

# An Overview of Population Estimates



The U.S. Bureau of the Census produces annual population estimates for states and counties. New state estimates are released on December 31 of the same year, which means the estimates for July 1, 1997 were released last December 31. County estimates that are consistent with the previously released state estimates are usually released in the spring of the following year. Along with each new release, the Bureau also revises estimates of previous years. In March 1998, it released new 1997 county estimates, as well as revisions for 1991-1996.

## State and County Estimation Methodology

State estimates are derived by summing county estimates to the state level. The Census Bureau develops county estimates with a component change procedure called the Tax Return method. To build the model, the Bureau estimates each component of population change separately. For people residing in households, the components of change are births, deaths, and net migration, including net immigration from abroad. For the non-household population, change is represented by net change in the population in group quarters facilities.

Indiana births and deaths are estimated using data provided by the National Center for Health Statistics and the Indiana State Department of Health. The migration component is estimated for the under-65 population using federal income tax return data; for those 65 and over, it uses Medicare coverage data. Group quarters population data are collected annually by the Indiana Business Research Center, including the number of people residing in college and university housing, correctional facilities, mental health facilities, and juvenile facilities. These data are used to estimate the change in non-household population in each county.

In an effort to meet users' demands for current data, the Census Bureau's production schedule was accelerated in the mid-1990s so that county estimates for July 1 of each year would be available the following spring. Because data are usually not available for the current estimate year, the Bureau often estimates these components using simplifying assumptions, including the assumption that there has been no change in the data between the previous year and the current year—or, if more recent data are available at the state level, that the distribution of data by county did not change from the prior year. A year later, the initial component estimates are replaced by revised estimates based on the actual data for the components of population change.

The annual revision process can result in confusion. If users would add only the newly released estimates for the most recent year to an existing database

or spreadsheet, the changes and percent changes from the previous year they calculated would be different from those obtained by using the revised figures for the previous year.

## County Estimate Revisions, 1996

In March 1998, the Census Bureau released revisions of 1996 county population estimates that had been originally released in the spring of 1997. Highlights of these revisions include:

- Estimated population for the state as of July 1, 1996 was cut from 5,840,528 to 5,828,090 for a decrease of 12,438 people—a 0.21% reduction.
- Eleven counties saw upward revisions for a total of 255 more people. Eighty-one counties saw downward revisions for a total of 12,693 fewer people.
- The largest numeric differences were in Marion County (down 2,671 people) and Lake County (down 924 people). The largest numeric increase was in Dearborn County (up 62 people).
- The largest percentage differences were in Franklin and Brown counties, each down by about 1%.
- For 67 counties, the revisions were between -0.3% and 0.3%. For 16 counties, the revisions were between -0.4% and -0.3%. For nine counties, the revisions were between -1% and -0.4%.

## Sub-County Estimates

The Census Bureau also produces estimates for all cities, towns, and townships in the nation, although the frequency and timing of these releases vary. The most recent sub-county population estimates for 1991-1996 were released in November 1997.

The Bureau calculated sub-county estimates using the Distributive Housing Method. Starting with the number of housing units in each geographic area from the 1990 census, and using building permit and demolition data for 1990-1996, an estimate of the number of housing units for July 1, 1996 for each geographic area was calculated. Then applying the persons per household rates from the 1990 census, estimates of the household population were calculated. Estimates of 1996 group quarters population were added to the household estimates to yield total population estimates for each area. The Census Bureau has announced that it expects to re-release the 1996 sub-county estimates during the summer of 1998.

## Demographic Estimates

The Census Bureau also periodically releases population estimates with demographic detail for states and counties. We currently have estimates by age, gender, race, and origin for July 1, 1996.

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# Growth and Decline: Indiana and the U.S.

**H**oosier population continues to grow, according to population estimates released by the U.S. Bureau of the Census on December 31, 1997. But the rate is slower than it was earlier in the decade. The state's population is estimated to have increased from 5.83 million in 1996 to 5.86 million in 1997, for an increase of 36,000 people and an annual growth rate of 0.6%.

The estimates suggest that population growth in the state is slowing down and is consistent with the slowing in the state's economic growth. Both the population and the economy continue to grow, but more slowly than in the early 1990s. Growth in the most recent year accounts for the smallest amount of annual growth since 1990, both in numbers of people added and yearly rates (see **Figure 1**).

Overall, the state has grown by 320,000 people since the most recent census in 1990—six times the growth of the 1980s (54,000). The rate of 5.8% between April 1, 1990 and July 1, 1997 is much higher than the 1980s rate of 1%. The state experienced net out-migration in the 1980s, with more people moving out of Indiana than moving in. The slight growth in the '80s was the result of natural increase (more births than deaths).

