	4.15%	2.25%
Fairfield	36,813	31,806	22,629	19,041	1.57%	4.06%	1.88%
Franklin	**378,723**	**323,150**	**259,321**	**200,763**	**1.72%**	**2.46%**	**2.92%**
Columbus	**256,996**	**217,513**	**173,056**	**142,378**	**1.82%**	**2.57%**	**2.15%**
Licking	47,254	42,322	33,183	27,155	1.17%	2.75%	2.22%
Madison	11,990	10,598	8,183	7,050	1.31%	2.95%	1.61%
Pickaway	15,602	14,154	11,210	9,330	1.02%	2.63%	2.02%
Union	11,037	10,030	7,418	6,811	1.00%	3.52%	0.89%
MSA Total	**524,535**	**449,648**	**354,372**	**280,293**	**1.67%**	**2.69%**	**2.64%**

Source: 1960, 1970, 1980 and 1990 data: U.S. Department of Commerce, Bureau of the Census.

Table P-5: **Population Estimates and Projections by Age Cohort**
1980, 1990, 2000 and 2010, Columbus Metropolitan Area

Age Cohorts	Population 1980	Percent In Group	Population 1990	Percent In Group	Population 2000	Percent In Group	Population 2010	Percent In Group
0-4	90,748	7.30%	102,871	7.47%	98,225	6.53%	97,469	6.06%
5-9	94,002	7.56%	98,800	7.17%	103,182	6.86%	95,492	5.94%
10-14	98,660	7.93%	90,872	6.60%	103,786	6.90%	99,256	6.17%
15-19	119,345	9.59%	100,817	7.32%	114,788	7.63%	119,351	7.42%
20-24	135,014	10.85%	124,106	9.01%	128,102	8.52%	142,750	8.87%
25-29	116,845	9.39%	131,736	9.56%	108,847	7.24%	125,122	7.78%
30-34	103,602	8.33%	130,266	9.46%	111,966	7.44%	115,265	7.16%
35-39	78,106	6.28%	114,149	8.29%	130,336	8.67%	105,263	6.54%
40-44	65,764	5.29%	100,500	7.30%	124,330	8.27%	106,431	6.62%
45-49	61,184	4.92%	75,071	5.45%	109,141	7.26%	124,565	7.74%
50-54	63,143	5.08%	61,694	4.48%	95,086	6.32%	118,285	7.35%
55-59	58,535	4.71%	55,344	4.02%	70,196	4.67%	102,655	6.38%
60-64	47,189	3.79%	53,494	3.88%	54,703	3.64%	84,833	5.27%
65-69	37,997	3.05%	46,830	3.40%	44,990	2.99%	57,591	3.58%
70-74	29,407	2.36%	34,708	2.52%	38,545	2.56%	39,817	2.47%
75 +	44,292	3.56%	56,161	4.08%	67,776	4.51%	74,740	4.65%
MSA Total	**1,243,833**	**100.00%**	**1,377,419**	**100.00%**	**1,503,999**	**100.00%**	**1,608,886**	**100.00%**

Source: 1980 & 1990 data: U.S. Department of Commerce, Bureau of the Census
2000 & 2010 Projections: City of Columbus Development Department.

Table P-6: **Population Growth Forecast, 1980 to 2010**
Columbus Metropolitan Area
(Percent Change)

County:	Population						Average Annual Percent Change				
	2010	2005	2000	1995	1990	1980	2005-10	2000-05	1995-00	1990-95	1980-90
Delaware	92,871	86,657	80,434	73,824	66,929	53,840	1.43%	1.55%	1.79%	2.06%	2.43%
Fairfield	117,232	114,277	111,051	107,602	103,461	93,678	0.52%	0.58%	0.64%	0.80%	1.04%
Franklin	**1,129,386**	**1,089,527**	**1,050,213**	**1,006,990**	**961,437**	**869,132**	**0.73%**	**0.75%**	**0.86%**	**0.95%**	**1.06%**
Columbus	**743,470**	**717,231**	**691,351**	**662,897**	**632,910**	**564,871**	**0.73%**	**0.75%**	**0.86%**	**0.95%**	**1.20%**
Licking	139,190	138,231	136,411	133,146	128,300	120,981	0.14%	0.27%	0.49%	0.76%	0.60%
Madison	43,616	43,114	41,839	39,123	37,068	33,004	0.23%	0.61%	1.39%	1.11%	1.23%
Pickaway	48,504	48,812	48,870	48,794	48,255	43,662	-0.13%	-0.02%	0.03%	0.22%	1.05%
Union	38,087	36,638	35,181	33,648	31,969	29,536	0.79%	0.83%	0.91%	1.05%	0.82%
MSA Total	**1,608,886**	**1,557,256**	**1,503,999**	**1,443,127**	**1,377,419**	**1,243,833**	**0.66%**	**0.71%**	**0.84%**	**0.95%**	**1.07%**

Source: Base Projections from, "Projected Population", Ohio Data Users Center, August 1985.
Revision by the City of Columbus Development Department.

Table P-7: **Population Growth Forecast, 1980 to 2010**
Columbus Metropolitan Area
(Actual Change)

County:	Population						Average Annual Change				
	2010	2005	2000	1995	1990	1980	2005-10	2000-05	1995-00	1990-95	1980-90
Delaware	92,871	86,657	80,434	73,824	66,929	53,840	1,243	1,245	1,322	1,379	1,309
Fairfield	117,232	114,277	111,051	107,602	103,461	93,678	591	645	690	828	978
Franklin	**1,129,386**	**1,089,527**	**1,050,213**	**1,006,990**	**961,437**	**869,132**	**7,972**	**7,863**	**8,645**	**9,111**	**9,231**
Columbus	**743,470**	**717,231**	**691,351**	**662,897**	**632,910**	**564,871**	**5,248**	**5,176**	**5,691**	**5,997**	**6,804**
Licking	139,190	138,231	136,411	133,146	128,300	120,981	192	364	653	969	732
Madison	43,616	43,114	41,839	39,123	37,068	33,004	100	255	543	411	406
Pickaway	48,504	48,812	48,870	48,794	48,255	43,662	(62)	(12)	15	108	459
Union	38,087	36,638	35,181	33,648	31,969	29,536	290	291	307	336	243
MSA Total	**1,608,886**	**1,557,256**	**1,503,999**	**1,443,127**	**1,377,419**	**1,243,833**	**10,326**	**10,651**	**12,174**	**13,142**	**13,359**

Source: Base Projections from, "Projected Population", Ohio Data Users Center, August 1985.
Revision by the City of Columbus Development Department.

