# Appendix

In this appendix, we discuss in detail two technical issues raised in the course of preparing this report. The first section discusses the problems with state level cost of living indexes and then compares various indexes that have been proposed and how they would affect Iowa's median-wage ranking among peer states. The second section explains how we arrived at our estimate of labor shortages in chapter 1, and why our estimate differs from other estimates.

## Wages and the Cost of Living

It is sometimes argued that Iowa is not really a low wage state because the cost of living is also low; higher wages in other states simply compensate for higher prices there. This issue warrants closer examination. While it is undoubtedly true that Iowa's cost of living is below the national average, it is not clear that this accounts for all or even a major share of the wage difference, particularly in comparison with other Midwestern states that are Iowa's primary competitors.

Unfortunately, there is not a straightforward way of measuring statewide differences in the cost of living. While so-called cost of living indexes abound in various web sites that purport to give you salary-equivalent comparisons between any two cities in the US, and can be found on city web sites and elsewhere, these are of dubious validity. The principal source of comparative city price indexes is the ACCRA indexes for some 300 metropolitan areas.[1] Prepared by a private organization, these indexes are of some value but are suspect for a number of reasons. They are based on quarterly reports of prices for a very limited number of items (59), and the reports are prepared by local chambers of commerce in each city, which raises questions of reliability and consistency. The geographic coverage is incomplete, and the set of cities varies with each quarterly report, depending on which chambers submitted data. There is no straightforward way to combine the city indexes into a state index. The "market baskets" are the same for every city, so that energy costs, for example, are given equal importance in San Diego, Minneapolis, and Miami, though households in those areas undoubtedly have very different needs for heating and air conditioning. Also, the ACCRA indexes are intended to represent the cost of living for "professional and executive households in the top income quintile," not the average middle class household.

Keeping these problems in mind, the ACCRA indexes may nonetheless be suggestive of the kinds of price differences that exist. The indexes for eight Iowa Cities are shown in Table 1 on the next page. Note that the average city in the ACCRA survey is given an index of 100. Thus the index of 97.4 for Cedar Rapids, for example, would mean that ACCRA's market basket of 59 goods, if purchased in Cedar Rapids, would cost 97.4% of the average cost of that market basket

[1] *ACCRA Cost of Living Index*, ACCRA, Arlington, Virginia; produced quarterly.

among the 300 some cities in their survey. The indexes for the cities in surrounding states in ACCRA's most recent report are shown in the table. (For some of the Iowa cities the data come from earlier reports.)

Table A.1
**ACCRA Cost of Living Index, Third Quarter, 2000**
**Cities in Iowa and Peer States**

| State | City | Index | State | City | Index |
|---|---|---|---|---|---|
| IA | Ames | 94.3 | KS | Garden City | 98.4 |
| IA | Burlington | 99.0 | KS | Hays | 97.8 |
| IA | Cedar Rapids | 97.4 | KS | Hutchinson | 93.6 |
| IA | Des Moines | 98.7 | KS | Manhattan | 95.1 |
| IA | Iowa City | 97.8 | MN | Minneapolis | 109.2 |
| IA | Mason City | 96.4 | MN | St. Paul | 109.8 |
| IA | Quad Cities | 97.5 | MN | Rochester | 100.0 |
| IA | Waterloo/Cedar Falls | 93.1 | MN | St. Cloud | 98.3 |
| IL | Bloomington/Normal | 104.1 | MO | Columbia | 99.6 |
| IL | Champaign-Urbana | 105.3 | MO | Joplin | 89.1 |
| IL | Chicago | 107.4 | MO | Kansas City | 99.3 |
| IL | Peoria-Pekin | 100.4 | MO | St. Joseph | 91.2 |
| IL | Rockford | 102.5 | MO | St. Louis | 97.2 |
| IL | Springfield | 96.9 | MO | Springfield | 93.7 |
| IL | Carbondale | 96.3 | MO | Nevada | 86.9 |
| IL | Danville | 98.7 | MO | Poplar Bluff | 90.3 |
| IL | Dixon | 103.0 | NE | Lincoln | 99.7 |
| IL | Quincy | 95.9 | NE | Omaha | 93.8 |
| IN | Bloomington | 99.5 | NE | Hastings | 92.7 |
| IN | Elkhart-Goshen | 92.9 | SD | Sioux Falls | 98.6 |
| IN | Evansville | 91.3 | SD | Vermillion | 102.1 |
| IN | Anderson | 91.5 | WI | Eau Claire | 96.0 |
| IN | Hamilton County | 100.9 | WI | Green Bay | 100.1 |
| IN | Lafayette | 94.5 | WI | Milwaukee/Waukesha | 103.0 |
| IN | Munice | 98.0 | WI | Sheboygan | 95.2 |
| IN | South Bend | 89.2 | WI | Marinette | 105.9 |
| KS | Lawrence | 100.9 | WI | Marshfield | 97.5 |
| KS | Topeka | 94.1 | WI | Stevens Point | 101.0 |
| KS | Dodge City | 98.5 | | | |

