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Labor Supply in Iowa: Policies for Economic Growth

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Comments
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LABOR SUPPLY IN IOWA

POLICIES FOR ECONOMIC GROWTH

PREPARED BY THE UNIVERSITY OF IOWA PUBLIC POLICY CENTER IN CONJUNCTION WITH THE IOWA BUSINESS COUNCIL WITH SUPPORT BY THE NORTHWEST AREA FOUNDATION
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Policies For Economic Growth

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March 1991
LABOR SUPPLY POLICIES FOR ECONOMIC GROWTH

The authors gratefully acknowledge the insights provided and sincere interest exhibited by members of the Project Advisory Committee, formed by the Iowa Business Council to advise on the issues this report addresses.

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Marci Lindsay and Bill Sirois, graduate research assistants, assembled economic and employment statistics, entered data, and constructed charts and appendixes. Pyeong-Tak Nahm and Sue Green, also graduate research assistants, carried out analyses of labor costs and wage rates. Several staff at the Department of Employment Services and the Department of Education assisted in the acquisition of numerous data. Barbara Yerkes edited the entire report.

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<td>Hon Industries, Inc.</td>
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**Forecasting Labor Demand/Supply**

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In April, 1990, the Public Policy Center of The University of Iowa was commissioned by the Iowa Business Council to study the dynamics of Iowa's labor market, consider whether a labor shortage is likely in the future, and identify private and public sector actions for increasing labor supply to the state's employers. Members of the Iowa Business Council are concerned that appropriate strategies be formulated now to avert labor shortages in coming years.

To carry out a thorough study of this complex issue, close collaboration was needed between faculty researchers and various professionals with practical insights into labor needs and supply. A Project Advisory Committee comprised of public and private sector leaders was formed by the Iowa Business Council to work with the research team throughout the project. This committee, in turn, organized six subcommittees to examine in detail key factors that affect the supply of labor to Iowa employers. The collective insights gained by the university research team, the Project Advisory Committee, and its subcommittees form the basis for what is presented in this report.

A Northwest Area Foundation grant to the Public Policy Center supported most of the direct costs of the project. This four-year grant is intended to facilitate the establishment of a continuing partnership between faculty at The University of Iowa and leaders in the state from the private and public sectors in addressing important policy topics.
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EXECUTIVE SUMMARY  

Many see the United States as being in transition from a labor surplus economy in the 1970s and 1980s to a labor shortage economy in the 1990s. In the coming decade, demographic trends imply that the U.S. workforce will age and that fewer young people will be entering the workforce than in the past. Barring greatly increased immigration, the U.S. labor force will grow more slowly over the next decade than it has during the past two decades. An increasing share of the U.S. labor force will be women and members of racial and ethnic minorities, and an increasing share of jobs will require relatively high education and skill levels. There is growing concern that the education and training of entrants to the labor force has not been keeping pace with the increasing demand for skilled workers.

STUDY OBJECTIVES  
Numerous studies have analyzed how these labor force trends may affect the nation's economic growth. As they affect national growth, these trends may also affect the economies of states and regions. However, state and regional effects need to be analyzed separately from national effects. That analysis is the task of this study, which has three broad objectives:

• to document and explain the dynamics of the Iowa labor market over the past two decades, focusing on the factors that influence the supply of labor to Iowa employers;  
• to consider whether a shortage of qualified workers is likely to limit growth of the state's economy; and  
• to identify private and public sector strategies for increasing labor supply to the state's employers.  

As we have pursued these tasks, we have reviewed related studies, examined an array of published data, and analyzed unpublished survey data collected by the U.S. Bureau of Census. In defining the scope of the study and the emphases of this report, we have consulted with the study’s Advisory Committee and relied heavily on the observations and suggestions of its members. In particular, we have been guided by and have drawn upon subcommittee reports dealing with the following topic areas: fringe benefits, education and training programs, work options, hiring and recruitment, forecasting labor demand and supply, and labor supply factors in decisions of businesses to locate in an area. The input of these subcommittees has been incorporated throughout the report. The study has therefore been a collaborative undertaking of the research staff, the advisory committee,
and the various subcommittees. The results are summarized below and presented in greater detail in the chapters that follow.

LABOR SUPPLY AND GROWTH: WHAT HAS BEEN LEARNED?

The central conclusion of this study is that Iowa's economic growth over the next decade or so will not be limited by the labor supply available. Instead, because products, population, and capital move freely across state borders, Iowa's growth will be determined in the 1990s, as in the past, by growth in the demand for the products that it has a comparative advantage in producing. Also in line with past experience, Iowa's labor force will be molded through migration to meet the demand for labor in the state. Since the availability of workers, their skills, and labor costs are key factors in determining business location and growth, this study has important implications for state and local economic development authorities, individual employers, and business associations interested in broadening the state's business and industrial base.

If current projections prove correct, the U.S. labor force will grow more slowly in the 1990s than it did in the previous two decades. As a result, wages and benefits may increase more rapidly nationwide in the 1990s than they have since 1975. Rising wages will in turn provide incentives for a number of adjustments. They will trigger increased investment in human and physical capital aimed at increasing labor productivity and substituting physical capital for labor. They will lead employers to adjust the workplace organization and terms of employment (compensation, work options, working conditions) to accommodate the changing character and diversity of the working age population. They will strengthen the current incentives to locate production in low wage countries. And they will increase pressure for a more liberal U.S. immigration policy.

Whatever the overall effects of these adjustments, Iowa employers will be able to hire, at nationally determined wage and benefit levels, the number and quality of workers that they need. Increasing labor scarcity will be signalled primarily by increases in labor costs rather than unavailability of workers, although temporary spot shortages may occur from time to time. Labor cost increases will be shared by employers in other states; slower growth of the national labor force will not put Iowa employers at a comparative disadvantage. In fact, Iowa employers may have an advantage in competing in a tight labor market, since there has been out-migration of workers from Iowa throughout the twentieth century. Iowa employers do not have to induce workers to move to Iowa from other states; they merely have to induce them to remain in the state.
QUALITY OF LIFE, AMENITIES, AND LABOR SUPPLY

Labor supply is important to individual businesses because it determines the costs of hiring workers with specific skills and abilities. When labor supply increases, labor costs decrease; conversely, when labor supply decreases, costs increase. These include the costs of recruiting and screening workers as well as the costs of fringe benefits, wages, and salaries. Labor costs reflect the compensation that workers with specific skills can command for a particular type of work, but they also reflect working conditions and other terms of employment: work options, job security, job-related training and educational opportunities, and opportunities for advancement. Labor costs also depend, and importantly so, on the “amenities” of the communities in which workers live, the factors that affect their cost of living and quality of life: the purchasing power of their wages, the taxes they pay, the quality of schools and other public services, cultural and recreational opportunities, the climate, and environmental quality, for example. The amenities available in the place of employment affect job choices and labor supply just as surely as do the terms of employment.

Businesses in low amenity areas must pay higher wages and benefits than businesses in high amenity areas to attract workers with given skills and abilities. Indeed, if an area’s amenities are sufficiently poor, some businesses may be unable to operate there because of prohibitively high wage costs. The relatively high wages paid to workers in Alaska illustrate strikingly how lack of amenities affects labor costs. The additional amounts that businesses in low amenity areas have to pay are called “compensating wage differentials.” These differentials are not attributable to characteristics of workers; instead, they are adjustments for interstate differences in such factors as cost of living, climate, taxes, and public services. Businesses in low amenity areas face labor cost disadvantages measured by these compensating wage differentials. For businesses to remain in low amenity areas, their labor cost disadvantages must be offset by other cost advantages.

There is little reason to expect that Iowa employers will have to pay such compensating wage differentials during the coming decade, and therefore little reason to suppose that Iowa employers will be at a disadvantage vis-à-vis employers in other states. Quite the contrary. Iowa seems to have amenities, especially in the cost of living and the quality of public services, that give it a labor cost advantage over locations in some other rapidly growing states.

LABOR MARKET TRENDS

Recent trends in the employment, earnings, and migration of Iowa workers show that the Iowa economy is highly integrated into the national economy.
During the 1970s, employment grew more rapidly in Iowa than in the nation as a whole, in response to wages that also grew slightly faster than the national rate. In the 1980s, employment and wages grew more slowly than the national average, although some statistics for the past two years show the Iowa economy moving more in line with the national economy. These trends do not indicate that economic growth in the state has been limited by the availability and cost of appropriately qualified labor. Instead, the expansion of the Iowa economy during the 1970s and its contraction during the 1980s reflected underlying trends in the demand for products which Iowa has a comparative advantage in producing.

**Employment**

Since the mid-1970s, Iowa’s working age population has remained fairly stable at about 2.1 million, while the number of people in the labor force and the number employed have both increased. Iowa's labor force participation rate, which is the percentage of the working age population that is either working or available for work, is now higher than the national average and higher than it has usually been in the past. At the same time, Iowa's labor force is less fully utilized today than it was in the 1970s. Both unemployment and involuntary part-time employment were higher in 1990 than in 1979, and they have increased as a result of the current recession.

The distribution of Iowa’s nonagricultural employment across industries has shifted in important ways since 1965. The service sector has had the greatest increase, the manufacturing sector the greatest decrease. These shifts parallel changes at the national level. From 1965 to 1989, the share of nonagricultural employment in manufacturing dropped from 29.7 percent to 18.0 percent in the nation and from 25.6 percent to 19.1 percent in Iowa. For the same period, the share of employment in the service sector increased from 14.9 percent to 24.8 percent in the nation and from 14.3 percent to 21.6 percent in Iowa.