Appendix B: Economic Patterns of Growth

Table E-1: **Columbus MSA Employment, 1973 to 1992 (790 Series)**

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
TOTAL (Thousands)	493.9	501.8	488.2	500.0	517.6	543.2	558.4	560.2	556.9	544.0	548.5
GOODS-PRODUCING INDUSTRIES	147.0	143.9	127.2	128.0	135.0	140.0	142.0	135.1	129.7	118.4	116.7
Manufacturing	120.7	119.4	106.6	108.1	113.6	117.0	117.8	112.6	109.1	101.0	98.7
Durable Goods	83.5	82.1	71.8	72.9	77.3	79.5	79.2	73.9	71.1	64.9	63.5
Stone, clay and glass	15.2	15.2	13.9	14.6	14.9	15.0	14.4	14.0	13.7	12.8	12.6
Fabricated metal products	11.7	10.9	10.1	10.9	12.1	12.7	13.6	12.6	12.8	10.5	10.4
Machinery, except electrical	12.8	13.5	12.4	12.4	13.2	13.8	13.6	13.0	12.6	11.2	9.8
Electric & electronic equip	19.2	17.9	13.9	12.8	14.8	15.6	15.0	14.0	12.6	11.6	10.7
Transportation equip	9.6	9.7	9.0	9.8	9.3	8.5	8.2	8.0	8.1	8.8	10.4
Instruments & related	1.1	1.1	4.4	4.9	5.3	5.4	5.1	4.4	4.3	3.9	3.9
Nondurable Goods	37.2	37.3	34.8	35.2	36.4	37.5	38.7	38.7	38.0	36.1	35.2
Food & kindred	11.5	11.8	11.5	11.1	11.2	10.9	11.0	11.2	11.1	10.6	10.3
Printing & publishing	8.1	8.1	7.9	8.0	8.3	8.6	8.9	9.2	9.1	8.8	8.9
Chemicals & allied	6.2	6.4	6.2	6.3	6.5	6.8	7.0	7.2	7.1	7.0	6.9
Rubber & misc plastics	1.5	1.5	3.6	4.0	4.3	4.8	5.5	5.0	5.1	4.5	4.4
Construction	25.1	23.3	19.4	18.9	20.0	21.7	23.0	21.2	19.2	16.0	16.8
SERVICE-PRODUCING INDUSTRIES	346.9	357.9	361.0	372.0	382.6	403.2	416.4	425.1	427.2	425.6	431.8
Transportation & Public Utilities	25.4	25.1	23.8	24.3	25.4	26.6	27.3	26.8	26.3	25.3	24.7
Trucking & warehousing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.2
Communication, electric & gas	11.1	11.3	11.1	10.8	11.0	11.5	11.7	11.9	12.4	12.3	11.7
Wholesale Trade	22.7	23.5	23.3	24.3	26.0	27.8	28.9	28.6	28.6	28.4	29.1
Wholesale trade-durable	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18.8
Retail Trade	85.7	88.2	89.7	93.8	94.9	99.8	101.3	101.0	100.9	100.3	102.9
General merchandise stores	16.0	15.7	16.1	16.7	17.1	17.9	17.4	16.8	16.3	15.9	15.3
Finance, Insurance, Real Estate	30.7	31.6	31.5	32.2	33.2	35.7	38.3	40.1	41.8	43.5	45.0
Banking	6.0	6.3	6.4	6.5	6.6	7.1	8.0	8.4	8.7	9.0	9.2
Insurance carriers	13.5	14.0	14.0	14.0	14.5	15.8	16.9	17.6	18.1	18.6	18.8
Services	83.9	87.5	88.9	93.4	97.3	103.4	108.7	113.2	116.2	117.4	119.6
Business services	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22.2
Personnel supply	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Health services	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	33.2
Hospitals	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15.7
Engineering & management	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Government	98.5	102.0	103.8	104.0	105.8	109.9	111.9	115.4	113.4	110.7	110.5
Federal	16.2	16.5	16.0	15.2	15.0	14.8	14.6	14.7	14.5	14.5	14.3
State	42.6	43.9	44.2	43.8	45.0	47.0	48.8	49.8	49.6	48.8	48.8
Education	17.9	17.8	18.1	18.0	18.2	18.7	19.5	20.1	19.6	19.0	19.7
Local	39.7	41.6	43.6	45.1	45.8	48.2	48.5	50.8	49.3	47.5	47.4
Education	23.4	24.3	25.4	26.1	25.1	25.6	26.8	28.2	28.4	27.7	26.8

Table E-1: **Columbus MSA Employment, 1973 to 1992 (790 Series)(Continued)**

	1984	1985	1986	1987	1988	1989	1990	1991	1992	Numeric Change 1973-92	Percent Change 1973-92
TOTAL (Thousands)	**576.4**	**603.6**	**630.7**	**658.0**	**680.5**	**704.7**	**721.7**	**719.1**	**727.5**	**233.6**	**47.3%**
GOODS-PRODUCING INDUSTRIES	**125.0**	**129.0**	**130.7**	**131.8**	**132.6**	**135.5**	**134.9**	**130.4**	**129.3**	**-17.7**	**-12.0%**
Manufacturing	**104.7**	**106.1**	**105.8**	**103.9**	**102.6**	**104.9**	**104.8**	**102.8**	**101.0**	**-19.7**	**-16.3%**
Durable Goods	69.0	70.4	69.4	67.0	64.7	66.2	66.2	64.0	62.1	-21.4	-25.6%
Stone, clay and glass	12.3	11.8	11.5	10.7	10.0	9.9	9.8	9.7	10.0	-5.2	-34.2%
Fabricated metal products	11.2	11.5	10.8	9.8	9.5	9.9	9.7	8.9	8.4	-3.3	-28.2%
Machinery, except electrical	11.1	10.7	9.7	9.8	10.1	9.8	9.9	9.4	8.9	-3.9	-30.5%
Electric & electronic equip	11.4	11.3	10.9	10.4	9.6	9.4	9.4	9.6	9.3	-9.9	-51.6%
Transportation equip	12.2	13.6	15.0	14.2	12.8	14.3	15.2	15.1	14.3	4.7	49.0%
Instruments & related	4.1	4.3	4.2	4.2	4.4	4.7	4.4	4.1	4.2	3.1	281.8%
Nondurable Goods	35.7	35.7	36.4	37.0	37.9	38.9	38.6	38.7	39.0	1.8	4.8%
Food & kindred	10.1	9.8	9.9	10.2	10.4	10.5	10.5	11.0	11.1	-0.4	-3.5%
Printing & publishing	9.0	9.5	9.7	10.2	10.5	10.7	10.8	10.8	10.4	2.3	28.4%
Chemicals & allied	6.8	6.9	7.0	6.8	6.8	6.9	6.9	6.9	7.0	0.8	12.9%
Rubber & misc plastics	5.1	5.1	5.4	5.2	5.6	6.1	6.0	5.7	5.8	4.3	286.7%
Construction	**19.2**	**21.9**	**24.0**	**27.0**	**29.2**	**29.7**	**29.2**	**26.8**	**27.6**	**2.5**	**10.0%**
SERVICE-PRODUCING INDUSTRIES	**451.4**	**474.6**	**500.0**	**526.2**	**547.8**	**569.3**	**586.8**	**588.7**	**598.2**	**251.3**	**72.4%**
Transportation & Public Utilities	**26.1**	**26.0**	**26.6**	**28.2**	**30.0**	**31.2**	**31.0**	**31.0**	**31.4**	**6.0**	**23.6%**
Trucking & warehousing	10.4	10.5	10.7	11.8	12.3	13.1	13.0	13.3	14.2	N/A	N/A
Communication, elec & gas	11.9	11.4	11.5	11.8	12.2	12.4	12.8	12.9	12.3	1.2	10.8%
Wholesale Trade	**31.3**	**32.2**	**32.4**	**33.9**	**35.5**	**36.6**	**36.3**	**36.1**	**36.5**	**13.8**	**60.8%**
Wholesale trade-durable	20.3	21.2	21.2	21.8	22.9	23.5	23.0	22.9	22.9	N/A	N/A
Retail Trade	**110.0**	**118.6**	**125.0**	**133.3**	**138.5**	**144.5**	**147.4**	**145.5**	**148.2**	**62.5**	**72.9%**
General merchandise stores	15.8	16.7	18.3	21.2	20.4	21.2	20.9	20.7	22.1	6.1	38.1%
Finance, Insurance, Real Estate	**46.7**	**49.4**	**53.7**	**57.0**	**58.7**	**59.9**	**60.9**	**59.8**	**59.6**	**28.9**	**94.1%**
Banking	9.7	10.6	11.4	11.4	11.5	11.7	11.6	10.7	10.5	4.5	75.0%
Insurance carriers	18.9	19.6	21.3	22.8	23.2	23.4	23.0	22.6	22.6	9.1	67.4%
Services	**127.5**	**136.0**	**145.9**	**154.4**	**162.5**	**172.2**	**181.9**	**185.0**	**189.1**	**105.2**	**125.4%**
Business services	25.7	29.4	32.2	35.1	32.0	36.9	40.6	40.8	41.0	N/A	N/A
Personnel supply	N/A	N/A	N/A	N/A	11.0	12.6	15.7	14.6	13.6	N/A	N/A
Health services	34.2	36.0	37.9	39.2	42.0	44.4	46.4	48.2	49.6	N/A	N/A
Hospitals	15.7	15.9	16.6	17.6	19.3	20.6	21.7	22.2	22.3	N/A	N/A
Engineering & management	N/A	N/A	N/A	N/A	17.4	17.7	17.9	17.5	17.2	N/A	N/A
Government	**109.8**	**112.4**	**116.4**	**119.4**	**122.7**	**125.0**	**129.2**	**131.3**	**133.5**	**35.0**	**35.5%**
Federal	14.6	15.2	15.6	15.7	15.4	16.1	17.0	16.6	16.4	0.2	1.2%
State	48.5	49.0	51.0	52.7	53.9	54.5	56.2	56.8	57.0	14.4	33.8%
Education	20.1	20.6	21.6	22.2	22.6	22.3	23.0	23.6	23.3	5.4	30.2%
Local	46.7	48.2	49.7	51.0	53.4	54.4	56.1	58.0	60.1	20.4	51.4%
Education	27.2	28.4	29.2	30.4	31.8	32.4	33.6	34.7	36.2	12.8	54.7%

Note: Subtotals do not add to totals due to rounding. Mining is included in nonmanufacturing but not listed individually. 1992 data are preliminary.
Source: Ohio Bureau of Employment Services, Bureau of Labor Statistics, RS-790.