The Bureau of Labor Statistics, which prepares the Consumer Price Index for the country as a whole, does prepare indexes for certain metropolitan areas and for four broad regions, but they can be used only to compare prices over time within the same region, and are not valid for comparisons between areas.

A recent report by Kathleen Short, a researcher at the Census Bureau, reviewed various approaches to preparing state or area cost of living indexes and concluded that most proposals

for doing so are fraught with problems.[2] The most promising approach is one based on the department of Housing and Urban Development's Fair Market Rent (FMR) data. These data on rents are collected periodically for every metropolitan area and non-metropolitan county in the US; the figures include monthly rent and utilities (excluding telephone). Housing and utility costs are the two major items in household budgets that show the most variation from place to place. Identifying variation in housing and utility costs would thus identify a substantial share of the overall variation in prices across states. Such indexes, in other words, show the relative cost of living if prices of goods other than housing and utilities were the same everywhere.

There are problems with Short's FMR approach as well: the resulting indexes are best used to adjust poverty thresholds, since they identify housing costs experienced by lower income households. There is probably a positive correlation between rents and owner-occupied housing costs, but the relation may not be that close. And obviously they ignore variation in costs for the other portion (about two-thirds) of household budgets. Furthermore, they are based on all FMR areas, including rural counties, and thus give more weight to rural households than does the CPI (which as an index for all urban consumers) and more weight than is probably appropriate for adjusting wages or incomes of hourly workers.

The FMR-based indexes that the Census Bureau's Kathleen Short created are shown in Table 2. These figures confirm at least the pattern of results suggested by the ACCRA data: the cost of living appears to be lower in Iowa (for lower income households apparently, as well as upper income) but Iowa differs very little from most surrounding states, the exceptions being Minnesota and Illinois, which appear to have a higher cost of living. As with the ACCRA indexes, small differences in index numbers between two states should not be considered significant.

Two of the problems with the FMR index created by Short (problems for our purposes, not necessarily for use in adjusting poverty thresholds, which was her purpose) can be corrected. First, the indexes can be adjusted to be more appropriate for middle-income households, where rent and utilities are a smaller share of total costs. The second index in Table 2 does just that; it takes Short's index but then weights housing and utilities by their share in the Consumer Price Index (32.6%) rather than their share of low-income family budgets, the 44% used by Short. Finally, a housing cost index can be created based only on rents and utilities in metropolitan areas within each state, and again using the CPI weight for housing costs. (It should be noted that metropolitan areas include 80% of the US population.) Since HUD collects median rent for each area as well as Fair Market Rent (which can be $40^{th}$ percentile rent in places, $50^{th}$ percentile in others) we can use median rent instead. This is more appropriate again if we are trying to construct an index for middle-income households. Such a cost of living index was created by the authors of this report and is shown in the third column of Table 2; this is the one that we feel is most appropriate for adjusting wages and incomes of middle-income non-farm households in the Midwest.

These indexes showing the cost of living based on rent and utility price differences, and assuming other prices are the same, show that Iowa has a cost of living similar to Indiana,

[2] Kathleen Short, U.S. Census Bureau, "Where We Live: Geographic Differences in Poverty Thresholds," paper presented at the annual meeting of the Society of Government Economists, New Orleans. January, 2001.