**Wage Rates and Incomes**

Throughout the 1980s, the purchasing power of the average hourly earnings of production and nonsupervisory workers declined in most sectors of the Iowa economy. In 1990, average hourly earnings in all sectors were below the peak levels reached in the 1970s. In all sectors except manufacturing, average real (inflation adjusted) hourly earnings are lower today in Iowa than in the nation as a whole.

During the 1970s, earnings in Iowa increased relative to national earnings, but since 1981 Iowa workers have lost ground on average relative to workers in other states. These wage trends suggest the Iowa labor market was some-
what "tighter" than the market in the nation as a whole in the 1970s but not in the 1980s. Wages in Iowa have tended to increase relative to wages in the nation as a whole when unemployment has been relatively low in Iowa (as it was in the 1970s) and to decrease when unemployment has been relatively high in Iowa (as it was in the 1980s). Wage trends may also reflect changes in amenities, workers' productivities, and industry mix.

**Migration and Labor Mobility**

Since labor supply conditions in a small state such as Iowa depend upon the movement of workers between it and other states, we have developed and interpreted information on the number of such workers, their earnings, education, occupations, and age. We find that workers are mobile: they move in substantial numbers between Iowa and other states. This mobility means that there is no fixed Iowa labor force from which Iowa employers must meet their labor needs; the supply of labor to Iowa employers is not determined by the number and characteristics of the state's current workforce. Instead, the size and skills of Iowa's labor force and their occupational and industrial mix adjust over time to labor demands.

Although Iowa's total population has been relatively stable, the set of workers employed in the state has been changing continuously. During the 1980s, the one-year turnover rate for Iowa workers averaged over 6 percent. In each year, on average, slightly less than 3 percent of Iowa's labor force had moved into the state within the preceding year, and slightly more than 3 percent of the labor force moved out of Iowa to other states. Workers in virtually all occupations and industries moved between Iowa and other states. Turnover rates were higher for executive, technical, and professional employees than for workers in relatively low paying occupations and industries, but the differences were not large.

This mobility occurred in both good times and bad. From 1975 to 1980, Iowa's economy was booming; from 1982 to 1989, the state economy was first suffering and then recovering from a severe recession. Even though fewer workers moved into the state during the less prosperous 1980s, the occupational distribution of migrating workers was quite similar during the two periods. For 1980–85 the in-migration rate was about 5 percent and for 1975–80 about 9 percent; the out-migration rate for both periods was about 11 percent.

Those entering and leaving the state workforce were quite similar in education and age, but both groups were on average younger and better educated than the total population of workers within the state. Incomes were on average substantially lower for those entering Iowa than for those
Workers of All Types Move

Occupational Group

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<td>Machine Operators, Assemblers, andInspectors</td>
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<td>Transportation and Material Moving Equipment</td>
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<td>Precision Production, Craft, and Repair</td>
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<td>Farming, Forestry, and Fishing</td>
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Percentage of Workers in Each Occupation Who Moved, Annual Average, 1982-89

leaving. More than one-half (52.6 percent) of those leaving Iowa moved to one of five states: Illinois, Minnesota, Missouri, Nebraska, and Texas. Almost one-half (46.7 percent) of those moving into Iowa came from one of 6 states: California, Minnesota, Missouri, Nebraska, New York, and Texas.

**Educational Outcomes**

It is generally acknowledged that education at the elementary, secondary, and post-secondary levels is an important determinant of the skills and abilities of the workers entering the labor force each year. A question that is increasingly raised is whether educational institutions are adequately preparing young people to be productive workers. By the broad measures typically used to evaluate educational institutions, however, there is no evidence of decline in performance, especially in Iowa; if anything, these new workers are better educated than in years past. In the past two decades, the performance of Iowa’s public school system, as measured by dropout rates, standardized test scores, and the percentage of high school graduates who pursue post-secondary education, has either been stable or shown improvement. Similar data for the nation as a whole also indicate that the educational attainment of entrants to the U.S. labor force is stable or increasing. Nationally, high school graduation rates have been stable for the past 25 years, and the fraction of high school graduates who go on to college has been increasing.

These statistics do not mean, of course, that new workers should not be better prepared than they are. But the data do forestall a conclusion that the quality of education received by new workers has declined or that any such decline has created a mismatch between workers’ abilities and the requirements of the modern workplace. Further, it is difficult to escape the conclusion that the nation’s labor force would be much more productive if all states were to perform as well as Iowa in preparing individuals for entry into the labor force and in upgrading the skills of those already there.

**POLICY OPTIONS**

A number of actions hold promise of increasing labor supply, workers’ productivity, and workers’ incomes. If undertaken in a single state, these policies would have little overall effect; if undertaken in all states, the effects could be significant. Iowans can act both to “do their share” and to set an example; action here may encourage action elsewhere.

**National Policies To Increase Labor Productivity**

Because labor is mobile, any factor that increases the national rate of participation in the labor force or promotes the productivity of the U.S. working age population as a whole also increases labor supply to employers in Iowa. That is, each state’s labor supply—the number and productivity
Movers are Younger and Better-Educated

- **Median Age**
  - All Iowans
  - New Iowans
  - Ex Iowans

- **Median Highest Grade Completed**
  - All Iowans
  - New Iowans
  - Ex Iowans

- **Median Weekly Income**
  - All Iowans
  - New Iowans
  - Ex Iowans

of workers available at a given compensation cost—depends on private and public sector decisions made by individuals and governments throughout the nation. Iowans can therefore act to increase the state’s labor supply by calling for and supporting national policies to increase the productivity of the nation’s current and future workforce and the efficiency with which it is used. Promoting such policies is one of the more important means by which the citizens of any state can try to increase its labor supply.

**Improve and Advertise Iowa’s Amenities**

Iowa’s state and local governments can have an important effect on labor supply by maintaining and improving the amenity value of living in Iowa communities. To accomplish this, governments must provide public services that are both high in quality and cost effective. Public services and infrastructure—education, police and fire protection, parks and recreational facilities—and the taxes that workers pay to support them are the most important of the *controllable* factors that affect the wage at which workers will work in Iowa.

The quality of public education a state provides is an especially important amenity factor, one that affects the willingness of workers to live and raise children in that state. Thus Iowa’s public education affects labor supply in two ways: by increasing the productivity of current and future workers and by increasing the value to workers of working in Iowa. Controlling the costs of government and preventing overlap of government activities is also important to the amenity value of a job in Iowa. The taxes that workers pay to support services must not exceed the value those services have for workers.

Workers may have incomplete information about the amenities of the various states in which they might work. There is, consequently, a major publicity and advertising challenge in informing and convincing others of the amenity value of Iowa locations. State government could help with such publicity. In particular, the Department of Employment Services could, in publishing information on job openings, advertise to out-of-state workers the amenity value of working in Iowa. It could also develop means of providing information about Iowa to workers—managerial, technical, and professional—who typically do not use the Department of Employment Services in their job searches.

**Education and Training**

Iowa’s publicly funded programs for educating and training workers have no apparent gaps that call for new programs. The state may need, however, to better inform potential clients that such programs are available, and it
Iowa High School Graduates Continue in Education

Source: Bureau of Instruction and Curriculum, 1990, Iowa Guidance Surveys, Des Moines, IA: Iowa Department of Education
should continuously evaluate existing programs, in order to improve their
effectiveness and reduce duplication and overlap of activities. However,
without an in-depth study and comparison of programs, it is neither possible
nor appropriate to suggest revamping programs or creating new ones.

Programs to expand labor supply through public education and training
may in the short run increase the supply of labor to Iowa employers, but
over time that increase will be exported, because of labor mobility, to the
benefit of employers in other states. The well-documented outflow of Iowa
college graduates demonstrates that educating and training individuals in
Iowa does not insure that they will be employed in the state. However,
in public discussion of education and training policy, the implication of
this outflow has not been made clear: it lessens the effectiveness of general
education and training as means of increasing the quality of the labor force
and the incomes of workers within the state. The benefits of such programs
cannot be captured and retained within the state that undertakes the invest­
ment, and states should not expect the fruits of their individual actions
to accrue mainly within their borders. The education and training efforts
of a single state, especially a small state such as Iowa, have only a minor
effect on that state's and the nation's labor supply; collectively, the actions
of all states largely determine the skills and productivity of the nation's labor
force.

Nor is it well understood that, the more successful efforts are to upgrade
workers, the more difficult it will be for employers to hire low-skill workers.
Education and training programs that upgrade workers' skills will increase
the supply of skilled workers relative to the supply of unskilled and will
reduce wage differentials across skill classes. Employers hiring entry-level
and relatively unskilled workers may therefore see their wage costs rising
and the abilities of entry-level workers declining. This outcome should not
be taken as evidence that education and training institutions have failed;
rather it is evidence of their success.

The primary goal of Iowa's public educational institutions has been and
should be to provide Iowans with the general education and basic skills
that they need to be productive and self-supporting citizens wherever they
reside. In this manner, education adds to the national labor supply, and
it may increase the quantity and quality of labor available to Iowa employers.
But labor supply effects should not be the basis either for allocating resources
to public education or for gauging its success; the outflow of educated
people from Iowa should not be taken as evidence that the citizens of Iowa
are realizing a poor return on their investment in education.
Work Options and Terms of Employment

Iowa's employers clearly recognize that their labor costs and the stability and flexibility of their workforce can be affected by terms of employment other than wages: work options, working conditions, fringe benefits, job security, and opportunities for on-the-job-training and advancement. By adjusting these nonwage terms of employment, firms may be better able to attract and retain workers. There may be some scope for public policy to provide information, especially to small employers, about these tools for recruiting and retaining workers. However, not all employers should make use of particular work options and fringe benefits; decisions about the use of these tools must be made by individual employers.