Table E-2: Comparative Unemployment Rates, 1975 to 1992

Year	City of Columbus	Franklin County	Columbus MSA	Ohio	USA
1975	N/A	7.2%	7.4%	9.1%	8.5%
1976	N/A	6.8%	7.0%	7.8%	7.7%
1977	N/A	5.7%	5.9%	6.5%	7.1%
1978	N/A	4.7%	4.7%	5.4%	6.1%
1979	N/A	4.9%	4.8%	5.9%	5.8%
1980	N/A	5.5%	5.7%	8.4%	7.1%
1981	N/A	7.6%	7.7%	9.6%	7.6%
1982	N/A	8.8%	9.0%	12.5%	9.7%
1983	10.2%	8.9%	9.3%	12.2%	9.6%
1984	8.5%	7.4%	7.8%	9.4%	7.5%
1985	7.0%	6.1%	6.7%	8.9%	7.2%
1986	6.3%	5.5%	6.1%	8.1%	7.0%
1987	5.6%	4.9%	5.4%	7.0%	6.2%
1988	5.1%	4.4%	4.9%	6.0%	5.5%
1989	5.0%	4.3%	4.8%	5.5%	5.3%
1990	4.5%	3.9%	4.4%	5.7%	5.5%
1991	4.8%	4.2%	4.6%	6.4%	6.7%
1992	5.8%	5.0%	5.4%	7.2%	7.4%
Average					
1980-92	**N/A**	**5.9%**	**6.3%**	**8.2%**	**7.1%**
1983-92	**6.3%**	**5.5%**	**5.9%**	**7.7%**	**6.8%**

Source: U.S. Bureau of Labor Statistics and Ohio Bureau of Employment Services.

Table E-3: National, State and Local Growth Comparisons Nonagricultural Wage and Salary Employment

Total Employment	**1973**	**1979**	**1990**	**1992**
USA	76,790,000	89,823,000	109,782,000	108,436,000
Columbus MSA	**493,900**	**558,400**	**721,700**	**727,500**
Ohio	4,112,900	4,484,800	4,882,300	4,842,400
Ohio less Columbus MSA	3,619,000	3,926,400	4,160,600	4,114,900
Employment Change	**1973-1992**	**1973-1979**	**1979-1990**	**1990-1992**
USA	31,520,000	13,033,000	19,959,000	(1,346,000)
Columbus MSA	**233,600**	**64,600**	**163,300**	**5,800**
Ohio	729,500	371,900	397,500	(39,900)
Ohio less Columbus MSA	495,900	307,300	234,200	(45,700)
Percent Employment Change	**1973-1992**	**1973-1979**	**1979-1990**	**1990-1992**
USA	41.2%	17.0%	22.2%	-1.2%
Columbus MSA	**47.3%**	**13.1%**	**29.2%**	**0.8%**
Ohio	17.7%	9.0%	8.9%	-0.8%
Ohio less Columbus MSA	13.7%	8.5%	6.0%	-1.1%

Source: Ohio Bureau of Employment Services and Council of Economic Advisors (Economic Indicators). 1992 data are preliminary.

Table E-4: **Proportion of Employment in the Goods and Services Sectors, Columbus MSA, 1973 to 1992 (790 Series)**

Year	Goods-Producing	Service-Producing	Total
	Employment in thousands:		
1973	147.0	346.9	493.9
1974	143.9	357.9	501.8
1975	127.2	361.0	488.2
1976	128.0	372.0	500.0
1977	135.0	382.6	517.6
1978	140.0	403.2	543.2
1979	142.0	416.4	558.4
1980	135.1	425.1	560.2
1981	129.7	427.2	556.9
1982	118.4	425.6	544.0
1983	116.7	431.8	548.5
1984	125.0	451.4	576.4
1985	129.0	474.6	603.6
1986	130.7	500.0	630.7
1987	131.8	526.2	658.0
1988	132.6	547.8	680.5
1989	135.5	569.3	704.7
1990	134.9	586.8	721.7
1991	130.4	588.7	719.1
1992	129.3	598.2	727.5
	Percent share of employment:		
1973	29.8%	70.2%	100%
1974	28.7%	71.3%	100%
1975	26.1%	73.9%	100%
1976	25.6%	74.4%	100%
1977	26.1%	73.9%	100%
1978	25.8%	74.2%	100%
1979	25.4%	74.6%	100%
1980	24.1%	75.9%	100%
1981	23.3%	76.7%	100%
1982	21.8%	78.2%	100%
1983	21.3%	78.7%	100%
1984	21.7%	78.3%	100%
1985	21.4%	78.6%	100%
1986	20.7%	79.3%	100%
1987	20.0%	80.0%	100%
1988	19.5%	80.5%	100%
1989	19.2%	80.8%	100%
1990	18.7%	81.3%	100%
1991	18.1%	81.9%	100%
1992	17.8%	82.2%	100%

Source: Ohio Bureau of Employment Services.

Table E-5: **Economic Performance by Industry Division**
Columbus MSA (790 Series)

	Employment Growth (in thousands)			
	1973-92	1973-79	1979-90	1990-92
Manufacturing	-19.7	-2.9	-13.0	-3.8
Construction	2.5	-2.1	6.2	-1.6
Trans/Util/Comm	6.0	1.9	3.7	0.4
Wholesale Trade	13.3	6.2	7.4	0.2
Retail Trade	62.5	15.6	46.1	0.8
FIRE	28.9	7.6	22.6	-1.3
General Services	105.2	24.8	73.2	7.2
Government	35.0	13.4	17.3	4.3
Total	**233.6**	**64.5**	**163.3**	**5.8**

	Percent Growth			
	1973-92	1973-79	1979-90	1990-92
Manufacturing	-16.3%	-2.4%	-11.0%	-3.6%
Construction	10.0%	-8.4%	27.0%	-5.5%
Trans/Util/Comm	23.6%	7.5%	13.6%	1.3%
Wholesale Trade	60.8%	27.3%	25.6%	0.6%
Retail Trade	72.9%	18.2%	45.5%	0.5%
FIRE	94.1%	24.8%	59.0%	-2.1%
General Services	125.4%	29.6%	67.3%	4.0%
Government	35.5%	13.6%	15.5%	3.3%
Total	**47.3%**	**13.1%**	**29.2%**	**0.8%**

	Percent Share of Total Employment			
	1973	1979	1990	1992
Manufacturing	24.4%	21.1%	14.5%	13.9%
Construction	5.1%	4.1%	4.0%	3.8%
Trans/Util/Comm	5.1%	4.9%	4.3%	4.3%
Wholesale Trade	4.6%	5.2%	5.0%	5.0%
Retail Trade	17.4%	18.1%	20.4%	20.4%
FIRE	6.2%	6.9%	8.4%	8.2%
General Services	17.0%	19.5%	25.2%	26.0%
Government	19.9%	20.0%	17.9%	18.4%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: Ohio Bureau of Employment Services.