Kansas, Missouri, Nebraska, South Dakota, and Wisconsin, and that all of these states have a cost of living 5% to 8% below the national average. Minnesota and Illinois, on the other hand, have a cost of living close to the national average. Again, it should be emphasized that these numbers are merely suggestive, and that differences of a few points on the index should not be regarded as significant.

Table A.2
**Comparison of Cost of Living Indexes**

| State | Short's Experimental FMR Index | Short's Index Adjusted for CPI Housing Weight | Median Rent Index with CPI Housing Weight, Metro Areas Only | Median City's ACCRA Index | Leonard - Friar Index |
|---|---|---|---|---|---|
| IA | 0.87 | 0.90 | 0.92 | 0.97 | 0.934 |
| IL | 1.04 | 1.03 | 1.02 | 1.01 | 1.004 |
| IN | 0.90 | 0.93 | 0.94 | 0.94 | 0.964 |
| KS | 0.88 | 0.91 | 0.93 | 0.98 | 0.935 |
| MN | 0.97 | 0.98 | 0.98 | 1.05 | 0.945 |
| MO | 0.87 | 0.90 | 0.92 | 0.92 | 0.930 |
| NE | 0.89 | 0.92 | 0.94 | 0.94 | 0.938 |
| SD | 0.89 | 0.92 | 0.95 | 1.00 | 0.920 |
| WI | 0.92 | 0.94 | 0.95 | 1.00 | 0.952 |

A third approach to constructing state cost-of-living indexes has been developed by Herman Leonard and Monica Friar at Harvard University's Taubman Center for State and Local Government.[3] They started with 1981 data prepared by the Bureau of Labor Statistics (but discontinued after that year) showing the comparative cost of an intermediate family budget in 25 metropolitan areas and in non-metropolitan portions of the four census regions. They used this data to benchmark differences across states, and then inflated the resulting index for each state for each year to 1998 by applying the metropolitan and regional CPI indexes (mentioned previously) that measure inflation over time within a region or metro area. As with the rent-based indexes, the U.S. average for 1998 was given a value of 1.00. This index is shown in the last column of Table 2. Despite being constructed on a very different basis, the index produces relative positions among the nine states quite similar to the rent-based indexes; only Minnesota and South Dakota have indexes that vary by 3 points or more from the median rent index.

It is instructive to determine if the cost of living differences suggested by the ACCRA data and by the other indexes translate into significantly different rankings of states by wages. Table 3 adjusts the 1999 median hourly wage in Iowa and the peer states in three ways: using the median-rent index in column 4 of Table 2, using the median city ACCRA index for each state (shown in column 5 of Table 2), and using the Leonard-Friar index. Using the first adjustment, we see that Illinois' wage ranking changes substantially, but the others do not. Iowa remains sixth out of nine on the wage scale. While the ACCRA index results in more changes in position among the states, it is interesting that Iowa's ranking is the same as with the rent-based index.

[3] Herman Leonard, Jay Walder, and Jose Acevedo. "The Federal Budget and the States: Fiscal Year 1998." December 9, 1999. Available at: http://www.ksg.harvard.edu/fisc98/

The general but tentative conclusion from these analyses is that Iowa's competitive position within the region is about the same whether one corrects for cost of living differences or does not. We are below the middle in the region in terms of average wages. The region as a whole, however, has a lower cost of living than the national average.

Table A.3
**Adjustment of Wages for Cost of Living Differences: Iowa and Peer States**

| | Median hourly wage in 1999 | | Adjusted using median rent index | | Adjusted using ACCRA index | | Adjusted using Leonard-Friar index | |
|---|---|---|---|---|---|---|---|---|
| | Wage | Rank | Wage | Rank | Wage | Rank | Wage | Rank |
| MN | 13.45 | 1 | 13.72 | 1 | 12.81 | 2 | 14.23 | 1 |
| IL | 12.43 | 2 | 12.19 | 5 | 12.31 | 4 | 12.38 | 4 |
| MO | 11.89 | 3 | 12.92 | 2 | 12.92 | 1 | 12.78 | 2 |
| WI | 11.84 | 4 | 12.46 | 3 | 11.84 | 5 | 12.44 | 3 |
| IN | 11.69 | 5 | 12.44 | 4 | 12.44 | 3 | 12.13 | 5 |
| **IA** | **11.01** | **6** | **11.97** | **6** | **11.35** | **6** | **11.79** | **6** |
| KS | 10.89 | 7 | 11.71 | 7 | 11.11 | 7 | 11.65 | 7 |
| NE | 10.43 | 8 | 11.10 | 8 | 11.10 | 8 | 11.12 | 8 |
| SD | 10.05 | 9 | 10.58 | 9 | 10.05 | 9 | 10.92 | 9 |
| US | 11.87 | | 11.87 | | 11.87 | | 11.87 | |

Source: EPI; calculations by the authors.