There are barriers or disincentives to the use of some work options. But there are also reasons for what appear to be arbitrary disincentives to particular options, such as job sharing. All that can be said by way of a general prescription is that the effects and desirability of such disincentives should be reviewed. Candidates for review are the unemployment compensation tax and the implicit tax by which Social Security benefits to retirees are reduced when their annual earnings exceed a specified amount (in 1990, $9360 for persons aged 65–69).

Labor Force Utilization

Public assistance in job search may increase labor force utilization—that is, it may decrease unemployment, underemployment, and mismatch of workers and jobs. Such assistance lowers the costs that in-state and out-of-state workers incur in finding out about Iowa job openings. It may also increase mobility between states. Improving information about jobs available in other states could increase out-migration in periods of recession, but it would also help to ensure that Iowa employers do not face higher costs than employers in other states during periods of expansion.

Iowa's Department of Employment Services is currently providing assistance in a variety of forms. These efforts and its plans to increase access to its services by working with schools, community colleges, and vocational rehabilitation centers are very appropriate. It is both possible and desirable for the government to provide more accurate and timely information, more widely disseminated to both workers and employers, on labor market conditions—wages, fringe benefit practices, use of various work options and workplace organizations, number and nature of job vacancies, number and qualifications of job seekers. The Department of Employment Services is working toward these goals.

Recent experiments suggest that implementing a "reemployment bonus plan" can reduce the duration of unemployment and the cost of unem-
ployment insurance. With such a plan, unemployed workers are given a bonus ($500 in the case of a 1984-85 Illinois experiment) if they obtain a job before their eligibility for unemployment insurance expires and if they hold the job for a specified period. Workers can only be made better off by such a plan, since they always have the basic unemployment coverage. Iowa should investigate the possibility of implementing a bonus plan.

STRATEGIES AND ACTIONS

Although actions taken in a single small state such as Iowa can have only a limited effect on the supply (cost) of labor to businesses in the state, two broad strategies for enhancing labor supply appear especially promising. First, individuals and businesses in their private and public sector roles can work for cost-effective provision of public services. These services have an important influence on the quality of life in the state and therefore affect the attractiveness of the state as a place to live and work. Second, they can call for and support policies that would reduce barriers to and disincentives for labor supply and improve the health, education, and training of workers throughout the nation. Specific actions for implementing these strategies are listed below.

Call for and support state and national policies to increase the productivity of the nation’s current and future workforce.

- Support full funding of proven programs: Headstart, WIC (Women, Infants and Children), and PROMISE (Promoting Independence and Self Sufficiency through Employment). These programs are designed to improve the education, training, and health of young people (the future labor force) and of the current working age population.

Maintain and improve Iowa’s amenities and quality of life.

- Maintain the high standing of Iowa’s system of public education. Since education absorbs the greatest share of public sector resources, ongoing evaluation of the state’s elementary, secondary, and post-secondary educational institutions is called for.
- Evaluate on a continuing basis the organization, procedures, and activities of state and local governments to identify opportunities for reducing the cost of providing public services and infrastructure. In particular, there may be opportunities for reducing the overhead costs of government by consolidating governmental units, by reducing duplication and overlap of government activities, by promoting intergovernmental contracting and sharing of services, and by reducing investments in public infrastructure that serves too few people to justify its cost.
- Review local government ordinances for their effects on the cost of living, especially the cost of housing. For example, local governments should
determine whether it is possible to reduce housing costs, without compromising safety, by removing restrictions on the use of particular building materials and procedures or otherwise changing building codes, by zoning more areas for multifamily dwellings, and by allowing more units per acre.

- Iowa employers and business and civic leaders should take the initiative in efforts to improve amenities and the quality of life in their respective communities. The perception that a community is “progressive” can aid in recruiting and retaining workers, and not just in attracting business and industry.

Communicate to Iowans and to those outside the state the advantages of working in Iowa.

- In publishing information on job openings, advertise Iowa’s amenities and quality of life to in-state and out-of-state workers.
- Provide information about Iowa to workers—managerial, technical, and professional—who typically do not use the Department of Employment Services in their job searches.

Work to change national and state policies that discourage some people from joining the labor force and prevent some businesses from employing labor efficiently.

- Reduce the implicit taxes on earnings of welfare recipients.
- Reduce the implicit taxes on Social Security recipients. A retiree’s benefits are reduced when his or her annual earnings exceed a specified amount (in 1990, $9360 for persons of age 65–69).
- Investigate the use of a reemployment bonus plan. The Iowa Department of Employment Services should determine how such a plan would affect unemployed workers and state unemployment insurance payments. In pilot programs in several other states, reemployment bonuses have shown promise of shortening the time workers are unemployed.
- Review statutes and taxes that may act as barriers or disincentives to use of some work options, such as job sharing. Candidates for review are the unemployment compensation and Social Security taxes.

Facilitate the transition from secondary school and post-secondary education to work.

- The Iowa Department of Education should on a continuing basis assess the cost-effectiveness of state-supported programs aimed at facilitating school-to-work transition. In particular, it could investigate the need and possibilities for expanding school-business partnerships that pro-
vide summer internships and work-study opportunities for secondary students.

- Business leaders should be more active in working with post-secondary educational institutions to determine whether there is need and potential for expanding their internship, cooperative education, and placement programs. They should also work to express their skill needs to public education institutions.

- The Department of Education should continue its practice, evidenced by its recent Iowa’s Community Colleges Continuing Education Impact Study, of monitoring the effectiveness of its training programs.

**Improve dissemination of information on labor market conditions and other labor-related matters.**

- The Department of Employment Services provides both workers and employers with information on wages, fringe benefit practices, various work options and workplace organizations, job vacancies, and qualifications of job seekers. It should continue its efforts to make this information accurate and timely and to make it accessible at schools, community colleges, libraries, courthouses, union halls, and vocational rehabilitation centers.

- The Department of Employment Services should, as needed, inform private and public sector employers how they could bring more nontraditional workers into the workforce. Options include innovative personnel policies such as flexible work schedules, job sharing, part-time and temporary employment opportunities, and assistance in locating and paying for child care. It should also work to reduce misperceptions that employers may have about the capabilities of nontraditional workers.

- The departments that administer programs intended to help individuals enter or remain in the labor force should determine whether potential clients are receiving accurate and timely information about those programs. Such programs include the PROMISE program, which allows welfare recipients to work and still retain medicaid benefits, and the GED (General Education Degree) program, which allows students who were unable to complete high school to do so.

- Business and civic leaders should work to increase their communities’ sensitivity to the needs of immigrant and nontraditional workers and help to develop local programs to meet those needs and to bridge language and cultural barriers.
IMPLICATIONS FOR ECONOMIC DEVELOPMENT POLICY

State policies that maintain and improve the amenities of life in Iowa can promote economic development. Iowa can have a long-term labor cost advantage only if it has relatively high quality of life and offers workers amenities such as good school systems and a healthy environment. State policies that enhance workers' well-being can also promote economic development by lowering labor costs for businesses that choose to locate in Iowa.

State efforts to attract businesses to Iowa can deter development if they also reduce the returns of working in Iowa. Some policies appear to promote economic development because they increase the return to capital located in Iowa. These policies can increase labor costs and therefore be counterproductive if they simultaneously reduce the return to labor by increasing workers' taxes and by reducing the quality of public services that are important to workers.

Labor markets are not bounded by state borders. Both the private and the public sectors must work to make the implications of this fact known. In particular, the number and characteristics of Iowa's unemployed are not good indicators of the labor pool available to employers who wish either to locate new operations or to expand existing operations in Iowa. Also, because labor is mobile, the supply of labor to Iowa employers adapts to demand, and the amenities of life in Iowa can translate into long-run labor cost advantages for businesses located here.

Business climate rankings are not accurate interstate comparisons of business costs. In particular, the average wage paid to currently employed workers is not a good indicator of the wage that a business locating or expanding in the state would have to pay. The fact that Iowa's average manufacturing wage remains somewhat above the national average does not mean that an employer locating manufacturing operations in Iowa would face above-average labor costs.
CHAPTER 1
INTRODUCTION

Many see the United States as being in transition from a labor surplus economy in the 1970s and 1980s to a labor shortage economy in the 1990s. In the coming decade, demographic trends imply that the U.S. workforce will age and that fewer young people will be entering the workforce than in the past. Barring greatly increased immigration, the U.S. labor force will grow more slowly over the next decade than it has during the past two decades. An increasing share of the U.S. labor force will be women and members of racial and ethnic minorities, and an increasing share of jobs will require relatively high education and skill levels. There is growing concern that the education and training of entrants to the labor force has not been keeping pace with the increasing demand for skilled workers.

Numerous studies have analyzed how these labor force trends may affect the nation's economic growth. As they affect national growth, these trends may also affect the economies of states and regions. However, state and regional effects need to be analyzed separately from national effects. That analysis is the task of this study, which has three broad objectives:

• to document and explain the dynamics of the Iowa labor market over the past two decades, focusing on the factors that influence the supply of labor to Iowa employers;
• to consider whether a shortage of qualified workers is likely to limit growth of the state’s economy; and
• to identify private and public sector strategies for increasing labor supply to the state's employers.