The migration patterns in the state have changed in the '90s. We are experiencing a reversal of previous migration trends, with larger numbers of people moving into the state. This in-migration and natural increase are combining to account for larger amounts of growth as well as more rapid population growth than we saw in the '80s.

Tax return-based migration data from the IRS provide evidence that more people are now moving into Indiana than are moving out. Of the net population increase of 36,000 people between 1996 and 1997, about 30,000 were the result of more births than deaths, with the remaining 6,000 due to net in-migration.

Annual population growth for the state appears to have peaked between 1992 and 1993, when the Hoosier state's population grew by 52,000 people, with 33,000 more births than deaths and a net in-migration of 19,000 people.

Indiana's growth rate of 5.8% between 1990 and 1997 is lower than the 7.6% rate for the nation. The Hoosier state has been the 28th fastest growing state in the nation between 1990 and 1997, retaining its position as the nation's 14th most populous state. However, Indiana's share of the nation's population continues to decline, from 2.56% in 1970, to 2.42% in 1980, to 2.23% in 1990, and to 2.19% in 1997.

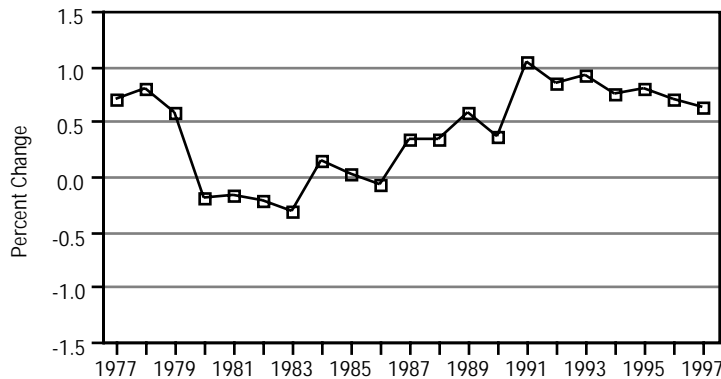
The state's growth rate of 5.8% compares favorably with that of neighboring states. The Midwest region grew by 4.7% during the same seven-year period. Indiana has grown faster than Michigan, Illinois, and Ohio, with a slightly lower rate of growth than Kentucky (see **Table 1**).

The West continues to be the fastest growing region in the nation, with its growth rate of 12.5% between 1990 and 1997. Nevada's growth of almost 40% between 1990 and 1997 makes it the fastest growing state in the nation (see **Figure 2**). It has added 475,000 people since 1990, moving it past Nebraska to become the nation's 37th most populous state. In the most recent year, between July 1, 1996 and July 1, 1997, Nevada added 76,000 people for an

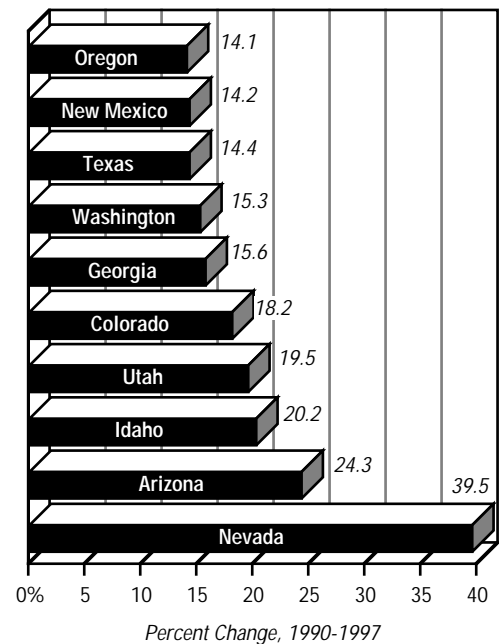
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**Figure 1**  
Twenty Years of Population Growth in Indiana



**Figure 2**  
Top Ten States in Rate of Growth, 1990-1997



**Table 1**  
**Indiana and Its Neighbors**

	<i>Population Increase 1990-97</i>	<i>Percent Change 1990-97</i>
Illinois	465,247	4.1
INDIANA	319,952	5.8
Kentucky	221,232	6.0
Michigan	478,605	5.1
Ohio	339,216	3.1