# Projections of the Labor Force, Employment and Labor Shortages

Our estimates of labor shortages that can be expected in this decade begin with projections of population growth in Iowa from 2000 to 2010. Population projections, based on trends in birth and death rates, in-migration, and out-migration, are prepared periodically by the U.S. Bureau of the Census and by other organizations such as Woods & Poole Economics, Inc., as well as by individual demographers. Unfortunately, none of these projections yet takes into account the results of the 2000 census and it will be some time before the census figures on population by age group and other detailed data are released. The only projections we have now are based on population *estimates* for the years since 1990. This is a problem for Iowa, because we know now that these estimates were not particularly accurate; the total state population from the 2000 census was 2,926,324, whereas the most recent estimate of July 1, 1999 state population was 2,869,413. We know that the population increased by 149,569 in the past decade; it is unlikely that almost 57,000 of that growth occurred just between July 1, 1999 and March 1, 2000. In other words, the estimates were low, and projections based on those estimates will also be low. Furthermore, estimates of net migration for the decade, as recently as a year ago, were that the state gained a little less than 6,000 residents through migration; the 2000 census figure for total population, combined with what we know about birth and death rates in the 1990s, indicate that the correct figure is closer to a net in-migration of 49,000.[4]

[4] Willis Goudy and Margaret Hanson, "Population Change, Natural Change, and Net Migration in Iowa's Counties, 1990 to 2000," Ames: Census Services, Dept. of Sociology, Iowa State University, 2001.

It is still instructive to look at the growth *rates* that have been projected for the state for this decade, even though we would clearly want to use actual 2000 population as the starting point rather than a faulty projection of that population. Total population was projected by the Census Bureau to increase just 2.3% from 2000 to 2010, a much slower rate of growth than the 5.4% we experienced in the 1990s, which was still one of the smallest in the nation.[5] What about the working age population? The census projected the 18 to 64 age group to increase by 3.5% from 2000 to 2010. This is the net effect of three factors: Iowans turning age 18, Iowans turning age 65, and net out-migration (and some deaths) of persons in the 18-64 age group.[6] Woods and Poole's projections have been much higher than those of the Census Bureau. They projected (in 2001) a growth of 6.9% in the population age 20-64 by 2010. For reasons explained in Chapter 1, we assumed that the "working age population" of Iowa will grow between 4% and 8% in the decade 2000 to 2010, and that the labor force will also grow at this rate.[7]

How do the labor force projections compare with projections of the increase in demand for workers? Projections of job growth prepared by Iowa Workforce Development are based on industry-specific estimates of growth in production, and hence implied growth in need for labor, over the next decade. These estimates indicate a total statewide growth in jobs of about 262,000 over a ten-year period. We then assume that the ratio of labor force to jobs remains at 82.9%, which is what it was in 1999. (There are more jobs than workers for a variety of reasons, the most important being that many workers hold multiple jobs.) This implies that we would need labor force growth of 217,000 workers in this decade to fill the additional 262,000 jobs. The implied shortage of labor by the year 2010 (the difference between the growth in demand and the growth in supply) is thus between 91,000 and 154,000 (see Table 1.6). That is, this is how many additional workers would be needed to support the anticipated growth in jobs from 2000 to 2010. That anticipated growth, of course, will not be forthcoming if the labor force is not there to support it.

It may appear that we have grossly understated the labor shortage by ignoring the large number of retirements anticipated in the next decade, particularly as baby boomers begin to turn 62 in 2008. Iowa Workforce Development has estimated total attrition of about 386,000 workers between 2000 and 2010. Attrition consists mostly of retirements, but also includes workers exiting the work force for a variety of other reasons (death, disability, childbirth). Offsetting this attrition will be large numbers of young people, as well as immigrants and those coming from

[5] These projections, for the period 1995 to 2025, are the most recent published by the Bureau of the Census, though they are now seven years old.