Since the labor supply in a small state such as Iowa depends upon the movement of workers across its borders, we have developed and interpreted information on the number of such workers, their earnings, education, occupations, and age. We find that workers are mobile: in both good times and bad, they move in substantial numbers between Iowa and other states. This mobility means that there is no fixed Iowa labor force from which Iowa employers must meet their labor needs; the supply of labor to Iowa employers is not determined by the number and characteristics of the state's current workforce. Instead, the size and skills of Iowa's labor force and their occupational and industrial mix adjust over time to labor demands.

More important, workers' mobility means that, to the extent that labor becomes more scarce over the coming decade, Iowa employers will not
be at a disadvantage relative to employers in other states. Slower growth in the national labor force may lead to increases in labor costs for Iowa employers, but the increased costs would be borne by employers in other states as well. Iowa employers will be able to hire the number and quality of workers that they need at wage and benefit costs similar to those they would incur in hiring similar workers in other states.

In sum, Iowa's economic growth will not be constrained by the size and characteristics of its current workforce. Instead, its growth in the 1990s will be determined, as it has been in the past, by the growth in demand for products that Iowa has a comparative advantage in producing. And, also in line with past experience, Iowa's labor force will be molded through migration to meet the demand for labor in the state.

The data and analysis that are the basis for this conclusion are presented in Chapters 2 and 3. Chapter 2 deals with labor market dynamics since 1970. It documents trends in Iowa employment and earnings and compares them to national trends. These trends help answer a number of questions about the Iowa economy. How has the distribution of employment by industrial sectors and occupations changed? To what extent has employment shifted from high-wage to low-wage sectors, from high-wage to low-wage occupations? To what extent has employment shifted from full-time toward part-time positions? Have average real wages and annual earnings decreased for all workers, for workers in particular industries and occupations, and for workers in particular income classes—for example, workers in the bottom deciles of the wage distribution? Has the Iowa labor force been underutilized?

Chapter 3 addresses in detail a question of considerable concern to Iowa business leaders: will a shortage of qualified workers act as a drag on economic growth in Iowa over the next decade or so? It analyzes how labor markets work in the highly integrated U.S. economy and concludes that economic growth in Iowa will not be limited by an absolute restriction on the number of workers available to Iowa employers. The real question, then, is whether and how rapidly labor costs are likely to increase. Chapter 3 also identifies private and public sector policies for fully utilizing and expanding the labor force available to Iowa employers.

Chapter 4 describes briefly the main public education and training programs available in Iowa; an appendix provides more detail. These programs aim to increase the number of persons who have basic workplace skills and are therefore able to enter the labor market. Successful programs increase the supply of well trained and skilled workers relative to the supply
of poorly trained and unskilled workers; they may therefore lower the cost of skilled labor relative to the cost of unskilled labor.

Chapter 5 is a summary of policy options. It identifies a number of actions that hold promise of increasing labor supply and increasing workers’ productivity and incomes. The options discussed are broad strategies rather than detailed policies.

In carrying out this study, we have reviewed related studies, examined a wide array of published data, and extensively analyzed unpublished survey data collected by the U.S. Bureau of Census. In setting out both the study's scope and the organization and emphases of this report, we have consulted with the study's Advisory Committee and relied heavily on the observations and suggestions of its members. In particular, we have been guided by and have drawn upon subcommittee reports dealing with the following topic areas: fringe benefits, education and training programs, work options, hiring and recruitment, forecasts of labor demand and supply, and labor supply factors in business location decisions. The input of these subcommittees has been incorporated throughout the report. The study has therefore been a collaborative undertaking involving the research staff and persons serving on the advisory committee and the various subcommittees.
CHAPTER 2
WAGE AND EMPLOYMENT TRENDS

This chapter describes recent trends in employment, earnings, and workers' living standards in Iowa, comparing these trends to national trends. This description supports the analysis in Chapter 3, which shows how the supply of labor to Iowa employers is determined by and linked to the national supply. Together, Chapters 2 and 3 help answer the question of whether labor supply factors may constrain Iowa's economic growth. Appendix A contains additional statistics.

EMPLOYMENT

Since the mid-1970s, Iowa's working age population has remained fairly stable at about 2.1 million, while the number of people in the labor force and the number employed have both increased (Figure 1). The rate of participation in Iowa's labor force and Iowa's employment rate have therefore increased, as Figure 2 reveals. The labor force participation rate, which is the percentage of the working age population that is either working or available for work, decreased somewhat from 1980 through 1984, but it never fell below the national rate; it is now higher than the national rate and higher than it has usually been in Iowa in the past.

The fraction of workers who work part time voluntarily has been consistently higher for Iowa than for the nation, averaging slightly more than 20 percent over the past 15 years (Figure 3). Involuntary part-time employment (part-time employment of those who wish to be employed full-time) increased during the recession years of the early 1980s. The unemployment rate also increased during those years, so that the underemployment rate (the percentage unemployed plus the percentage employed part time involuntarily) increased from a low of 5.9 percent in 1976 to a high of 14.1 percent in 1983. This underemployment rate, a measure of the extent to which workers are not working as much as they would like, has since declined to 9.1 percent, but it remains higher than in 1979. The fraction involuntarily employed part time in Iowa is now higher than the fraction for the nation as a whole, although it was lower before 1980 (see Appendix Figure A-1). Iowa's labor force thus remains underutilized by historical standards.

1 The "working age population" is defined as those 16 years and older; it includes those older than 65 years because they are often productive members of the labor force.
Figure 1

Figure 2
Iowa's Labor Force Participation Rate and Employment Rate, 1976-89
WAGE RATES AND INCOMES

Changes in the wages earned by workers in Iowa must be adjusted for changes in the purchasing power of these wages, to allow for inflation; they must also be compared to changes in national wage rates, to allow for overall income trends. With these adjustments made, we can draw conclusions about how workers in Iowa are faring both in an absolute sense, against inflation, and in a relative sense, against workers in the rest of the country.

Throughout the 1980s, the purchasing power of the average hourly earnings of production and nonsupervisory workers declined in most sectors of the Iowa economy (Figure 4). In 1988, average hourly earnings in all sectors were below the peak levels reached in the 1970s, with a particularly sharp decline in the construction sector.2

Iowa workers have also lost ground on average relative to workers in other states. In all sectors except manufacturing, average hourly earnings remain lower in Iowa than in the nation as a whole (Figure 5). During the 1970s,

2 These statistics overstate the decline in real incomes of Iowa workers if the average level of prices has been increasing less rapidly in Iowa than nationally, and vice-versa. However, because price indices are not available for individual states, we cannot determine whether price inflation in Iowa has on average been more or less rapid than in the nation as a whole.
Figure 4
Real Average Hourly Earnings For Selected Industries in Iowa, 1971-90

Figure 5
Real Average Hourly Earnings For Selected Industries, Iowa Relative to Nation, 1971-90

Sources: As for Figure 4, except data on national earnings from Bureau of Labor Statistics, March 1990, Employment and Earnings, Washington, DC: U.S. Department of Labor.
earnings in Iowa increased relative to national earnings, but since 1981 earnings in Iowa have declined relative to national earnings. These trends suggest that the Iowa labor market was somewhat “tighter” than the market in the nation as a whole in the 1970s but not in the 1980s. When unemployment has been relatively low in Iowa (as it was in the 1970s), wages in Iowa have tended to increase relative to wages in the nation as a whole; the opposite has been true when unemployment has been relatively high in Iowa (as it was in the 1980s). This pattern of wage adjustment indicates that the U.S. labor market is highly integrated: over time, labor costs in each state and region respond to national market conditions.

The above data on average earnings include part-time and secondary workers. But if we consider only the earnings of full-time male workers, we see a similar decline. From 1978 through 1988, the median real weekly wage of such workers decreased almost 8 percent in Iowa, but less than 1 percent in the nation as a whole. At the national level, workers’ wages became more unequal—the difference widened between the wages of high-wage (90th percentile) workers and low-wage (10th percentile) workers. Nationally, the 90th percentile wage increased almost 9 percent, while the 10th percentile wage fell about 15 percent. In contrast, in Iowa wages did not become more unequal; the 90th percentile wage and the 10th percentile wage each decreased 8 percent.

Wages and salaries account on average for about 80 percent of employers’ compensation costs, with the remaining 20 percent consisting mainly of outlays for fringe benefits. Total compensation increased more rapidly than wages and salaries until the early 1980s and somewhat more slowly since then. Iowa has remained close to the national average in fringe benefit costs (see appendix Figure A-2).

**MIGRATION AND LABOR MOBILITY**

Over the past half century, Iowa’s population has grown by slightly less than one-tenth of a percent per year on average; the total population has increased slightly in each decade except the 1980s. There has been net migration from Iowa in all decades; Iowa has been a continuing supplier of workers to the national labor market (Figure 6).  

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3 A full-time worker is defined as one who works 35 or more hours per week. The wage received by 90 percent of workers is less than the 90th percentile wage, while only 10 percent of workers receive less than the 10th percentile wage.