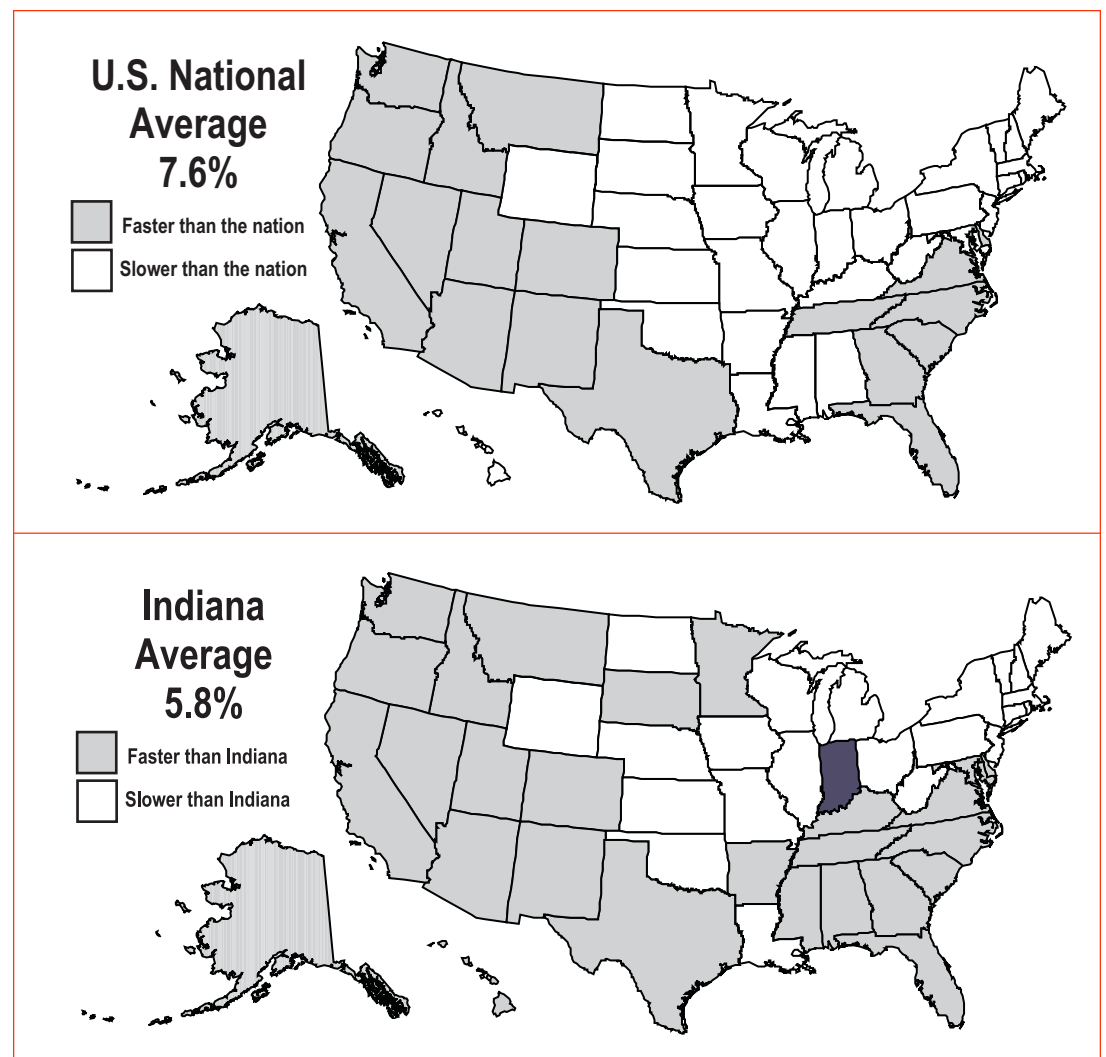
annual growth rate of 4.7%. This made it the fastest growing state in the nation for the 12th consecutive year.

Other states with high growth rates between 1990 and 1997 include Arizona, Idaho, Utah, Colorado, Georgia, Washington, and Texas (see Figure 2 for actual rates). California and Texas added the largest numbers of people since 1990, with population increases of almost 2.5 million people in each state. Other states adding large numbers of people include Florida, Georgia, Arizona, and North Carolina.

The District of Columbia has experienced a decline of almost 78,000 people since 1990 for a loss rate of 12.8%. Connecticut and Rhode Island have also lost population between 1990 and 1997. Pennsylvania experienced the largest numerical population decline in the most recent year between July 1, 1996 and July 1, 1997, with its population loss of 20,000 people in one year.

The Census Bureau estimated that the nation's population increased from 248.8 million in 1990 to 267.6 million in 1997. The ten most populous states are California (32.3 million), Texas (19.4 million), New York (18.1 million), Florida (14.7 million), Pennsylvania (12.0 million), Illinois (11.9 million), Ohio (11.2 million), Michigan (9.8 million), New Jersey (8.1 million), and Georgia (7.5 million).

Indiana, ranked as the 14th most populous state with an estimated 1997 population of 5.86 million, is closely followed by the state of Washington, with a 1997 population estimate of 5.61 million. In the most recent year between 1996 and 1997, Indiana ranked as the 29th fastest growing state, at an annual rate of 0.6%. Compare this to Washington, the 8th fastest growing state with an annual rate of 1.6%. Assuming that these annual rates will continue results in a projection that Washington will pass Indiana as the 14th largest state in the year 2002.