[6] The situation will change dramatically in the following decade, 2010-2020. The oldest of the baby boom population bubble will reach age 62 in 2008; retirements can be expected to begin increasing before that year, as some take early retirement, but the major effects will be felt after 2010.

[7] We define the working age population as those between age 18 or 20 and age 64. We recognize that many people work beyond age 64; nationally, about one in six persons age 65 and older works. Assuming that the labor force grows at the same rate as the population age 18-64 results in conservative estimates of labor force growth since it fails to take into account that the population age 65 or older is projected to grow more rapidly than the population age 18-64, and that the labor force participation rates of the elderly may increase in the years to come as the age at which full social security benefits are available increases. Both factors would have the effect of increasing the overall growth in the labor force.

other states, entering the labor force. We do not have complete projections of the number of such labor force entrants, however, so estimates of job shortages cannot be based on the *gross* number of job vacancies (new jobs plus those exiting the labor force) versus the *gross* number of new workers (all those entering the labor force during the decade). Instead, we compare the *net growth* in jobs with the *net growth* in labor force. Nothing has been left out in such a comparison; the attrition is accounted for in the fact that the labor force growth is the net effect of people exiting and entering the labor force.

To compare gross job vacancies with net labor force growth would be to vastly overstate the shortage problem. To see why this is the case, consider a very simple example. There are 100 workers all working for the same firm; over the next decade, the firm will increase employment to 110. During that time, 25 workers will enter the labor force and 20 of the existing 100 workers will retire. The labor force will thus increase to 105 (100 + 25 – 20). The net growth in jobs is 10 and the net growth in the labor force is 5, leaving a shortage of 5 workers. The gross job vacancies total 30 (20 created through attrition and the 10 additional jobs) and the gross increase in the labor force (new entrants) is 25, again leaving a shortage of 5. Either calculation is correct. What is not correct is to conclude that the shortage is 25: the 30 job vacancies offset by a net increase in the labor force of only 5. Such a calculation counts the 20 retirements twice and thus overstates the shortage by a factor of 5.

# Data Sources

Data sources for the tables and figures used in this report are described below for each table and figure. Data used in this report are the latest available as of April, 2001. In the table and figure listings we use a shortened notation for common sources, as follows:

U.S. Census — Data from the Census Bureau web site at www.census.gov.

BLS — Data from the U.S. Bureau of Labor Statistics. Access to the various data series on employment, wages, and prices can be found at: http://www.bls.gov/proghome.htm

BEA — Data from the Bureau of Economic Analysis of the U.S. Department of Commerce at www.bea.doc.gov/bea/regional/data.htm.

IWD — Iowa Department of Workforce Development. Labor Market Information at: www.state.ia.us/government/wd/ris/lmi/index.html

EPI — Data from the Economic Policy Institute, Washington, D.C. and available at their web site. www.epinet.org and in Lawrence Mishel, Jared Bernstein, and John Schmitt, *The State of Working America 2000/2001* (Ithaca, N.Y.: Cornell University Press, 2001).

## *Chapter 1*

### Tables

**1.1 Iowa and its Regional Peers: Demographic and Economic Comparisons**
Total population and population characteristics from decennial Census. Education statistics from the March 2000 Current Population Survey, U.S. Census. Employment figures are from the BLS establishment data, Employees on Non-farm Payrolls, seasonally adjusted, data posted on web site January 19, 2001.

**1.2 Population Growth, U.S., Iowa, and Peer States**
U.S. Census.

**1.3 Iowa's Population Growth by Race and Ethnicity, 1990 and 2000**
U.S. Census.

**1.4 Employment Change in Iowa by Sector, 1979-1999**
Employment figures are from the BEA Regional Accounts Data, full and part-time employment, by place of work (that is, the total number of jobs in Iowa, whether occupied by residents of Iowa or not); includes jobs filled by persons age 14 and up.

**1.5 Manufacturing Growth and Decline in Iowa**
Iowa Department of Economic Development web site, calculations from IWD, data posted March 24, 2000. Wage and salary employment only (proprietors excluded).