Table E-6: **Net Number of New Establishments between 1980 and 1990**

	By County:				
	Franklin Co.	Cuyahoga Co.	Hamilton Co.	Montgomery Co.	Ohio
Manufacturing	171	(205)	120	140	2,250
Trans/Util/Comm	271	210	209	95	2,040
Wholesale	388	215	207	134	2,300
Retail	1,571	797	864	495	8,565
FIRE	822	93	298	44	2,354
General Services	3,214	3,184	2,690	1,286	25,683
Auxiliary & Administrative	168	22	42	58	532
Total Growth	**7,156**	**4,914**	**5,119**	**2,452**	**50,108**

	By MSA:				
	Columbus MSA	Cleveland MSA	Cincinnati MSA	Dayton-Springfield MSA	Ohio
Manufacturing	267	140	371	242	2,250
Trans/Util/Comm	402	318	372	122	2,040
Wholesale	445	496	458	205	2,300
Retail	1,934	1,328	1,604	1,121	8,565
FIRE	917	246	519	87	2,354
General Services	4,104	4,527	4,191	2,062	25,683
Auxiliary & Administrative	173	62	59	73	532
Total Growth	**9,193**	**8,424**	**9,037**	**3,936**	**50,108**

Source: *County Business Patterns.*

Table E-7: **Change in the Occupational Profile of the Columbus MSA Work Force,1980 to 1990**

Occupational Category	Columbus MSA 1980 Employment	Columbus MSA 1990 Employment	Columbus MSA 1980-1990 Growth	Columbus MSA 1980-1990 Percent Growth	Columbus MSA 1980 Share of Total Employment	Columbus MSA 1990 Share of Total Employment	USA 1990 Share of Total Employment	USA 1980 Share of Total Employment
GROUP 1								
Executive, Mgr, Administrative	64,837	95,508	30,671	47.3%	11.6%	14.0%	12.6%	11.3%
Professional specialty	73,142	100,441	27,299	37.3%	13.1%	14.7%	14.4%	13.2%
Technicians & related support	19,193	28,296	9,103	47.4%	3.4%	4.2%	3.8%	3.3%
Subtotal	**157,172**	**224,245**	**67,073**	**42.7%**	**28.1%**	**32.9%**	**30.8%**	**27.8%**
GROUP 2								
Sales occupations	56,783	83,420	26,637	46.9%	10.2%	12.2%	12.1%	10.6%
Administrative support	112,764	131,851	19,087	16.9%	20.2%	19.4%	16.7%	18.9%
Service occupations	71,343	83,524	12,181	17.1%	12.8%	12.3%	13.6%	13.0%
Subtotal	**240,890**	**298,795**	**57,905**	**24.0%**	**43.1%**	**43.9%**	**42.3%**	**42.5%**
GROUP 3								
Precision production	65,055	63,720	(1,335)	-2.1%	11.6%	9.4%	11.6%	12.6%
Machine operators, assemblers	46,611	39,888	(6,723)	-14.4%	8.3%	5.9%	7.0%	8.7%
Transportation, material moving	25,208	26,830	1,622	6.4%	4.5%	3.9%	4.2%	4.2%
Handlers, helpers, laborers	24,408	27,546	3,138	12.9%	4.4%	4.0%	4.0%	4.3%
Subtotal	**161,282**	**157,984**	**(3,298)**	**-2.0%**	**28.8%**	**23.2%**	**26.8%**	**29.7%**
Total	**559,344**	**681,024**	**121,680**	**21.8%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: U.S. Bureau of the Census.

Table E-8: **Covered Payroll and Employment, 1979 to 1991**
Columbus MSA (203 Series)

Payroll (millions)	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	Percent Growth
Goods-Producing	**$2,365**	**$2,490**	**$2,623**	**$2,599**	**$2,726**	**$3,054**	**$3,284**	**$3,421**	**$3,522**	**$3,721**	**$3,874**	**$4,080**	**$4,096**	**73.2%**
Agr/Mining/Other	$50	$61	$69	$77	$81	$90	$91	$96	$104	$108	$113	$124	$123	147.6%
Construction	$356	$376	$353	$328	$335	$390	$461	$519	$609	$683	$691	$717	$682	91.7%
Manufacturing	$1,960	$2,053	$2,201	$2,194	$2,310	$2,574	$2,732	$2,806	$2,810	$2,930	$3,070	$3,239	$3,291	67.9%
Service-Producing	**$4,361**	**$4,824**	**$5,290**	**$5,697**	**$6,150**	**$6,771**	**$7,456**	**$8,114**	**$8,967**	**$9,908**	**$10,597**	**$11,378**	**$11,923**	**173.4%**
Trans/Util/Comm	$437	$474	$522	$530	$545	$595	$602	$639	$696	$767	$799	$858	$881	101.8%
Wholesale/Retail	$1,299	$1,400	$1,491	$1,566	$1,680	$1,863	$2,050	$2,182	$2,413	$2,624	$2,804	$2,933	$3,062	135.8%
FIRE	$472	$549	$625	$707	$801	$878	$993	$1,163	$1,269	$1,383	$1,446	$1,541	$1,637	247.0%
General Services	$1,061	$1,203	$1,358	$1,473	$1,619	$1,828	$2,101	$2,292	$2,607	$2,854	$3,138	$3,466	$3,636	242.6%
State/Local Gov't.	$1,093	$1,199	$1,294	$1,421	$1,504	$1,607	$1,710	$1,838	$1,983	$2,280	$2,410	$2,580	$2,707	147.6%
MSA Total	**$6,727**	**$7,315**	**$7,913**	**$8,296**	**$8,875**	**$9,825**	**$10,740**	**$11,534**	**$12,489**	**$13,629**	**$14,471**	**$15,458**	**$16,019**	**138.1%**
Franklin County	$5,425	$5,912	$6,379	$6,721	$7,236	$8,033	$8,814	$9,489	$10,329	$11,216	$11,867	$12,666	$13,114	141.7%
Percent of MSA	80.6%	80.8%	80.6%	81.0%	81.5%	81.8%	82.1%	82.3%	82.7%	82.3%	82.0%	81.9%	81.9%	
Remainder of MSA	$1,302	$1,402	$1,534	$1,575	$1,639	$1,792	$1,926	$2,045	$2,160	$2,413	$2,604	$2,792	$2,905	123.2%
Percent of MSA	19.4%	19.2%	19.4%	19.0%	18.5%	18.2%	17.9%	17.7%	17.3%	17.7%	18.0%	18.1%	18.1%	

Employment	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	Percent Change
Goods-Producing	**144,558**	**138,682**	**132,921**	**121,933**	**120,779**	**129,719**	**133,457**	**135,557**	**137,018**	**138,300**	**140,109**	**139,814**	**134,888**	**-6.7%**
Ag/Mining/Other	4,137	4,446	4,626	4,944	5,132	5,764	5,792	5,968	6,586	6,687	6,685	7,120	6,661	61.0%
Construction	22,903	21,825	18,870	16,183	16,830	19,259	21,808	23,901	26,769	28,864	28,446	28,029	25,622	11.9%
Manufacturing	117,518	112,411	109,425	100,806	98,817	104,696	105,857	105,688	103,663	102,749	104,978	104,665	102,605	-12.7%
Service-Producing	**374,046**	**383,128**	**385,696**	**383,913**	**392,820**	**412,983**	**438,058**	**457,970**	**483,367**	**506,201**	**528,042**	**541,716**	**542,143**	**44.9%**
Trans/Util/Comm	24,012	23,813	23,634	22,960	22,790	24,570	24,318	25,078	26,667	28,673	29,630	29,492	29,999	24.9%
Wholesale/Retail	129,979	130,843	128,950	128,877	131,847	140,958	151,959	156,917	166,807	173,420	180,938	182,301	180,532	38.9%
FIRE	36,695	38,942	40,330	41,871	43,895	45,749	48,021	52,195	54,742	56,581	57,583	58,609	58,738	60.1%
General Services	97,859	101,626	105,280	105,595	109,574	117,622	128,276	136,194	144,858	151,703	160,859	169,889	169,705	73.4%
State/Local Gov't.	85,501	87,904	87,502	84,610	84,714	84,084	85,484	87,586	90,293	95,824	99,032	101,425	103,169	20.7%
MSA Total	**518,604**	**521,810**	**518,617**	**505,846**	**513,599**	**542,702**	**571,515**	**593,527**	**620,385**	**644,501**	**668,151**	**681,530**	**677,031**	**30.5%**
Franklin County	410,960	414,781	412,452	403,908	412,053	437,561	463,512	482,538	505,752	523,469	541,792	552,564	545,874	32.8%
Percent of MSA	79.24%	79.49%	79.53%	79.85%	80.23%	80.63%	81.10%	81.30%	81.52%	81.22%	81.09%	81.08%	80.63%	
Remainder of MSA	107,644	107,029	106,165	101,938	101,546	105,141	108,003	110,989	114,633	121,032	126,359	128,966	131,157	21.8%
Percent of MSA	20.76%	20.51%	20.47%	20.15%	19.77%	19.37%	18.90%	18.70%	18.48%	18.78%	18.91%	18.92%	19.37%	

Source: Ohio Bureau of Employment Services.