# The Suburbs: Fastest Growing Hoosier Counties



Since the 1990 census, the fastest growing counties in Indiana have been primarily suburban counties, according to population estimates released this past March 17 by the U.S. Bureau of the Census (see **Map 1**). Of Indiana's 92 counties, 49 grew faster than the state between 1990 and 1997, with growth rates exceeding 5.8% (see **Map 2**). Twenty-seven counties experienced population growth between 1% and 5.8%, 11 counties showed little population change (less than 1%), and five counties experienced population decline of more than 1% since the 1990 census.

Hamilton County led the state in population increase, both in numbers (almost 46,000 more people) and in growth rate (42.1%) between 1990 and 1997. Its growth rate since the 1990 census was twice that

of the second fastest growing Hoosier county, Hendricks. In fact, Hamilton County was the fastest growing county in the five-state region consisting of Indiana, Illinois, Kentucky, Ohio, and Michigan.

Other fast-growing Hoosier counties included Hendricks, Johnson, Dearborn, Owen, Hancock, Morgan, Jasper, Jennings, and Washington (see **Table 1**).

Hamilton County also led the state in population growth in the most recent year, with more than 7,000 people added—a rate of 4.8% between July 1, 1996 and July 1, 1997. Other counties experiencing growth over 2% in the most recent year included Hendricks, Switzerland, Dearborn, Johnson, Morgan, Harrison, Miami, Hancock, Jennings, and Carroll.

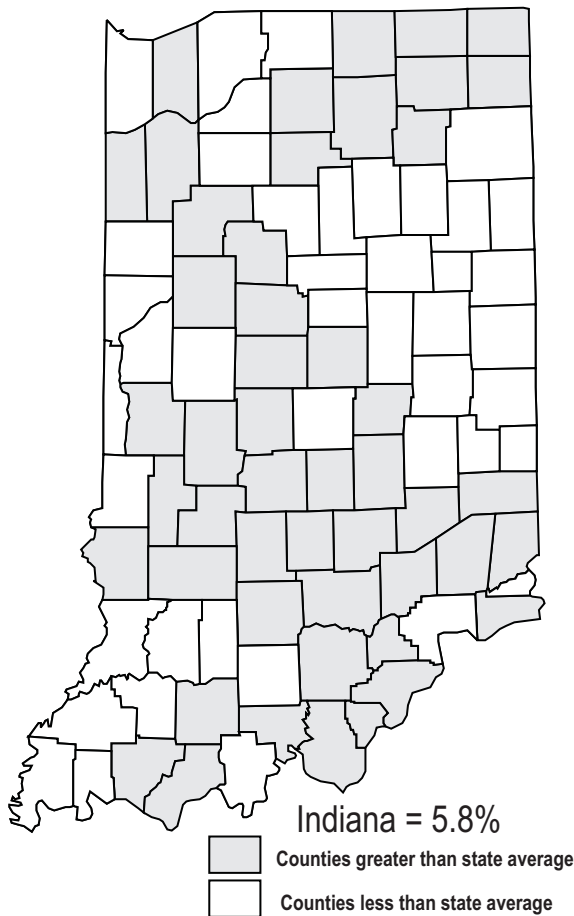
Recent population growth in Miami County is notable. In fact, Miami County has been the state's

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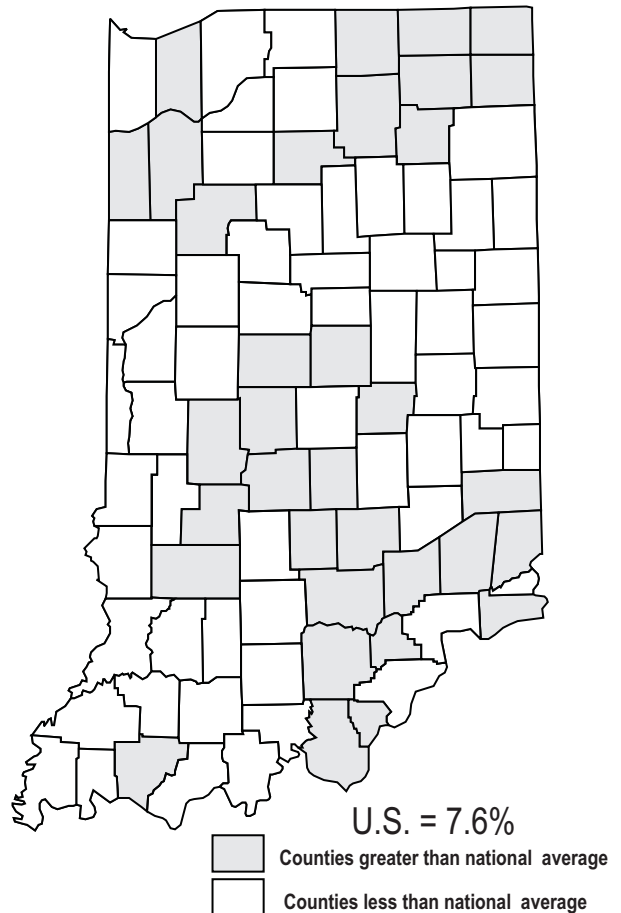
Map 1