4 A state’s population change is the sum of two components: natural change and net migration. Natural change is births minus deaths; net migration is in-migration minus out-migration. The natural change has been positive for Iowa in all decades, while net migration has been negative. In all decades except the 1980s, net migration from the state was less than the natural increase, so that there was population growth (Table A-5). This migration is clear evidence of the mobility of the nation’s labor force. If workers were not mobile, then each state’s population growth rate would be its natural rate—its birth rate minus its death rate.
This out-migration is evidence of the mobility of Iowans; if they were immobile, population growth in each decade would have been at least as great as the natural population change. Furthermore, the pattern of Iowa's population change in recent decades is clear evidence that Iowans move in response to economic conditions: out-migration was greatest during the 1980s, when Iowa suffered its most serious recession in 50 years, and least during the 1970s when there was strong and growing worldwide demand for products produced in Iowa.

Although Iowa's total population has been relatively stable, the set of workers employed in the state has been continuously changing. During the 1980s, the one-year turnover rate for Iowa workers averaged over 6 percent. In each year, on average, slightly less than 3 percent of Iowa's labor force had moved into the state within the preceding year, and slightly more than 3 percent of the labor force had moved from Iowa to other states. For the midwest, the turnover rate averaged more than 4 percent for 1980–87 (see Appendix Table A-1).
Workers in virtually all occupations and industries move between Iowa and other states (Tables 1 and 2). 5 The numbers in the last two columns of each table indicate relative mobility, calculated as the percentage of movers divided by the percentage of the state's workers in a particular occupation or industry. A value of 100 indicates average mobility; above-average mobility is indicated by a value greater than 100, and below-average mobility by a value less than 100. By these measures, professional, technical, and sales occupations were above average in mobility; executive and administrative occupations were about average; and service and blue collar occupations were below average. Among occupations, professionals accounted for the largest share of movers; among industries, professional and related services had the largest share of movers.

Tables 3 and 4 show the average annual in-migration and out-migration rates of workers in major occupational and industrial categories. The total turnover rate is the average percentage of workers who moved either into or out of Iowa in the years sampled (1982–84 and 1986–89). Because businesses have typically recruited executive, technical, and professional employees on a regional or national basis, the relatively high turnover rates in these occupations comes as no surprise. In contrast, the fact that turnover rates are almost as high in blue collar and relatively low paying occupations and industries runs counter to commonly held views about mobility. 6 However, workers' mobility reflects their desires and efforts to improve their living standards; there is no reason to doubt that blue collar and low income workers also wish to improve the economic returns from their labor.

Among occupations, Table 3 shows that Iowa lost a relatively large percentage of technical and precision production workers through migration; it gained small percentages of workers in farming, machine operation, and unskilled labor occupations. Among industries, Table 4 shows that Iowa lost a relatively large percentage of workers in mining and entertainment (industries that employ small numbers of workers in Iowa), but also in finance, insurance, and real estate (industries that employ relatively large numbers of workers). Migration produced net gains in employment in other industries: agriculture, nondurable manufacturing, wholesale trade, and public administration. The gains and losses in Tables 3 and 4 indicate only changes due to workers moving into and out of Iowa; they do not represent the total change in employment in these industries and occupations.

5 The occupational distribution of in-migrants and out-migrants was similar for the Midwest (Table A-2).

6 Several subcommittee reports expressed the view that "nonexempt" workers are immobile; these are relatively low-wage production and clerical workers. However, the data in Tables 3 and 4 show that workers in relatively low-wage occupations and industries do move into and out of the state in significant numbers.
Table 1
Distribution by Occupation of Workers
Moving Between Iowa and Other States, 1982-89

<table>
<thead>
<tr>
<th>Occupation Group</th>
<th>Ex-Iowans Percent</th>
<th>New Iowans Percent</th>
<th>All Iowans Percent</th>
<th>Out-Migration Index</th>
<th>In-Migration Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive, Administrative, and Managerial Occupations</td>
<td>9.1</td>
<td>8.3</td>
<td>8.3</td>
<td>110</td>
<td>200</td>
</tr>
<tr>
<td>Professional Specialty Occupations</td>
<td>20.5</td>
<td>19.3</td>
<td>12.4</td>
<td>165</td>
<td>155</td>
</tr>
<tr>
<td>Technicians and Related Support</td>
<td>4.9</td>
<td>2.9</td>
<td>2.7</td>
<td>184</td>
<td>107</td>
</tr>
<tr>
<td>Sales Occupations</td>
<td>11.3</td>
<td>10.9</td>
<td>9.1</td>
<td>123</td>
<td>119</td>
</tr>
<tr>
<td>Administrative Support Occupations, including Clerical Occupations</td>
<td>14.9</td>
<td>14.2</td>
<td>14.7</td>
<td>101</td>
<td>97</td>
</tr>
<tr>
<td>Service Occupations</td>
<td>13.4</td>
<td>15.3</td>
<td>15.2</td>
<td>88</td>
<td>101</td>
</tr>
<tr>
<td>Farming, Forestry, and Fishing Occupations</td>
<td>1.4</td>
<td>4.3</td>
<td>9.5</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>Precision Production, Craft, and Repair Occupations</td>
<td>12.6</td>
<td>10.2</td>
<td>12.0</td>
<td>105</td>
<td>85</td>
</tr>
<tr>
<td>Machine Operators, Assemblers, and Inspectors</td>
<td>5.0</td>
<td>5.6</td>
<td>7.0</td>
<td>71</td>
<td>80</td>
</tr>
<tr>
<td>Transportation and Material Moving Equipment Occupations</td>
<td>3.5</td>
<td>4.2</td>
<td>4.8</td>
<td>74</td>
<td>89</td>
</tr>
<tr>
<td>Handlers, Equipment Cleaners, Helpers, and Laborers</td>
<td>3.5</td>
<td>4.9</td>
<td>4.3</td>
<td>81</td>
<td>113</td>
</tr>
<tr>
<td>All Occupations</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


†Ratio of percent of ex-Iowans in occupation group to percent of all Iowans in occupation group; index value above 100 indicates above average migration rate; below 100 indicates below average migration rate.

§Ratio of percent of new Iowans in occupation group to percent of all Iowans in occupation group; index value above 100 indicates above average migration rate; below 200 indicates below average migration rate.
### Table 2
**Distribution by Industry of Workers Moving Between Iowa and Other States, 1982-89**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Ex-Iowans</th>
<th>New Iowans</th>
<th>All Iowans</th>
<th>Out-Migration Index†</th>
<th>In-Migration Index§</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, and Fisheries</td>
<td>1.5</td>
<td>4.8</td>
<td>10.0</td>
<td>15</td>
<td>48</td>
</tr>
<tr>
<td>Mining</td>
<td>0.6</td>
<td>0.5</td>
<td>0.1</td>
<td>540</td>
<td>418</td>
</tr>
<tr>
<td>Construction</td>
<td>5.1</td>
<td>6.0</td>
<td>4.2</td>
<td>120</td>
<td>141</td>
</tr>
<tr>
<td>Manufacturing (Durable Goods)</td>
<td>8.1</td>
<td>8.0</td>
<td>9.6</td>
<td>84</td>
<td>83</td>
</tr>
<tr>
<td>Manufacturing (Nondurable Goods)</td>
<td>5.9</td>
<td>9.5</td>
<td>8.8</td>
<td>67</td>
<td>107</td>
</tr>
<tr>
<td>Transportation, Communications, and Other Public Utilities</td>
<td>6.7</td>
<td>5.2</td>
<td>5.8</td>
<td>115</td>
<td>89</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>4.7</td>
<td>5.9</td>
<td>4.8</td>
<td>98</td>
<td>122</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>16.5</td>
<td>20.3</td>
<td>17.8</td>
<td>93</td>
<td>114</td>
</tr>
<tr>
<td>Finance, Insurance, and Real Estate</td>
<td>8.3</td>
<td>5.0</td>
<td>5.0</td>
<td>166</td>
<td>101</td>
</tr>
<tr>
<td>Business and Repair Services</td>
<td>3.5</td>
<td>4.6</td>
<td>3.2</td>
<td>109</td>
<td>140</td>
</tr>
<tr>
<td>Personal Services Including Private Households</td>
<td>5.4</td>
<td>2.2</td>
<td>3.9</td>
<td>136</td>
<td>55</td>
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<tr>
<td>Entertainment and Recreation Services</td>
<td>1.8</td>
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<td>0.9</td>
<td>203</td>
<td>100</td>
</tr>
<tr>
<td>Professional and Related Services</td>
<td>30.3</td>
<td>24.4</td>
<td>22.0</td>
<td>138</td>
<td>111</td>
</tr>
<tr>
<td>Public Administration</td>
<td>1.5</td>
<td>2.8</td>
<td>3.6</td>
<td>41</td>
<td>78</td>
</tr>
<tr>
<td>All Industries</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


†Ratio of percent of ex-Iowans in industry to percent of all Iowans in industry.