**1.6 Projections of Growth in Jobs and in the Labor Force: 2000 – 2010**
Actual resident labor force number is from the BLS Local Area Unemployment Statistics; it is a simple average of the monthly labor force numbers for the year 2000. Approximate total jobs in Iowa is from the BEA, less an adjustment to account for approximately 40,000 jobs held by 14-15 year olds, persons in the military, and by domestics, who are included in BEA employment figures but not in the BLS resident labor force numbers. Projected resident labor force in 2010 is based on an average of two population projections for the working age population: U.S. Census population projections for persons age 18-64, and Woods and Poole projections for persons age 20-64 from Woods & Poole Economics, Inc., cited in Willis Goudy et al, *Iowa's Counties: Selected Population Trends, Vital Statistics, and Socioeconomic Data, 2000 Edition,* Ames, Iowa: Iowa State University, Department of Sociology. Projected increase in jobs is from Iowa Workforce Development, Labor Market Information Bureau; these jobs include all part-time and full-time jobs and self employment, just as the BEA job figures do.

## Figures

**1.1 Per Capita Personal Income: U.S. and Iowa, 1965-1999**
Raw income data is from BEA Regional Accounts Historical Tables; it is converted into 1999 dollars using the Consumer Price Index generated by the BLS.

**1.2 Unemployment Rate: Iowa and U.S., 1979-2000**
Iowa rate is from BLS Local Area Unemployment Statistics; national rate is from BLS Labor Force Statistics from the Current Population Survey (Historical Tables). Both are for the Civilian Labor Force, aged 16 or older.

**1.3 Growth in Non-Farm Employment in Iowa, 1979-1999**
From BEA Regional Accounts Data.

**1.4 State Employment Trends, 1965-1999**
Percentage of non-farm wage and salary employment calculated from data on the Iowa Department of Economic Development web site, calculations from IWD; data posted March 24, 2000.

**1.5 Sectoral Employment Growth as a Percent of Total Growth in Non-Farm Employment, 1979-1999**
Total employment, full and part-time, including self-employment, by place of employment, from BEA Regional Accounts Data.

**1.6 The Geography of Manufacturing Employment, 1999**
Calculated from the BEA, Regional Accounts Data, Local Area (County) Personal Income Series

**1.7 The Geography of Farm Employment**
Same as 1.6.

## *Chapter 2*

### Tables

**2.1 Median Hourly Wage: Iowa and Peers, 1979-1999 (in 1999 dollars)**
EPI (calculations from Current Population Survey). Includes wage and salary workers age 18 and over.

**2.2 20th Percentile Wage: Iowa, U.S., and Peers, 1979-1999 (in 1999 dollars)**
Same as 2.1.

**2.3 80th Percentile Wage: Iowa, U.S., and Peers, 1979-1999 (in 1999 dollars)**
Same as 2.1.

**2.4 Share of Workers Earning Below the Poverty Level Wage: Iowa, U.S. and Peers**
EPI.

**2.5 Growth in Non-farm Wage and Salary Employment in Iowa, 1979-1999**
Employment data are from the BEA Regional Accounts Data, wage and salary employment, by place of work. Weekly pay is from the Bureau of Labor Statistics, ES202 data (Covered Employment and Wages) and includes all workers covered by unemployment insurance.

**2.6 Median Hourly Wage for the 40 Largest Non-Supervisory Occupations: Iowa and the U.S., 1999**
BLS Occupational Employment and Wage Series.

**2.7 Projected Job Growth in Iowa, 1998-2008**
Job projections are from IWD; these projections are the most recent available, and in fact were just completed in May 2001. The projections were based on a 1998 survey of employers. Projections based on the 2000 survey will not be available until 2003. Corresponding wage rates are from 1998 BLS State Occupational Employment and Wage Estimates. Since the occupational classification system changed in 1999, it is not possible to match the 1998 occupational projections with more recent wage data. Teachers' wage rates are based on mean annual pay, assuming teachers are paid for 42 weeks per year.