Indiana County Population Change Compared to State Average, 1990 to 1997



Map 2

Indiana County Population Change Compared to National Average, 1990 to 1997



8th fastest growing county between 1996 and 1997. Due to the restructuring of Grissom Air Force Base, Miami County lost almost 4,700 people between 1991 and 1995. But since 1995, redevelopment efforts may have contributed to the county's net growth of about 800 people, for a growth rate of 2.5%.

The Bureau's estimates indicate that the population of Delaware County has declined by 2,000 people since the 1990 census, for a loss rate of 1.7%. Other counties that experienced significant population de-

cline included Grant (1,350 people, or 1.8%), Vigo (1,167 people, or 1.1%), and Wabash (500 people, or 1.6%).

In the most recent year, Marion County's population actually declined by 1,200 people. Marion County continues to experience out-migration, with more people moving out of the county than moving in. In the first half of the 1990s, the county's natural increase (births exceeding deaths) resulted in a slight population growth for the state's most populous county. But between 1996 and 1997, its estimated net out-migration exceeded its natural increase, resulting in its population loss.

The ten largest Hoosier counties in terms of population are Marion, Lake, Allen, St. Joseph, Elkhart, Vanderburgh, Hamilton, Porter, Tippecanoe, and Madison. The smallest are Ohio, Union, Warren, Switzerland, and Benton, each with a population under 10,000. The growth rate for each of the 92 Hoosier counties is shown in **Table 2**.

It is important to note that these population figures are estimates produced using a demographic model and are not the result of a direct attempt to count population, as is done in a census year. The 1997 state and county estimates were produced by the U.S. Bureau of the Census using the Tax Return Method.

**Table 1**  
**Ten Fastest Growing Counties in Indiana**

	POPULATION INCREASE, 1990 TO 1997		Metropolitan Statistical Area
	Percent Change	Increase in Number	
Hamilton	42.1	45,849	Indianapolis
Hendricks	21.9	16,574	Indianapolis
Johnson	21.3	18,779	Indianapolis
Dearborn	19.9	7,741	Cincinnati
Owen	17.2	2,976	Not in an MSA
Hancock	16.6	7,544	Indianapolis
Morgan	15.9	8,867	Indianapolis
Jennings	15.0	3,556	Not in an MSA
Jasper	15.0	3,737	Not in an MSA
Washington	14.4	3,426	Not in an MSA

**Table 2**  
**Indiana Rate of Growth by County, 1990-1997**

Adams	5.6	Elkhart	9.3	Jefferson	5.0	Ohio	2.7	Sullivan	6.8
Allen	3.7	Fayette	0.5	Jennings	15.0	Orange	5.3	Switzerland	11.6
Bartholomew	8.0	Floyd	11.0	Johnson	21.3	Owen	17.2	Tippecanoe	5.9
Benton	1.2	Fountain	2.4	Knox	-0.5	Parke	6.7	Tipton	1.7
Blackford	-0.3	Franklin	10.2	Kosciusko	7.8	Perry	1.0	Union	4.2
Boone	12.7	Fulton	8.0	Lagrange	11.0	Pike	2.0	Vanderburgh	1.1
Brown	10.7	Gibson	0.1	Lake	0.8	Porter	11.8	Vermillion	1.3
Carroll	6.3	Grant	-1.8	La Porte	1.9	Posey	2.6	Vigo	-1.1
Cass	0.4	Greene	8.8	Lawrence	6.3	Pulaski	4.5	Wabash	-1.6
Clark	6.2	Hamilton	42.1	Madison	0.9	Putnam	11.2	Warren	-0.1
Clay	7.4	Hancock	16.6	Marion	2.1	Randolph	1.2	Warrick	13.2
Clinton	7.3	Harrison	13.7	Marshall	7.5	Ripley	10.4	Washington	14.4
Crawford	5.9	Hendricks	21.9	Martin	1.4	Rush	0.6	Wayne	-0.2
Daviess	4.8	Henry	1.5	Miami	-10.0	St. Joseph	4.5	Wells	3.2
Dearborn	19.9	Howard	3.4	Monroe	7.0	Scott	8.7	White	7.6
Decatur	7.3	Huntington	4.8	Montgomery	5.4	Shelby	7.1	Whitley	8.4
De Kalb	9.6	Jackson	8.4	Morgan	15.9	Spencer	6.2		
Delaware	-1.7	Jasper	15.0	Newton	8.4	Starke	4.4		
Dubois	6.9	Jay	0.8	Noble	10.7	Steuben	13.3		