§Ratio of percent of new Iowans in industry to percent of all Iowans in industry.
<table>
<thead>
<tr>
<th>Occupation</th>
<th>Move From Iowa</th>
<th>Move Into Iowa</th>
<th>Total Turnover</th>
<th>Net Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive, Administrative, and Managerial Occupations</td>
<td>4.5</td>
<td>2.5</td>
<td>7.0</td>
<td>-2.0</td>
</tr>
<tr>
<td>Professional Specialty Occupations</td>
<td>5.1</td>
<td>4.0</td>
<td>9.1</td>
<td>-1.1</td>
</tr>
<tr>
<td>Technicians and Related Support Occupations</td>
<td>5.6</td>
<td>2.8</td>
<td>8.4</td>
<td>-2.8</td>
</tr>
<tr>
<td>Sales Occupations</td>
<td>5.4</td>
<td>3.4</td>
<td>8.8</td>
<td>-2.0</td>
</tr>
<tr>
<td>Administrative Support Occupations, including Clerical</td>
<td>4.4</td>
<td>2.9</td>
<td>7.3</td>
<td>-1.5</td>
</tr>
<tr>
<td>Service Occupations</td>
<td>3.2</td>
<td>2.0</td>
<td>5.2</td>
<td>-1.2</td>
</tr>
<tr>
<td>Farming, Forestry, and Fishing Occupations</td>
<td>0.4</td>
<td>1.6</td>
<td>2.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Precision Production, Craft, and Repair Occupations</td>
<td>4.5</td>
<td>2.1</td>
<td>6.6</td>
<td>-2.4</td>
</tr>
<tr>
<td>Machine Operators, Assemblers, and Inspectors</td>
<td>1.9</td>
<td>2.5</td>
<td>4.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Transportation and Material Moving Equipment Occupations</td>
<td>2.6</td>
<td>2.1</td>
<td>4.7</td>
<td>-0.5</td>
</tr>
<tr>
<td>Handlers, Equipment Cleaners, Helpers, and Laborers</td>
<td>2.5</td>
<td>3.4</td>
<td>5.9</td>
<td>0.9</td>
</tr>
<tr>
<td>All Occupations</td>
<td>4.7</td>
<td>3.1</td>
<td>7.8</td>
<td>-1.6</td>
</tr>
</tbody>
</table>


†Sum of turnover rates for ex-Iowans and new Iowans.
Table 4  
Annual Turnover Rates, by Industry  
(Percent)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Move From Iowa</th>
<th>Move Into Iowa</th>
<th>Total Turnover†</th>
<th>Net Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, and Fisheries</td>
<td>0.3</td>
<td>1.5</td>
<td>1.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Mining</td>
<td>4.6</td>
<td>0.0</td>
<td>4.6</td>
<td>-4.6</td>
</tr>
<tr>
<td>Construction</td>
<td>5.6</td>
<td>2.9</td>
<td>8.5</td>
<td>-2.7</td>
</tr>
<tr>
<td>Manufacturing (Durable Goods)</td>
<td>2.9</td>
<td>2.3</td>
<td>5.2</td>
<td>-0.6</td>
</tr>
<tr>
<td>Manufacturing (Nondurable Goods)</td>
<td>2.1</td>
<td>2.8</td>
<td>4.9</td>
<td>0.7</td>
</tr>
<tr>
<td>Transportation, Communications, and Other Public Utilities</td>
<td>4.4</td>
<td>2.0</td>
<td>6.4</td>
<td>-2.4</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>2.9</td>
<td>4.2</td>
<td>7.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>3.9</td>
<td>3.2</td>
<td>7.1</td>
<td>-0.7</td>
</tr>
<tr>
<td>Finance, Insurance, and Real Estate</td>
<td>7.6</td>
<td>2.4</td>
<td>10.0</td>
<td>-5.2</td>
</tr>
<tr>
<td>Business and Repair Services</td>
<td>4.0</td>
<td>3.5</td>
<td>7.5</td>
<td>-0.5</td>
</tr>
<tr>
<td>Personal Services Including Private Households</td>
<td>4.6</td>
<td>1.2</td>
<td>5.8</td>
<td>-3.4</td>
</tr>
<tr>
<td>Entertainment and Recreation Services</td>
<td>9.3</td>
<td>3.4</td>
<td>12.7</td>
<td>-5.9</td>
</tr>
<tr>
<td>Professional and Related Services</td>
<td>5.1</td>
<td>2.9</td>
<td>8.0</td>
<td>-2.2</td>
</tr>
<tr>
<td>Public Administration</td>
<td>0.8</td>
<td>1.7</td>
<td>2.5</td>
<td>0.9</td>
</tr>
<tr>
<td>All Industries</td>
<td>4.7</td>
<td>3.0</td>
<td>7.7</td>
<td>-1.7</td>
</tr>
</tbody>
</table>

†Sum of turnover rates for ex-Iowans and new Iowans.
This mobility occurred in both good times and bad. Table 5 compares the occupational distribution of workers who moved into and out of the state in two periods of sharply differing prosperity. During the 1975–80 period, Iowa’s economy was booming; during the 1982–89 period, the state economy was first suffering from and then recovering from a severe recession. Even though fewer workers moved into the state during the less prosperous 1980s, the occupational distribution of migrating workers was quite similar during the two periods. For 1980–85, the in-migration rate was about 5 percent and for 1975–80 about 9 percent; the out-migration rate for both periods was about 11 percent.

Those entering and leaving the state workforce were quite similar in education and age, but both groups were on average younger and better educated than the total population of workers within the state (Table 6). Incomes were on average substantially lower for those entering Iowa than for those leaving Iowa for other job opportunities. The data in Table 6 confirm the commonly held view that mobile workers tend to be above average in education and below average in age. But it also shows that those moving between Iowa and other states were distributed across a very wide range of age, education, and income. Those migrating into or out of Iowa had lower incomes than the average for all Iowans, in part because younger workers have lower incomes than older workers.

More than one-half (52.6 percent) of those leaving Iowa moved to one of five states: Illinois, Minnesota, Missouri, Nebraska, or Texas. Almost one-half (46.7 percent) of those moving into Iowa came from one of six states: California, Minnesota, Missouri, Nebraska, New York, or Texas (Figures 7 and 8). Relatively few Iowa workers came from eastern states (other than New York) and, when they left Iowa, few workers moved to the East. Most workers either go to or come from neighboring states.

The migration of workers from state to state is not a new feature of the U. S. economy. Interstate migration of workers has helped to reduce, but has not eliminated, the wide regional disparities in living standards, measured by income per person, that existed 60 years ago (Figure 9).

**DISTRIBUTION OF EMPLOYMENT**

Since 1965, the distribution of Iowa’s nonagricultural employment across industries has shifted in important ways (Figure 10). The service sector had the greatest increase, the manufacturing sector the greatest decrease. In large measure, changes in industry mix in Iowa have paralleled changes at the national level, but they have been slightly smaller. From 1965 to 1989, the
Table 5
Occupational Distribution of Workers Moving Between Iowa and Other States, 1975-80 and 1982-89
(percent)

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Ex-Iowans</th>
<th></th>
<th>New Iowans</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive, Administrative, and Managerial</td>
<td>13.9</td>
<td>9.1</td>
<td>12.4</td>
<td>8.3</td>
</tr>
<tr>
<td>Occupations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Specialty Occupations</td>
<td>21.6</td>
<td>20.5</td>
<td>21.5</td>
<td>19.3</td>
</tr>
<tr>
<td>Technicians and Related Support Occupations</td>
<td>4.5</td>
<td>4.9</td>
<td>4.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Sales Occupations</td>
<td>11.0</td>
<td>11.3</td>
<td>9.8</td>
<td>10.9</td>
</tr>
<tr>
<td>Administrative Support Occupations, including</td>
<td>15.3</td>
<td>14.9</td>
<td>14.4</td>
<td>14.2</td>
</tr>
<tr>
<td>Clerical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Occupations</td>
<td>10.9</td>
<td>13.4</td>
<td>13.0</td>
<td>15.3</td>
</tr>
<tr>
<td>Farming, Forestry, and Fishing Occupations</td>
<td>2.4</td>
<td>1.4</td>
<td>2.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Precision Production, Craft, and Repair</td>
<td>9.4</td>
<td>12.6</td>
<td>8.7</td>
<td>10.2</td>
</tr>
<tr>
<td>Occupations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine Operators, Assemblers, and Inspectors</td>
<td>5.0</td>
<td>5.0</td>
<td>6.5</td>
<td>5.6</td>
</tr>
<tr>
<td>Transportation and Material Moving</td>
<td>2.9</td>
<td>3.5</td>
<td>3.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Equipment Occupations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handlers, Equipment Cleaners, Helpers, and</td>
<td>3.1</td>
<td>3.5</td>
<td>3.7</td>
<td>4.9</td>
</tr>
<tr>
<td>Laborers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All occupations</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>


Note: Distribution excludes unemployed and armed forces.
### Table 6
**Age, Education, and Income of Workers Leaving, Arriving, and Remaining in Iowa, 1982-89**

<table>
<thead>
<tr>
<th></th>
<th>25th percentile</th>
<th>Median</th>
<th>75th percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ex Iowans</td>
<td>New Iowans</td>
<td>All Iowans</td>
</tr>
<tr>
<td>Age</td>
<td>23</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>Highest grade completed</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Weekly wages last year (89$)</td>
<td>146</td>
<td>136</td>
<td>92</td>
</tr>
<tr>
<td>Annual earnings last year (89$)</td>
<td>4,016</td>
<td>2,568</td>
<td>2,273</td>
</tr>
<tr>
<td>Annual earnings as fraction of family's poverty line income</td>
<td>0.42</td>
<td>0.23</td>
<td>0.22</td>
</tr>
<tr>
<td>Ratio of total family income to family's poverty line income</td>
<td>1.60</td>
<td>0.99</td>
<td>1.85</td>
</tr>
<tr>
<td>Number of persons in family</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Weeks worked last year</td>
<td>30</td>
<td>24</td>
<td>44</td>
</tr>
</tbody>
</table>

Figure 7
Percentage Distribution of Ex-Iowans by State of Destination

Percent of All Ex-Iowans Going to State

Percent of All New Iowans from State

- 0.0% to 5.0%
- 5.0% to 9.0%
- 9.0% to 13.0%

Figure 8
Percentage Distribution of New Iowans by State of Origin

Figure 9
Regional Per Capita Personal Income, Relative to U.S. Average, 1930-2010

Figure 10
Percentage Distribution of Iowa's Nonagricultural Employment, By Industry, 1965-89

share of nonagricultural employment in manufacturing dropped from 29.7 percent to 18.0 percent in the nation and from 25.6 percent to 19.1 percent in Iowa. For the same period, the share of employment in the service sector increased from 14.9 percent to 24.8 percent in the nation and from 14.3 percent to 21.6 percent in Iowa.