Table E-9: Average Wage, Coumbus MSA, 1979 to 1991 (203 Series)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1979-91 Percent Growth
Goods-Producing	**$16,362**	**$17,957**	**$19,730**	**$21,311**	**$22,569**	**$23,540**	**$24,609**	**$25,234**	**$25,706**	**$26,906**	**$27,647**	**$29,181**	**$30,369**	**85.6%**
Ag/Mining/Other	$12,007	$13,750	$14,909	$15,582	$15,789	$15,633	$15,793	$16,090	$15,757	$16,199	$16,845	$17,412	$18,527	54.3%
Construction	$15,532	$17,216	$18,710	$20,265	$19,895	$20,245	$21,141	$21,706	$22,742	$23,671	$24,277	$25,584	$26,601	71.3%
Manufacturing	$16,677	$18,267	$20,110	$21,760	$23,376	$24,582	$25,806	$26,548	$27,103	$28,511	$29,248	$30,945	$32,078	92.4%
Service-Producing	**$11,660**	**$12,592**	**$13,716**	**$14,840**	**$15,655**	**$16,396**	**$17,020**	**$17,717**	**$18,552**	**$19,573**	**$20,069**	**$21,004**	**$21,992**	**88.6%**
Trans/Util/Comm	$18,183	$19,918	$22,075	$23,068	$23,906	$24,219	$24,766	$25,471	$26,087	$26,752	$26,973	$29,091	$29,377	61.6%
Wholesale/Retail	$9,992	$10,697	$11,564	$12,149	$12,742	$13,218	$13,488	$13,906	$14,464	$15,131	$15,496	$16,087	$16,961	69.7%
FIRE	$12,855	$14,103	$15,497	$16,885	$18,249	$19,200	$20,682	$22,289	$23,173	$24,435	$25,110	$26,297	$27,861	116.7%
General Services	$10,844	$11,833	$12,900	$13,954	$14,779	$15,541	$16,378	$16,828	$17,998	$18,812	$19,507	$20,400	$21,424	97.6%
State/Local Gov't.	$12,785	$13,634	$14,790	$16,801	$17,759	$19,107	$20,002	$20,980	$21,964	$23,797	$24,338	$25,442	$26,242	105.3%
MSA	**$12,971**	**$14,018**	**$15,257**	**$16,400**	**$17,281**	**$18,103**	**$18,792**	**$19,433**	**$20,132**	**$21,147**	**$21,658**	**$22,682**	**$23,661**	**82.4%**
Franklin County	$13,201	$14,254	$15,466	$16,640	$17,562	$18,358	$19,017	$19,666	$20,424	$21,426	$21,903	$22,922	$24,024	82.0%
Remainder of MSA	$12,092	$13,103	$14,446	$15,449	$16,141	$17,043	$17,829	$18,424	$18,843	$19,938	$20,607	$21,653	$22,152	83.2%

Source: Ohio Bureau of Employment Services.

Table E-10: Total and Average Wage Comparisons, 1979 to 1991

Comparison of Total Wages (billions)	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1979-91 Percent Change
Franklin County	$5.4	$5.9	$6.4	$6.7	$7.2	$8.0	$8.8	$9.5	$10.3	$11.2	$11.9	$12.7	$13.1	141.7%
Columbus MSA	**$6.7**	**$7.3**	**$7.9**	**$8.3**	**$8.9**	**$9.8**	**$10.7**	**$11.5**	**$12.5**	**$13.6**	**$14.5**	**$15.5**	**$16.0**	**138.1%**
Ohio	$58.6	$61.4	$65.7	$66.0	$68.6	$75.4	$80.3	$84.2	$89.3	$96.2	$100.9	$106.1	$108.0	84.3%
USA	$1,168.5	$1,224.0	$1,347.8	$1,412.9	$1,493.3	$1,643.6	$1,769.1	$1,882.1	$2,024.5	$2,193.1	$2,324.1	$2,467.0	$2,524.9	116.1%
Col. MSA/Ohio	11.5%	11.9%	12.0%	12.6%	12.9%	13.0%	13.4%	13.7%	14.0%	14.2%	14.3%	14.6%	14.8%	
Col. MSA/USA	0.58%	0.60%	0.59%	0.59%	0.59%	0.60%	0.61%	0.61%	0.62%	0.62%	0.62%	0.63%	0.63%	

Comparison of Average Wages	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1979-91 Percent Change
Franklin County	$13,201	$14,254	$15,466	$16,640	$17,562	$18,358	$19,017	$19,666	$20,424	$21,426	$21,903	$22,922	$24,024	82.0%
Columbus MSA	**$12,971**	**$14,018**	**$15,257**	**$16,400**	**$17,281**	**$18,103**	**$18,792**	**$19,433**	**$20,132**	**$21,147**	**$21,658**	**$22,682**	**$23,661**	**82.4%**
Ohio	$13,860	$14,903	$16,177	$17,014	$17,768	$18,645	$19,296	$19,775	$20,438	$21,392	$21,872	$22,719	$23,455	69.2%
USA	$13,155	$14,204	$15,486	$16,533	$17,328	$18,133	$18,964	$19,773	$20,667	$21,685	$22,378	$23,398	$24,334	85.0%
Col. MSA/Ohio	93.6%	94.1%	94.3%	96.4%	97.3%	97.1%	97.4%	98.3%	98.5%	98.9%	99.0%	99.8%	100.9%	
Col. MSA/USA	98.6%	98.7%	98.5%	99.2%	99.7%	99.8%	99.1%	98.3%	97.4%	97.5%	96.8%	96.9%	97.2%	

Source: Ohio Bureau of Employment Services (203 Series) and U.S. Bureau of Labor Statistics, Employment and Wages.

Table E-11: Total and Average Wage Comparisons, Adjusted for Inflation, 1979 to 1991

Comparison of Total Wages (billions)	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1979-91 Percent Change
Franklin County	$8.2	$8.2	$8.1	$8.0	$8.3	$8.8	$9.3	$9.8	$10.3	$10.8	$10.9	$11.2	$11.1	35.6%
Columbus MSA	**$10.2**	**$10.2**	**$10.0**	**$9.9**	**$10.2**	**$10.8**	**$11.4**	**$11.9**	**$12.5**	**$13.1**	**$13.3**	**$13.7**	**$13.6**	**33.6%**
Ohio	$88.6	$85.6	$83.3	$78.8	$78.7	$82.9	$85.0	$86.9	$89.3	$92.6	$93.0	$93.8	$91.7	3.4%
USA	$1,767.8	$1,707.1	$1,708.2	$1,686.0	$1,712.5	$1,806.2	$1,874.0	$1,942.3	$2,024.5	$2,110.8	$2,142.0	$2,179.3	$2,143.4	21.2%

Comparison of Average Wages	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1979-91 Percent Change
Franklin County	$19,971	$19,880	$19,603	$19,857	$20,140	$20,174	$20,145	$20,295	$20,424	$20,622	$20,187	$20,249	$20,394	2.1%
Columbus MSA	**$19,623**	**$19,550**	**$19,338**	**$19,570**	**$19,817**	**$19,894**	**$19,907**	**$20,055**	**$20,132**	**$20,353**	**$19,961**	**$20,037**	**$20,086**	**2.4%**
Ohio	$20,969	$20,785	$20,503	$20,304	$20,376	$20,490	$20,440	$20,408	$20,438	$20,589	$20,159	$20,069	$19,911	-5.0%
USA	$19,902	$19,810	$19,627	$19,729	$19,872	$19,926	$20,089	$20,406	$20,667	$20,871	$20,625	$20,670	$20,657	3.8%
Price Deflator (1987=100)	66.1	71.7	78.9	83.8	87.2	91.0	94.4	96.9	100.0	103.9	108.5	113.2	117.8	

Source: Ohio Bureau of Employment Services (203 Series), U.S. Bureau of Labor Statistics, Employment and Wages, and Council of Economic Advisors, Economic Indicators.