# Where Are They Coming From, Where Do They Go?

## A Study of Migration in 1995-1996

**I**ndiana's estimated in-migration of 120,000 and out-migration of 110,000 people between 1995 and 1996 resulted in a positive net in-migration figure of 10,000. This means that approximately 10,000 more people moved into the state than out of it between 1995 and 1996. This estimated net in-migration figure of 10,000 gave the state the 15th largest number of net in-migrants in the nation.

States that had the greatest number of net in-migrants were in the South and West: Florida (93,000), Georgia (69,000), North Carolina (67,000), Arizona (59,000), Nevada (42,000), Texas (42,000), and Tennessee (41,000). Other states experiencing net in-migration of 10,000 or more people included Colorado, Oregon, Washington, Missouri, Arkansas, South Carolina, Virginia, and Indiana.

States that had the largest number of net out-migrants include California, with 198,000 more out-migrants than in-migrants, and New York, with 160,000 more out-migrants than in-migrants. Illinois, New Jersey, Pennsylvania, Connecticut, the District of Columbia, Louisiana, Massachusetts, and Hawaii all experienced net out-migration exceeding 10,000.

Nevada, the fastest growing state in the nation during the 1990s, had the highest crude net migration rate from 1995 to 1996, at 27.7%. This was twice the rate experienced by second-place Arizona, with a rate of 13.6%. Other states with high crude net migration rates included Georgia (9.6%), North Carolina (9.3%), Oregon (8.8%), Colorado (8.0%), Idaho (7.9%), Tennessee (7.8%), Florida (6.6%), and New Hampshire (5.8%).

Indiana's crude net migration rate from 1995 to 1996 was 1.8%, ranking it as the 25th highest in the nation. Neighboring states and their rates included Kentucky (1.9%), Michigan (0.1%), Ohio (-0.7%), and Illinois (-4.0%).

The District of Columbia had the most negative crude net migration rate, at -24.2%, followed by Hawaii (-8.9%), New York (-8.8%), California (-6.3%), and Alaska (-6.0%).

### Crude Net Migration Rates for States

The crude net migration rate is calculated as follows:

$$\text{CNMR} = (\text{net migration}/\text{total population}) \times 1,000$$

The result is a net migration rate per 1,000 population and a figure that allows for geographic comparisons.

### Migration Between Indiana and Other States

The largest number of in-migrants to Indiana were from neighboring states: Illinois (19,600), Ohio (11,500), Kentucky (9,400), and Michigan (9,100). Indiana also attracted large numbers of new residents from Florida (7,900), California (7,500), Texas (6,400), foreign countries (3,700), Tennessee (3,000), and Pennsylvania (2,700).

Hoosiers moving away tended to migrate to neighboring states or to the South or West: Illinois (12,200), Ohio (10,000), Florida (9,700), Michigan (9,100), Kentucky (9,100), Texas (6,200), Tennessee (4,800), California (4,100), North Carolina (3,300), and Georgia (3,200).

The largest number of Indiana's net in-migrants were from Illinois (7,400), California (3,400), foreign countries (1,800), Ohio (1,500), New York (1,000), Pennsylvania (700), and Virginia (600). States that accounted for the largest number of net out-migrants from Indiana were Tennessee (1,800), Florida (1,800), Arizona (1,000), South Carolina (700), North Carolina (700), and Georgia (500) (see **Map 1**).

Indiana saw large numbers of in-migrants from and out-migrants to the states of Kentucky, Texas, and Michigan, but this did not result in large numbers of net migrants. The state experienced little net in-migration from Texas and Kentucky. About the same number of people moved from Indiana to Michigan as moved from Michigan to Indiana, resulting in net migration between the two states of about zero.

### Indiana County-to-County Migration

**Map 2** shows net migration for Hoosier counties. Those experiencing the largest numbers of net in-migrants include Hamilton (4,800), Hendricks (2,100), Johnson (1,600), and Porter (1,300). Those with

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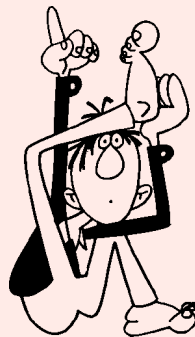
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### How the IRS Determines Migration from Its Files

County-to-county migration flow data are developed by the Internal Revenue Service by matching social security numbers of primary taxpayers from one year to the next. The most recent data from the IRS were obtained by matching federal tax returns filed in 1995 (for the year 1994) with tax returns filed in 1996 (for the year 1995).