In the past two decades, employment within Iowa has become more concentrated in urban areas (Figures 11-13). From 1970 to 1979, employment in most of Iowa's 99 counties increased; in 81 counties, the percentage increase in employment exceeded the national average. In contrast, from 1979 to 1987, only five counties had employment growth in excess of the national average. For the entire period 1970-87, employment increased in most counties, but the percentage increase exceeded the national rate in only 30 counties. Appendix Table A-3 shows 1970-87 employment growth by county.

EDUCATIONAL OUTCOMES

Education at the elementary, secondary, and post-secondary levels is an important determinant of the skills and abilities of the workers entering the labor force each year. The question is increasingly raised whether educational institutions are adequately preparing young people to be productive workers. By the broad measures typically used to evaluate educational institutions, there is no evidence of decline in performance, especially in the case of Iowa, where high school graduation rates are high (see Table 7). Those who see decline will therefore need to specify how objective evidence of decline is to be obtained.

Over the past two decades, the performance of Iowa's public school system, as measured by dropout rates, standardized test scores, and the percentage of high school graduates who pursue post secondary education, has been stable or improving. Statewide high school dropout rates have fallen slightly from earlier years, to slightly below 4 percent per year for the freshman through senior years (Table 8). Iowa high school students continue to score well above the national levels on ACT and SAT examinations (Table 9), and a growing number of high school graduates are continuing their educations. In 1988, almost 38 percent of Iowa's high school graduates enrolled in a four-year college, an increase of almost 10 percentage points from a decade earlier (Table 10). The percentage enrolling in community colleges and area vocational-technical schools has also been increasing.

7 These data pertain to the main categories of private sector employment. They do not include government employees, self-employed persons, farm workers, and domestic service workers. Despite these omissions, the County Business Pattern data are the most suitable source of data for determining private sector employment trends.
Figure 11
Employment Growth in Iowa Counties, 1970-79

Percent Change
1970-79

24  .5% to 30%  Below National Growth
10  30% to 36%  Below State Growth
65  36% to 118%  Above State Growth

Figure 12
Employment Growth in Iowa Counties, 1979-87

Percent Change
1979-87

60 -29% to -5%
32 -5% to 14%
7 14% to 39%

Below State Growth
Below National Growth
Above National Growth

Figure 13
Employment Growth in Iowa Counties, 1970-87

Percent Change 1970-87
-21% to 30% Below State Growth
30% to 49% Below National Growth
49% to 117% Above National Growth

Sources: As for Figures 11 and 12.
Table 7
High School Graduation Rates, Iowa and U.S. (percent)

<table>
<thead>
<tr>
<th></th>
<th>1982</th>
<th>1986</th>
<th>1988</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa</td>
<td>84.1</td>
<td>87.5</td>
<td>85.8</td>
</tr>
<tr>
<td>National Average</td>
<td>69.5</td>
<td>71.6</td>
<td>71.1</td>
</tr>
<tr>
<td>Rank</td>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>


Table 8
Average Iowa High School Dropout Rates Per School Year* (percent)

<table>
<thead>
<tr>
<th>School Year</th>
<th>Dropout Rate Averaged Over Grades 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969-1970</td>
<td>4.05</td>
</tr>
<tr>
<td>1979-1980</td>
<td>4.21</td>
</tr>
<tr>
<td>1988-1989</td>
<td>3.95</td>
</tr>
</tbody>
</table>


* Values indicate the weighted average percentage of students dropping out during a single year.

Table 9
ACT and SAT Scores, Iowa and U.S. Averages, 1980-90

<table>
<thead>
<tr>
<th>Year</th>
<th>ACT Scores</th>
<th>SAT Scores</th>
<th>SAT Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Iowa</td>
<td>U.S.</td>
<td>Iowa</td>
</tr>
<tr>
<td></td>
<td>Verbal</td>
<td>Math</td>
<td>Verbal</td>
</tr>
<tr>
<td>1990</td>
<td>21.8</td>
<td>20.6</td>
<td>511</td>
</tr>
<tr>
<td>1989</td>
<td>20.1</td>
<td>18.6</td>
<td>512</td>
</tr>
<tr>
<td>1988</td>
<td>20.3</td>
<td>18.8</td>
<td>513</td>
</tr>
<tr>
<td>1987</td>
<td>20.3</td>
<td>18.7</td>
<td>515</td>
</tr>
<tr>
<td>1986</td>
<td>20.6</td>
<td>18.8</td>
<td>519</td>
</tr>
<tr>
<td>1985</td>
<td>20.3</td>
<td>18.6</td>
<td>521</td>
</tr>
<tr>
<td>1984</td>
<td>20.2</td>
<td>18.5</td>
<td>512</td>
</tr>
<tr>
<td>1983</td>
<td>20.2</td>
<td>18.3</td>
<td>520</td>
</tr>
<tr>
<td>1982</td>
<td>20.3</td>
<td>18.4</td>
<td>516</td>
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<tr>
<td>1981</td>
<td>20.3</td>
<td>18.5</td>
<td>515</td>
</tr>
<tr>
<td>1980</td>
<td>20.5</td>
<td>18.5</td>
<td>508</td>
</tr>
</tbody>
</table>

### Table 10
Continuing Education, Iowa High School Graduates, 1970-88
(percent)

<table>
<thead>
<tr>
<th>Year</th>
<th>All Programs</th>
<th>Four Year College</th>
<th>Year</th>
<th>All Programs</th>
<th>Four Year College</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>59.69</td>
<td>31.85</td>
<td>1980</td>
<td>54.00</td>
<td>29.87</td>
</tr>
<tr>
<td>1972</td>
<td>49.92</td>
<td>26.43</td>
<td>1982</td>
<td>57.12</td>
<td>30.74</td>
</tr>
<tr>
<td>1974</td>
<td>48.27</td>
<td>27.12</td>
<td>1984</td>
<td>59.82</td>
<td>33.90</td>
</tr>
<tr>
<td>1976</td>
<td>49.50</td>
<td>27.47</td>
<td>1986</td>
<td>62.39</td>
<td>36.50</td>
</tr>
<tr>
<td>1978</td>
<td>50.26</td>
<td>28.48</td>
<td>1988</td>
<td>65.26</td>
<td>37.70</td>
</tr>
</tbody>
</table>

Source: Bureau of Instruction and Curriculum, 1990, *Iowa Guidance Surveys*, Des Moines, IA: Iowa Department of Education, p. 61. Included in total percentage are those enrolled in both public and private four-year colleges, community or junior colleges, business, trade, or technical schools, nursing (other than university, area school, or community college), other special schools, and apprenticeship training.

### Table 11
Years Of School Completed For Persons 25 Years and Older, Iowa, Midwest and U.S.
(percent)

<table>
<thead>
<tr>
<th></th>
<th>Iowa</th>
<th>Midwest</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No school years completed</td>
<td>0.5</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Elementary: 1 to 8 years</td>
<td>37.5</td>
<td>25.5</td>
<td>16.3</td>
</tr>
<tr>
<td>High school: 1 to 3 years</td>
<td>15.7</td>
<td>15.0</td>
<td>11.8</td>
</tr>
<tr>
<td>4 years</td>
<td>30.3</td>
<td>38.7</td>
<td>42.9</td>
</tr>
<tr>
<td>College: 1 to 3 years</td>
<td>9.6</td>
<td>11.1</td>
<td>14.7</td>
</tr>
<tr>
<td>4 years or more</td>
<td>6.4</td>
<td>9.1</td>
<td>13.9</td>
</tr>
</tbody>
</table>


Note: North Central region is used as the definition for Midwest, and includes North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Indiana, Michigan and Ohio.
There is also evidence that Iowa's students in grades K through 8 are learning the basic skills as well today as anytime in the past 50 years. Average scores of K–8 students on the Iowa Test of Basic Skills (ITBS), which is widely used throughout the nation to evaluate basic skills achievement, have been collected for Iowa school districts since 1940. There is no evidence of decline in these scores. Further, Iowa school districts continue to score well above districts in other states that also use ITBS; in 1985–86, the average score of 92 percent of Iowa's districts exceeded the national median score (See Appendix B).

These data do not indicate a decline in the educational attainment of those educated in Iowa and entering the labor force; if anything, new workers are better educated than in years past. Similar data for the nation as a whole also indicate that the educational attainment of entrants to the U.S. labor force is stable or increasing, as measured by test scores, graduation rates, and college enrollment rates. Nationally, high school graduation rates have been stable for the past 25 years, and the fraction of high school graduates who go on to college has been increasing (Appendix Table A-4).