**2.8 Women's Labor Force Participation and Wages, Iowa and Peers, 1998**
Institute for Women's Policy Research, *The Status of Women in the States 2000*, appendix. The appendix and some summary data is available on their web site at www.iwpr.org/states/

**2.9 Occupational Segregation and Wages in Iowa, 1998**
Adapted from Iowa Commission on the Status of Women, *Status of Iowa Women Report 2000*, page 25. Averages are weighted by Iowa employment in each occupation.

**2.10 Median Weekly Earnings (U.S.) by Union Affiliation, 1999**
This index of the "union advantage" is from the Labor Force Statistics series of the Current Population Survey, BLS.

**2.11 Selected 1999 Wage Percentiles, Ranked by Right-to-Work Status and Union Density: Iowa and its Peers**
Wage percentiles are calculated by EPI (see "state and regional data" on the EPI website). Union density is from the BLS report, "Union affiliation of employed wage and salary workers by state, 1999," available in the Labor Force Statistics series of the Current Population Survey.

## Figures

**2.1 Average Annual Pay in 1999: Iowa, U.S., and Peers**
Annual pay is from the BLS "Covered Employment and Wage" series, available at the BLS web site. It is an average for all employees covered by unemployment insurance.

**2.2 Average Annual Earnings in Iowa and its Region as a Percent of National Average, by Major Occupational Group, 1999**
Figures for the region represent the average pay among the peer states. State occupational wages are from the 1999 State Occupational Employment and Wage Estimates of the BLS, using the new (1999) Standard Occupational Classification System (SOC). The SOC system uses 22 major occupational groups from the SOC to categorize workers in one of almost 770 detailed occupations. State wages are presented as percentages of national averages, using the corresponding National Occupational Employment and Wage Estimates.

**2.3 Selected Annual Professional Incomes: Iowa, U.S., and Regional Average, 1998**
Adapted from "Selected Occupational Wages" as reported in Iowa Workforce Development, *Condition of Employment 2000: Dawn of New Century* (Des Moines: Iowa Workforce Development, Labor Market Information Division, 2000). Available as a PDF file at the IWD website.

**2.4 The Rural Income Gap: Annual Per Capita Personal Income in Rural and Metropolitan Iowa, 1969-1999 (1999 dollars)**
Rural and metropolitan wages are calculated from BEA Regional Accounts Data, Local Area Personal Income, "Personal Income and Per Capita Personal Income by County, 1996–98." For these purposes, the general concept of a metropolitan area is that of "a geographic area consisting of a large population nucleus together with adjacent

communities having a high degree of economic and social integration with the nucleus." Outside the heavily-urbanized Northeast, metropolitan areas consist of metropolitan statistical areas (MSA's) and more expansive primary metropolitan statistical areas (PMSA's). These statistical areas cross state boundaries; a county might be considered "metropolitan," for example, if it is adjacent to an urban center in another state. For Iowa, seven cities and their surroundings make up the state's "metropolitan" regions: Cedar Rapids, Davenport-Bettendorf-Moline-Rock Island, Des Moines, Dubuque, Iowa City, Omaha, and Waterloo-Cedar Falls.

## *Chapter 3*

### Tables

**3.1 Average Incomes of Iowa Families, Late 1970s to Late 1990s**
Analysis of data from the U.S. Census Bureau's Current Population Survey, as reported in *Pulling Apart: A State-by-State Analysis of Income Trends*, issued by the Center on Budget and Policy Priorities and the Economic Policy Institute, Washington, D.C., 2000.

**3.2 Median Income of Four-Person Families, Iowa, Peer States, and U.S.**
This data is provided in current dollars on the U.S. Census web site. Figures were converted to 1999 dollars using the Consumer Price Index (CPI-U-X1).

**3.3 Three-year Average Poverty Rates: Iowa, Peer States, and the U.S.**
The three-year average rates are based on the Current Population Survey and were taken from the U.S. Census web site, last revised Feb. 2, 2001. The four time periods chosen represent the two peaks and the two troughs in the U.S. poverty rate over the period 1980-1999.

**3.4 Poverty Rates among Population Groups in Iowa and the U.S.**
Data for 1989 are from STF1C of the 1990 decennial census and were obtained from the census lookup feature of the U.S. Census web site. The U.S. data for 1999 are from the report *Poverty in the United States, 1999*, Current Population Reports P60-210, September, 2000, available in PDF format from the U.S. Census web site.