When a social security number match is found, the counties of residence for 1995 and 1996 are compared to determine if they are the same. If the county addresses match, then the taxpayer's number of personal exemptions are counted as "non-migrants." If the county addresses do not match, then the taxpayer's number of personal exemptions are counted as "out-migrants" from the county listed on the return filed in 1995 and as "in-migrants" into the county listed on the return filed in 1996.

Data are based on income tax returns from the IRS's Individual Master File. That master file includes a record for each IRS Form 1040, 1040A, and 1040EZ individual tax return filed by citizens and resident aliens. Actual migration flows may be understated, since tax returns that did not match based on social security number are not included. Moreover, additional people not represented in the data set include those not required to file tax returns because their income was below the required minimum for filing, people whose only income was from social security payments, people whose income was primarily from a vested interest in a retirement plan, and immigrants.



positive net migration between 500 and 900 included Morgan, Hancock, Putnam, Clark, Warrick, and Starke. Those with the largest number of net out-migrants were Marion (5,600) and Lake (2,700).

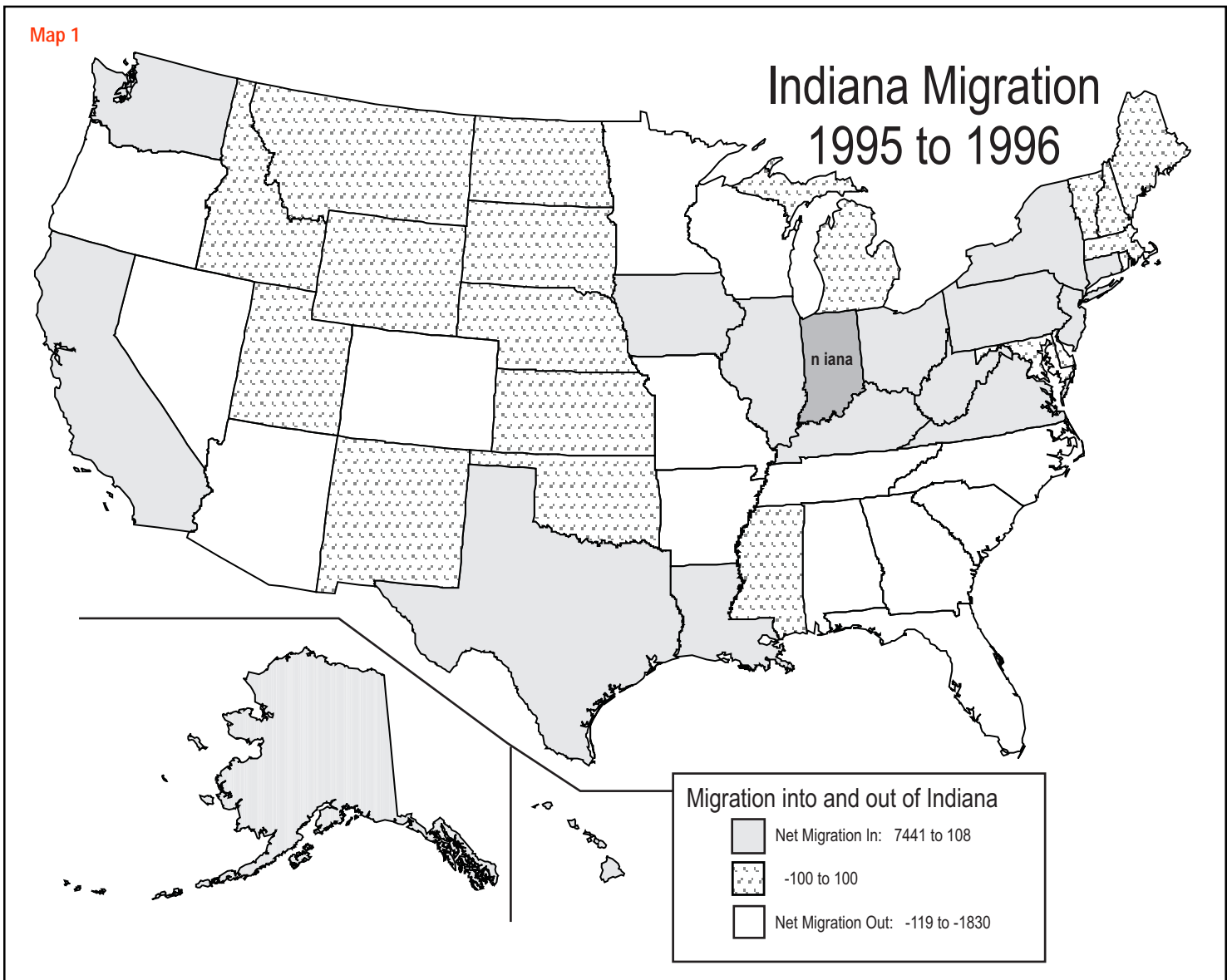
**Hamilton County**

Hamilton County has been the fastest growing Indiana county in the 1990s. Between 1995 and 1996, it had in-migration of 15,000 and out-migration of 10,200 for a net in-migration estimate of 4,800 people.