Table E-12: Labor Force Growth and Participation Rates, Franklin County

Year	Working-Age Civilian Population	Civilian Labor Force	Total Employed	Total Labor Force Participation Rate	Female Labor Force Participation Rate	Male Labor Force Participation Rate
1970	569,971	348,004	336,132	0.61	0.46	0.78
1980	661,345	433,010	408,874	0.65	0.55	0.77
1990	746,813	523,163	496,524	0.70	0.63	0.78
Growth						
1970-1980	91,374	85,006	72,742			
1980-1990	85,468	90,153	87,650			
Percent Growth						
1970-1980	16.0%	24.4%	21.6%			
1980-1990	12.9%	20.8%	21.4%			

Source: U. S. Bureau of the Census.

Table E-13: **Comparison of Historic and Projected Growth of Columbus MSA Employment**

	Employment 1973	Employment 1979	Employment 1990	Projected Employment 2000	Projected Industry Share of Employment 2000
Manufacturing	120,700	117,800	104,800	103,700	12.8%
Construction	25,100	23,000	29,200	30,900	3.8%
Trans/Util/Comm	25,400	27,300	31,000	36,100	4.4%
Wholesale Trade	22,700	28,900	36,300	38,700	4.8%
Retail Trade	85,700	101,300	147,400	169,100	20.8%
Finance, Insurance and Real Estate	30,700	38,300	60,900	68,800	8.5%
General Services	83,900	108,700	181,900	226,700	27.9%
Government	98,500	111,900	129,200	138,100	17.0%
Goods-Production	**147,000**	**142,000**	**134,900**	**135,500**	**16.7%**
Service-Production	**346,900**	**416,400**	**586,800**	**677,500**	**83.3%**
Total	**493,900**	**558,400**	**721,700**	**813,000**	**100.0%**

	Annual Net Growth in Employment 1973-1979	Annual Net Growth in Employment 1979-1990	Annual Projected Net Growth in Employment 1991-2000	Annual Growth Rate 1973-1979	Annual Growth Rate 1979-1990	Annual Projected Growth Rate 1991-2000
Manufacturing	(483)	(1,182)	100	-0.4%	-1.0%	0.1%
Construction	(350)	564	511	-1.4%	2.5%	1.9%
Trans/Util/Comm	317	336	567	1.2%	1.2%	1.8%
Wholesale Trade	1,033	673	300	4.6%	2.3%	0.8%
Retail Trade	2,600	4,191	2,700	3.0%	4.1%	1.9%
Finance, Insurance and Real Estate	1,267	2,055	844	4.1%	5.4%	1.4%
General Services	4,133	6,655	4,744	4.9%	6.1%	2.6%
Government	2,233	1,573	722	2.3%	1.4%	0.5%
Goods-Production	**(833)**	**(645)**	**633**	**-0.6%**	**-0.5%**	**0.5%**
Service-Production	**11,583**	**15,491**	**9,878**	**3.3%**	**3.7%**	**1.7%**
Total	**10,750**	**14,845**	**10,511**	**2.2%**	**2.7%**	**1.5%**

Note: Columbus MSA Projections 1991-2000 (OBES) and OBES employment data, Series 790.
Subtotals do not add to totals due to rounding. Mining is included in totals but not listed individually.

Appendix C: Geographic Patterns of Growth

Table G-1: **Columbus Central City, 1970 to 1990 (Based on 1950 Boundary)**

	1970		1980		1990	
Population	349,299		287,723		267,950	
Ten year change			(61,576)		(19,773)	
Percentage change			-17.6%		-6.9%	
Race						
White	262,397	75.1%	204,092	70.9%	180,208	67.3%
Black	85,080	24.4%	79,345	27.6%	80,512	30.0%
Other	1,822	0.5%	4,286	1.5%	7,230	2.7%
Housing Units	123,111		122,095		116,832	
Ten year change			(1,016)		(5,263)	
Percentage change			-0.8%		-4.3%	
Occupied	116,309		110,669		105,997	
Owner Occupied	50,849		48,832		44,598	
Ownership Rate	43.7%		44.1%		42.1%	
Vacant	6,802		11,426		10,835	
Vacancy Rate	5.5%		9.4%		9.3%	
Median Value	$14,680		$33,010		$58,618*	
Contract Rent	$82		$146		$290*	
Persons in poverty	60,727		64,434		73,353	
Poverty Rate	18.7%		24.1%		29.1%	
Civilian Labor Force	145,733		128,670		129,882	
Unemployed	6,463		10,673		11,581	
Unemployment Rate	4.4%		8.3%		8.9%	
Education (Percentage of those 25 and over)						
High School Graduates	85,928	48.2%	93,343	59.7%	107,582	69.8%
College Graduates	16,700	9.4%	24,254	15.5%	30,965	20.1%

* *Average of block group medians.*

Source: Prepared by the Planning Division Research Section from U.S. Census Bureau Data.

Table G-2: **Columbus "Newer City", 1970 to 1990 (Outside 1950 Boundary)**

	1970		1980		1990	
Population	190,378		277,298		364,960	
Ten year change			86,920		87,662	
Percentage change			45.7%		31.6%	
Race						
White	174,858	91.8%	226,586	81.7%	290,817	79.7%
Black	14,547	7.6%	45,535	16.4%	62,236	17.1%
Other	973	0.5%	5,027	1.8%	11,907	3.3%
Housing Units	59,257		114,474		161,252	
Ten year change			55,217		46,778	
Percentage change			93.2%		40.9%	
Occupied	56,747		106,466		150,999	
Owner Occupied	37,407		57,133		75,156	
Ownership Rate	65.9%		53.7%		49.8%	
Vacant	2,510		8,008		10,253	
Vacancy Rate	4.2%		7.0%		6.4%	
Median Value	NA		NA		NA	
Contract Rent	NA		NA		NA	
Persons in poverty	10,652		24,780		32,141	
Poverty Rate	5.6%		9.1%		9.1%	
Civilian Labor Force	81,597		151,057		215,663	
Unemployed	2,184		7,221		8,876	
Unemployment Rate	2.7%		4.8%		4.1%	
Education (Percentage of those 25 and over)						
High School Graduates	66,055	69.5%	121,278	78.2%	195,291	84.6%
College Graduates	14,474	15.2%	33,685	21.7%	63,653	27.6%

Source: Prepared by the Planning Division Research Section from U.S. Census Bureau Data.

Table G-3: **City of Columbus, 1970 to 1990**

	1970		1980		1990	
Population	539,677		565,021*		632,910	
Ten year change			25,344		67,889	
Percentage change			4.7%		12.0%	
Race						
White	437,255	81.0%	430,678	76.2%	471,025	74.4%
Black	99,627	18.5%	124,880	22.1%	142,748	22.6%
Other	2,795	0.5%	9,313	1.6%	19,137	3.0%
Housing Units	182,368		236,569		278,084	
Ten year change			54,201		41,515	
Percentage change			29.7%		17.5%	
Occupied	173,056		217,135		256,996	
Owner Occupied	88,265		105,965		119,754	
Ownership Rate	51.0%		48.8%		46.6%	
Vacant	9,312		19,434		21,088	
Vacancy Rate	5.1%		8.2%		7.6%	
Median Value	$17,100		$41,400		$65,400	
Contract Rent	$87		$171		$422	
Persons in poverty	71,379		89,214		105,494	
Poverty Rate	13.9%		16.5%		17.2%	
Civilian Labor Force	227,330		279,727		345,545	
Unemployed	8,647		17,894		20,457	
Unemployment Rate	3.8%		6.4%		5.9%	
Education (Percentage of those 25 and over)						
High School Graduates	151,983	55.6%	214,621	68.9%	302,873	78.7%
College Graduates	31,174	11.4%	57,939	18.6%	94,618	24.6%

** Indicates population adjustment from 564,871 by Census Bureau.*

Source: Prepared by the Planning Division Research Section from U.S. Census Bureau Data.