**3.5 Poverty Thresholds, 1999**
Official poverty thresholds can be found in many places, including the poverty page at the U.S. Census web site.

**3.6 The Working Poor in Iowa, 1996-1998**
Center on Budget and Policy Priorities, *The Poverty Despite Work Handbook 2001* (Washington, D.C.: forthcoming in April or May 2001). Data in that report are tabulations of the Census Bureau's Current Population Survey, March Supplement, 1998, 1999 and 2000. All figures are three year averages based on income and work in 1997, 1998 and 1999.

**3.7 Characteristics of Iowa Workers by Wage, Projected for 2002**
The figures were provided by the Economic Policy Institute, which conducted an analysis of Current Population Survey data, Outgoing Rotation Group files, for Iowa, 1999 and 2000. The estimates are of the number of workers who would still be earning a given wage as of 2002. The year 2002 was selected in order to illustrate the effects of the policy when the full $1.00 increase in the minimum wage would have taken place. Slightly over 100,000 workers earned between $5.15 and $6.14 in 1999-2000.

### Figures

**3.1 Average Income of Fifths of Families in Iowa and the U.S. (1997 dollars)**
Analysis of data from the U.S. Census Bureau's Current Population Survey, as reported in *Pulling Apart: A State-by-State Analysis of Income Trends*, issued by the Center on Budget and Policy Priorities and the Economic Policy Institute, Washington, D.C., 2000.

**3.2 Shares of Income Earned by Each Fifth of the Population in Iowa**
Same as 3.1

**3.3 Median Income of Four-Person Families: Iowa and U.S., 1974-1999**
This data is provided in current dollars on the U.S. Census web site. Figures were converted to 1999 dollars using the Consumer Price Index (CPI-U-X1).

**3.4 Poverty Rates in Iowa and the United States, Three-Year Averages, 1980-1999**
The three-year average rates are based on the Current Population Survey and were taken from the U.S. Census web site, last revised Feb. 2, 2001.

**3.5 Poverty Rates in Iowa Counties, 1997**
Estimates of the poverty rate in each county are from the Census Small Area Income and Poverty Estimates, available on the U.S. Census web site.

**3.6 The Real Value of the Minimum Wage, 1970-2000**
The nominal value of the federal minimum wage by year from BLS. The nominal values were converted to year 2000 dollars using the CPI-U-X1.

## *Chapter 4*

### Tables

**4.1 Growth, Wages, Unionization, and Tax Burdens in the 1990s: Iowa and Peer States**
Population growth and estimated domestic migration are from U.S. Census. Growth rate in state personal income is from the BEA. Median hourly wage is from EPI (*The State of Working America, 2000-2001*, page 348.) Union density is the percentage of employed wage and salary workers who belong to a labor union; this data comes from Labor Force Statistics series of the Current Population Survey, BLS. State and local taxes as a percent of state personal income is from the 1997 Census of Governments, U.S. Census.

# *Appendix*

## Tables

**A.1 ACCRA Cost of Living Index, Third Quarter, 2000: Cities in Iowa and Peer States**
*ACCRA Cost of Living Index*, ACCRA, Arlington, Virginia; produced quarterly.

**A.2 Comparison of Cost of Living Indexes**
The first index is from Kathleen Short, U.S. Census Bureau, "Where We Live: Geographic Differences in Poverty Thresholds," paper presented at the annual meeting of the Society of Government Economists, New Orleans. January, 2001. The second is an adjustment by the authors of Short's index. The third is an index constructed by the authors using median rents from the U.S. Housing and Urban Development Fair Market Rent data, available on their web site. The fourth index simply takes the ACCRA index for the median city in each state from the Table A.1. The last index is from Herman Leonard, Jay Walder, and Jose Acevedo, "The Federal Budget and the States: Fiscal Year 1998," December 9, 1999, available at: http://www.ksg.harvard.edu/fisc98/.

**A.3. Adjustment of Wages for Cost of Living Differences: Iowa and Peer States**
Hourly wage: see notes to Table 2.1. This wage was divided by the authors' median rent index, the median ACCRA index, and the Leonard-Friar index to arrive at the adjusted wages in the remaining columns.