About 59% of those moving into Hamilton County were from other Hoosier counties, with 38% of the in-migrants coming from neighboring Marion County. About 50% of the people moving out of Ham-

ilton County moved to other Indiana counties, with 29% of the out-migrants moving to Marion County. With 5,700 in-migrants from Marion County and almost 3,000 out-migrants to Marion County, the net in-migration of more than 2,700 people from Marion to Hamilton counties accounted for 58% of Hamilton County's total net in-migration figure.

The largest number of in-migrants to Hamilton County from other states were from Illinois (520), Ohio (380), Michigan (320), California (310), Florida (150), and Texas (120). The largest number of out-migrants moving to other states went to Texas (360), Ohio (240), Florida (220), Illinois (170), Arizona (160), and Georgia (130).





States that accounted for the largest number of net in-migrants (after accounting for outflow) to Hamilton County included Illinois (350), California (200), Michigan (200), and Ohio (150). States accounting for the largest number of net out-migrants from Hamilton County included Texas (240), Arizona (90), Florida (60), and Georgia (60).

### Marion County

Marion County experienced moderate population growth between 1990 and 1996, despite its negative net migration. This is because the county's natural increase (births minus deaths) exceeded its net out-migration figure. Between 1995 and 1996, Marion County was estimated to have experienced in-migration of 37,800 people and out-migration of 43,400 people for a net out-migration estimate of 5,600.

About 54% of the people moving into Marion County were from other Hoosier counties, with 33% of its total in-migrants from its eight surrounding counties. Sixty percent of the people moving out went to other Indiana counties, with 46% of its total out-migrants moving to one of the eight neighboring counties.

Of the 20,000 people moving from Marion County to a neighboring county, the largest numbers of people ended up in Hamilton (5,700), Hendricks (4,100), and Johnson (4,100) counties.

Marion County's in-migration from and out-migration to other states was balanced, with approximately 17,500 people moving from there to other states, and with the same number of people moving from other states into the county. The largest number of in-migrants from other states were from Illinois (1,600), California (1,400), Ohio (1,400), Florida (1,100), Texas (900), and Michigan (700). The largest number of out-migrants from Marion County moved to Florida (1,400), Ohio (1,200), Illinois (1,000), Texas (800), and California (800).

States that accounted for the largest number of net in-migrants to Marion County included California (700), Illinois (600), and Ohio (300). States that accounted for the largest number of net out-migrants

from Marion County were South Carolina (400), Florida (300), and North Carolina (200).

### Lake County

Like Marion County, Lake County has grown slightly since the 1990 census, despite its negative net migration, due to natural increase. Between 1995 and 1996, it experienced in-migration of 14,000 and out-migration of 16,700, for a net out-migration estimate of 2,700 people.

Lake County experienced net out-migration to other Hoosier counties, net in-migration from the state of Illinois, and net out-migration to other states between 1995 and 1996. About 2,800 people moved from other Indiana counties into Lake County, while 6,400 people moved from Lake County to other Hoosier counties, for a net out-migration of 3,600 people.

The largest number of Hoosiers that moved between Lake County and other Indiana counties went to or from Porter County, the neighbor to the east. Sixteen hundred people, or 57% of the Hoosiers who moved into Lake County, were from Porter County, whereas 3,300 people, or 51% of the Lake County residents who moved to other Indiana counties, ended up in Porter County. The result was net migration from Lake to Porter County of about 1,700 people.

During the same year, 6,600 people moved from Illinois to Lake County, while 3,200 moved from Lake County to Illinois. This resulted in a net in-migration estimate of 3,400 people.

With net out-migration of 3,600 people to other Indiana counties, and with net in-migration of 3,400 people from Illinois, the overall migration picture for Lake County is completed by looking at migration estimates between the county and states other than Illinois. Lake County experienced net out-migration with other states; its in-migration estimate of 4,600 and out-migration estimate of 7,100 accounted for a net out-migration figure of 2,500 people. The largest numbers of net out-migrants from Lake County were accounted for by the states of Florida (300), Texas (200), Minnesota (200), Arizona (200), and Georgia (100).