Table G-5: **Franklin County, 1970 to 1990**

	1970		1980		1990	
Population	833,249		869,132		961,437	
Ten year change			35,883		92,305	
Percentage change			4.3%		10.6%	
Race						
White	725,171	87.0%	725,721	83.5%	783,714	81.5%
Black	104,387	12.5%	131,016	15.1%	152,840	15.9%
Other	3,691	0.4%	12,395	1.4%	24,883	2.6%
Housing Units	271,172		347,024		405,418	
Ten year change			75,852		58,394	
Percentage change			28.0%		16.8%	
Occupied	259,321		322,817		378,723	
Owner Occupied	150,663		184,001		207,833	
Ownership Rate	58.1%		57.0%		54.9%	
Vacant	11,851		24,207		26,695	
Vacancy Rate	4.4%		7.0%		6.6%	
Median Value	$18,700		$47,300		$73,300	
Contract Rent	$92		$175		$430	
Persons in poverty	85,592		103,750		121,475	
Poverty Rate	10.7%		12.3%		13.0%	
Civilian Labor Force	348,004		433,010		523,163	
Unemployed	11,872		24,136		26,639	
Unemployment Rate	3.4%		5.6%		5.1%	
Education (Percentage of those 25 and over)						
High School Graduates	259,835	61.1%	357,837	73.0%	483,808	81.0%
College Graduates	61,749	14.5%	103,940	21.2%	159,061	26.6%

Source: Prepared by the Planning Division Research Section from U.S. Census Bureau Data.

Table G-6: Housing Units Authorized by Building Permit Franklin County, 1980 to 1992

Year	Franklin County			Columbus			Remainder of County		
	Single	Multi	Total	Single	Multi	Total	Single	Multi	Total
1980	2,319	2,516	4,835	1,377	2,023	3,400	942	493	1,435
1981	1,489	1,602	3,091	961	1,355	2,316	528	247	775
1982	1,548	1,245	2,793	1,072	1,129	2,201	476	116	592
1983	3,081	2,977	6,058	2,095	2,690	4,785	986	287	1,273
1984	2,922	4,263	7,185	1,852	3,572	5,424	1,070	691	1,761
1985	3,065	4,632	7,697	1,794	3,887	5,681	1,271	745	2,016
1980-1985 Total Units Authorized	**14,424**	**17,235**	**31,659**	**9,151**	**14,656**	**23,807**	**5,273**	**2,579**	**7,852**
1986	4,575	7,024	11,599	2,493	5,816	8,309	2,082	1,208	3,290
1987	4,393	4,869	9,262	2,116	4,113	6,229	2,277	756	3,033
1988	3,954	4,996	8,950	2,338	4,322	6,660	1,616	674	2,290
1989	4,068	3,722	7,790	2,270	2,997	5,267	1,798	725	2,523
1990	3,877	3,400	7,277	2,211	2,808	5,019	1,666	592	2,258
1991	3,912	1,980	5,892	2,030	1,594	3,624	1,882	386	2,268
1992	4,146	2,514	6,660	1,761	1,756	3,517	2,385	758	3,143
1986-1992 Total Units Authorized	**28,925**	**28,505**	**57,430**	**15,219**	**23,406**	**38,625**	**13,706**	**5,099**	**18,805**
1980-1992 Total Units Authorized	**43,349**	**45,740**	**89,089**	**24,370**	**38,062**	**62,432**	**18,979**	**7,678**	**26,657**
Average Annual Units Authorized	**3,335**	**3,518**	**6,853**	**1,875**	**2,928**	**4,802**	**1,460**	**591**	**2,051**

Source: U.S. Bureau of the Census Construction Statistics; Development Regulation Division.

Table G-7: Locational Analysis of Housing Units Authorized by Building Permit in Franklin County, 1980 to 1992

year	Columbus			Remainder of County		
	Single	Multi	Total	Single	Multi	Total
1980	59.4%	80.4%	70.3%	40.6%	19.6%	29.7%
1981	64.5%	84.6%	74.9%	35.5%	15.4%	25.1%
1982	69.3%	90.7%	78.8%	30.7%	9.3%	21.2%
1983	68.0%	90.4%	79.0%	32.0%	9.6%	21.0%
1984	63.4%	83.8%	75.5%	36.6%	16.2%	24.5%
1985	58.5%	83.9%	73.8%	41.5%	16.1%	26.2%
1980-1985 Total	**63.4%**	**85.0%**	**75.2%**	**36.6%**	**15.0%**	**24.8%**
1986	54.5%	82.8%	71.6%	45.5%	17.2%	28.4%
1987	48.2%	84.5%	67.3%	51.8%	15.5%	32.7%
1988	59.1%	86.5%	74.4%	40.9%	13.5%	25.6%
1989	55.8%	80.5%	67.6%	44.2%	19.5%	32.4%
1990	57.0%	82.6%	69.0%	43.0%	17.4%	31.0%
1991	51.9%	80.5%	61.5%	48.1%	19.5%	38.5%
1992	42.5%	69.8%	52.8%	57.5%	30.2%	47.2%
1986-1992 Total	**52.6%**	**82.1%**	**67.3%**	**47.4%**	**17.9%**	**32.7%**
1980-1992 Total	**56.2%**	**83.2%**	**70.1%**	**43.8%**	**16.8%**	**29.9%**

Source: U.S. Bureau of the Census Construction Statistics; Development Regulation Division.

Table G-8: Franklin County Residential Plats by Jurisdiction, 1980 to 1991

Jurisdiction	Number of Plats	Number of Acres	Number of Lots	Percent of Total Plats	Percent of Total Acres	Percent of Total Lots
Columbus	**396**	**4,889.65**	**18,296**	**55.38%**	**49.36%**	**62.85%**
Bexley	4	16.96	27	0.56%	0.17%	0.09%
Dublin	56	1,017.11	2,243	7.83%	10.27%	7.70%
Gahanna	47	951.05	2,216	6.57%	9.60%	7.61%
Grandview Heights	2	6.05	14	0.28%	0.06%	0.05%
Grove City	32	340.70	1,097	4.48%	3.44%	3.77%
Harrisburg	1	1.0985	3	0.14%	0.01%	0.01%
Hilliard	28	629.70	1,522	3.92%	6.36%	5.23%
New Albany	4	284.255	255	0.56%	2.87%	0.88%
Obetz	1	1.23	6	0.14%	0.01%	0.02%
Reynoldsburg	28	326.10	1,014	3.92%	3.29%	3.48%
Upper Arlington	19	91.07	237	2.66%	0.92%	0.81%
Westerville	46	461.33	1,264	6.43%	4.66%	4.34%
Whitehall	1	2.55	4	0.14%	0.03%	0.01%
Worthington	16	122.36	282	2.24%	1.24%	0.97%
All Townships	34	765.65	631	4.76%	7.73%	2.17%
Total	**715**	**9,906.88**	**29,111**	**100.00%**	**100.00%**	**100.00%**

Source: City of Columbus, Development Department.

Table G-9: Annexation Patterns in Franklin County, 1980 to 1991

	1980-89 Cases	1980-89 Acres	Percent of 1980-89 Acreage	1990-91 Cases	1990-91 Acres	Percent of 1990-91 Acreage	1980-91 Cases	1980-91 Acres	Percent of 1980-91 Acreage	1980-91 Sq. Miles
Columbus	**282**	**7,855.4**	**44.4%**	**65**	**2,211.8**	**48.5%**	**347**	**10,067.3**	**45.2%**	**15.7**
Dublin	22	1,473.0	8.3%	3	1,297.1	25.9%	25	2,770.2	12.4%	4.3
New Albany	2	2,690.0	15.2%	0	0.0	0.0%	2	2,690.0	12.1%	4.2
Hilliard	17	2,167.3	12.3%	8	337.1	7.4%	25	2,504.4	11.3%	3.9
Gahanna	17	810.3	4.6%	4	261.0	5.0%	21	1,071.3	4.8%	1.7
Westerville	31	901.0	5.1%	6	25.3	0.5%	37	926.3	4.2%	1.4
Groveport	5	718.1	4.1%	1	2.0	0.0%	6	720.1	3.2%	1.1
Reynoldsburg	17	623.0	3.5%	5	30.2	2.9%	22	653.1	2.9%	1.0
Grove City	23	243.3	1.4%	6	189.2	4.7%	29	432.6	1.9%	0.7
Other	2	10.2	0.1%	1	185.4	3.1%	3	195.7	0.9%	0.3
Canal Winchester	1	80.7	0.5%	0	0.0	0.0%	1	80.7	0.4%	0.1
Worthington	11	55.0	0.3%	5	25.3	0.2%	16	80.3	0.4%	0.1
Obetz	3	63.6	0.4%	0	0.0	0.0%	3	63.6	0.3%	0.1
Total	**433**	**17,690.9**		**104**	**4,564.4**		**537**	**22,255.3**		**34.8**

Source: Franklin County Annexation Records. (Note: For comparative purposes, Columbus annexations are logged by year of action by the Franklin County Commissioners.)

Table G-10: **Valuation of New Commercial Building Permit Activity, 1980 to 1992**

	City of Columbus	Franklin County	Columbus Percentage of Franklin	Columbus MSA	Columbus Percentage of MSA	Franklin Percentage of MSA
1980	$126,702,412	$177,988,563	71.2%	$213,868,007	59.2%	83.2%
1981	$171,620,339	$206,871,451	83.0%	$229,788,200	74.7%	90.0%
1982	$172,143,998	$242,021,983	71.1%	$261,502,441	65.8%	92.6%
1983	$82,912,600	$118,324,682	70.1%	$130,481,567	63.5%	90.7%
1984	$124,652,467	$169,184,579	73.7%	$185,398,682	67.2%	91.3%
1985	$168,886,469	$259,903,959	65.0%	$293,561,468	57.5%	88.5%
1986	$243,367,764	$311,206,490	78.2%	$337,965,453	72.0%	92.1%
1987	$293,093,022	$375,652,892	78.0%	$410,360,686	71.4%	91.5%
1988	$296,312,629	$382,025,706	77.6%	$419,164,164	70.7%	91.1%
1989	$320,932,555	$386,654,737	83.0%	$425,884,938	75.4%	90.8%
1990	$317,536,094	$395,404,777	80.3%	$444,158,640	71.5%	89.0%
1991	$154,833,323	$226,321,126	68.4%	$267,123,326	58.0%	84.7%
1992	$125,606,490	$185,559,913	67.7%	$223,001,383	56.3%	83.2%
1980-1992 Average Annual Expenditure	**$199,892,320**	**$264,393,912**	**75.6%**	**$295,558,381**	**67.6%**	**89.5%**
1980-1992 Total Expenditure	**$2,598,600,162**	**$3,437,120,858**	**75.6%**	**$3,842,258,955**	**67.6%**	**89.5%**

Source: U.S. Bureau of the Census Construction Statistics, Department of Development building permit records.

Table G-11: **Share of Regional Population Growth, 1960 to 2010**
Columbus Metropolitan Area

County	Change 1960-1970	Percent of Regional Total	Change 1970-1980	Percent of Regional Total	Change 1980-1990	Percent of Regional Total	Change 1990-2010	Percent of Regional Total	Change 1960-2010	Percent of Regional Total
Delaware	6,801	3.6%	10,932	11.6%	13,089	9.8%	25,942	11.2%	56,764	8.7%
Fairfield	9,350	4.9%	20,377	21.6%	9,783	7.3%	13,771	5.9%	53,281	8.2%
Franklin	**150,326**	**78.7%**	**35,883**	**38.0%**	**92,305**	**69.1%**	**167,949**	**72.6%**	**446,463**	**68.6%**
Licking	17,557	9.2%	13,182	14.0%	7,319	5.5%	10,890	4.7%	48,948	7.5%
Madison	1,864	1.0%	4,686	5.0%	4,064	3.0%	6,548	2.8%	17,162	2.6%
Pickaway	4,216	2.2%	3,591	3.8%	4,593	3.4%	249	0.1%	12,649	1.9%
Union	933	0.5%	5,750	6.1%	2,433	1.8%	6,118	2.6%	15,234	2.3%
MSA Total	**191,047**	**100.0%**	**94,401**	**100.0%**	**133,586**	**100.0%**	**231,467**	**100.0%**	**650,501**	**100.0%**

Source: U.S. Bureau of the Census

Table G-12: Employment, Labor Force and Population Estimates for the Columbus MSA, 1980 to 2010

	1980	1990	2000	2010
Population	1,243,833	1,377,419	1,503,999	1,608,886
Ten year percent change		10.7%	9.2%	7.0%
Population 16 and over	936,554	1,065,112	1,175,848	1,292,799
Ten year percent change		13.7%	10.4%	9.9%
Civilian Labor Force	603,147	727,651	814,561	890,412
Ten year percent change		20.6%	11.9%	9.3%
Employment (790 Series)	560,200	721,700	813,000	894,300
Ten year percent change		28.8%	12.7%	10.0%
Participation Rates	64.4%	68.3%	69.3%	68.9%

Source: Columbus Development Department, Ohio Bureau of EmploymentStatistics, U.S. Bureau of Labor Statistics.

Table G-13: City of Columbus Share of Franklin County/Columbus MSA Wage Growth, 1980 to 1991

Year	Rate	Columbus Income Tax Collections (Withholding)	Columbus Wage Estimate	Franklin County Wages	Columbus Capture Percentage of County	MSA Wages	Columbus Capture Percentage of MSA	Franklin Capture Percentage of MSA
1980	1.5%	$72,000,000	$4,800,000,000	$5,912,000,000	81.2%	$7,315,000,000	65.6%	80.8%
1981	1.5%	$77,500,000	$5,166,666,667	$6,379,000,000	81.0%	$7,913,000,000	65.3%	80.6%
1982	1.5%	$83,200,000	$5,546,666,667	$6,721,000,000	82.5%	$8,296,000,000	66.9%	81.0%
1983	2.0%	$114,100,000	$5,705,000,000	$7,236,000,000	78.8%	$8,875,000,000	64.3%	81.5%
1984	2.0%	$130,400,000	$6,520,000,000	$8,033,000,000	81.2%	$9,825,000,000	66.4%	81.8%
1985	2.0%	$141,400,000	$7,070,000,000	$8,814,000,000	80.2%	$10,740,000,000	65.8%	82.1%
1986	2.0%	$154,200,000	$7,710,000,000	$9,489,000,000	81.3%	$11,534,000,000	66.8%	82.3%
1987	2.0%	$167,400,000	$8,370,000,000	$10,329,000,000	81.0%	$12,489,000,000	67.0%	82.7%
1988	2.0%	$178,000,000	$8,900,000,000	$11,216,000,000	79.4%	$13,629,000,000	65.3%	82.3%
1989	2.0%	$189,500,000	$9,475,000,000	$11,867,000,000	79.8%	$14,471,000,000	65.5%	82.0%
1990	2.0%	$202,700,000	$10,135,000,000	$12,666,000,000	80.0%	$15,458,000,000	65.6%	81.9%
1991	2.0%	$213,200,000	$10,660,000,000	$13,114,000,000	81.3%	$16,019,000,000	66.5%	81.9%

Note: Data from 1989 through 1991 has been adjusted for intercity transfers.