These statistics do not mean, of course, that new workers could not be better prepared than they are. But the data do forestall the conclusion that the quality of education received by new workers has declined or that any such decline has created a gap between workers' abilities and the requirements of the modern workplace.

The population of Iowa has become better educated over time, and it is better educated on average than the national population (Table 11). In 1980, the proportion of the Iowa population over age 25 that had completed high school (71.5 percent) exceeded the national average (66.5 percent). But that proportion was lower than the proportion of Iowa students who complete high school. Similarly, in 1980 the proportion of Iowans who had completed college (13.9 percent) was below the national average (16.2 percent), even though the proportion of Iowa high school graduates who go on to college is above the average. One interpretation of these data is that Iowa loses more high school and college graduates through migration than it gains.

**OUTLOOK: 1990–2000**

A number of studies have described probable trends in the size and characteristics of the national labor force over the next 10 to 20 years. They commonly point out that an increasing share of the U.S. labor force will be women and members of racial or ethnic minorities, that the labor force
will become older, and that the share of jobs requiring relatively high levels of education and skills will increase.

There can be little doubt that the U.S. labor force will grow more slowly over the next decade than it has during the past two decades, unless immigration increases substantially. Taken by itself, slower labor force growth means slower growth of real income and production. A recent Bureau of Economic Analysis (BEA) forecast is representative: the BEA projects a slowdown in the growth rate of real personal income, from a 1979–88 average of 2.56 percent to an annual average of 1.96 percent for 1988–2000. But the BEA does not expect slower growth to lead to stagnant or declining living standards; it forecasts that real per capita personal income will increase at an average annual rate of 1.23 percent, somewhat less than the 1979–88 rate of 1.53 percent.

Slower growth at the national level need not mean slower growth in any particular state. Iowa is a case in point: the BEA forecasts that total personal income in Iowa will grow at an average rate of 1.79 percent per year for 1988–2000, after having declined by .18 percent per year on average in 1979–88. Iowa’s per capita personal income is forecast to grow at an average rate of 1.36 percent per year for 1988–2000, after having grown by only .14 percent per year in 1979–88. Private nonfarm employment growth for 1988–2000 is projected at 1.19 percent per year, almost double the rate of .63 percent for 1979–88. For both Iowa and the nation as a whole, the mix of private nonfarm employment is expected to continue shifting toward services.

The BEA projections of rates and patterns of state-level income and employment growth are based on forecasts of changes in the labor supply, in the supply of other resources, in technology, and in demand for products. They are of interest here because they imply that slower growth in the national labor supply will not prevent Iowa’s annual rate of private nonfarm employment growth from increasing sharply to 1.19 percent, a rate that compares favorably to the rate of 1.29 percent projected for the nation as a whole. The next chapter, which further examines the linkages between labor supply and economic growth in a small state such as Iowa, explains why the BEA forecast is plausible.

**SUMMARY**

From the statistics discussed in this chapter, a picture emerges of a state economy that is highly integrated into the national economy. During the 1970s, employment grew more rapidly in Iowa than in the nation as a whole,
in response to wage growth that also slightly exceeded the national rate. The opposite was true in the 1980s, although some statistics for the last two years of the decade show the Iowa economy moving more in line with the national economy.

Workers in all occupational categories move between Iowa and other states. There is no fixed Iowa labor force—no fixed set of workers from which Iowa employers must meet their demands for labor services. Instead, workers are supplying labor and employers are hiring labor in a market that is virtually regional or national.

Economic growth in the state does not seem to have been limited by the availability and cost of qualified labor. Instead, the expansion of the Iowa economy during the 1970s and its subsequent contraction during the 1980s reflected underlying trends in the demand for products that Iowa has a comparative advantage in producing.

Employment growth over the 1970–87 period was below the national average for the state as a whole, according to County Business Patterns statistics. But some counties enjoyed growth in excess of the national average. This within-state pattern of growth continues a trend of urbanization and concentration of employment and population that has been underway in Iowa, the midwest, and most of the U.S. since the turn of the century.
This chapter examines how the supply of labor to Iowa employers is determined and how that supply in turn affects the state's economic growth and the economic well-being of its population. The key questions are how to define and measure labor supply and shortage; how the labor supply in Iowa is related to national labor supply, national labor market conditions, and national policies; and how state economic conditions and policies influence labor supply.

LABOR SUPPLY, SCARCITY, AND SHORTAGE

Labor supply is important to individual businesses because it determines the costs of hiring workers with specific skills and abilities. When labor supply increases, labor costs decrease; conversely, when labor supply decreases, costs increase. These include the costs of recruiting and screening workers as well as the costs of fringe benefits, wages, and salaries. Labor costs vary by the type of worker being hired: skilled workers are more costly to hire than unskilled. The cost of hiring labor of a given type depends in general on the mix of wage and fringe benefits—the compensation package. It also depends on other dimensions of the job: working conditions, work options, job security, job-related training and educational opportunities, and opportunities for advancement.

Improving the nonwage dimensions of employment can reduce the wages that an employer has to pay to hire and retain workers with given skills and abilities. Businesses may therefore be able to reduce total labor costs by trading off wages and salaries against the costs of providing fringe benefits, safe and pleasant working conditions, flexible work options, job security, on-the-job training, and such. For example, to hire and retain a worker with specified abilities and skills, an employer might have to offer a wage of $15 per hour if fringes did not include health insurance; a wage of $12 might be adequate if health insurance were provided. In this case, providing health insurance would reduce total compensation costs if the health insurance cost to the employer were less than $3 per hour.

In their reports, subcommittees of the advisory committee for this study discuss various work options and fringe benefits. The work options include

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1 Labor supply conditions do not determine, however, the number and quality of workers that an individual business can hire. Because the labor demanded by a single business represents only a very small fraction of total demand, it can reasonably expect to hire at the prevailing wage as many workers as it wishes.
flex-time, temporary, part-time, alternative full-time (for example, four 10-hour or three 12-hour days), job sharing, work-at-home, and contracting. The first three listed are the most widely used. Fringe benefits considered were health insurance, dependent care, retirement, sick pay, and vacations. The more important fringe benefits, in terms of both employers’ costs and workers’ welfare, are retirement and health insurance.

These subcommittee reports clearly show that Iowa employers are aware that wages and salaries can be traded for improvements in working conditions, work options, and fringe benefits. They are also aware that the makeup of the national labor force is changing and that these changes have implications for their personnel policies. They recognize the importance of non-wage dimensions in the competition for workers, and they compete on all these dimensions. In this competition, their objectives are to minimize labor costs over time, to recruit and retain qualified workers, to make their operations more flexible, and to make work more productive. The reports explain that the same configuration of fringe benefits, flexible work options, and working conditions will not be best for all businesses. Arrangements that lower overall costs in one business may increase costs for other businesses. It is therefore not possible to prescribe in general how these alternatives should be used.

A labor shortage occurs when demand for a particular type of labor exceeds supply at the prevailing or current market wage. In such a spot shortage, the price of labor (the wage paid) is too low to ration the available supply of labor among competing employers; consequently, employers may offer the prevailing wage and find no takers. This condition does not persist long, however, when labor markets are competitive and free to adjust, as they are in the U.S. Instead, wage increases signal workers to move into areas and occupations in which shortages exist; movement continues until the shortage is eliminated—until demand and supply are in balance at the prevailing but now higher wage.2

Wages also rise for other reasons; usually, rising wages simply indicate that labor is becoming more scarce relative to other factors of production. Employers should not conclude that there is a labor shortage simply because they have to pay higher wages; even when an employer can no longer pay market wages and still remain profitable, there may still be a sufficient supply of labor. Labor markets can be in balance—meaning that employers

2 Since jobs have important non-wage dimensions, an increase in the market or prevailing wage should be interpreted more generally—as an increase in the value and attractiveness of the job in some dimension(s) such as wage, fringe benefits, working conditions and options, job security, and opportunity for training and advancement.
can hire all of the labor that they need at the prevailing wage—even though rising wages and labor costs are driving some companies out of business.

If forecasts prove correct and labor does become more scarce during the next decade or so, labor costs may increase and there may be short-term spot shortages. But there is no reason to expect that Iowa employers will be unable to hire workers at prevailing wages. There also is no reason to expect that rising labor costs will put Iowa employers at a disadvantage relative to employers in other states.

**IMPORTANT INFLUENCES ON LABOR SUPPLY**

A varied set of factors determine the supply of labor to employers in Iowa: the mobility of workers, the amenities and quality of life in Iowa communities, public and private investment in human capital, and factors that affect labor force utilization.

**Worker Mobility**

The supply of labor to Iowa employers depends on the geographical mobility of workers—their ability and willingness to move from one place to another when competing employers offer different compensation packages. There is a wide range of opinion about the extent to which workers are in fact mobile. Business and political leaders commonly think of workers as immobile and, consequently, think of states as having a particular labor force—those who are currently employed in the state. Thus, studies often document the wages, education, skills, occupation, age, and experience of workers currently employed and unemployed in a state and compare these data with data on workers in other states.

This view is at best accurate only in the short run. Over time, some workers in each occupation and industry are willing to move from one state to another in response to differences in compensation (wages and benefits). The data summarized in Chapter 2 clearly show that such is the case for Iowa workers. Substantial numbers of workers moved between Iowa and other states during years of economic expansion (1975–80) and during years of economic recession (1980–85). But the rate of in-migration was lower in the recession years.

Because workers are mobile, there is no fixed labor force from which Iowa employers must meet their labor needs; the supply of labor to Iowa employers is not determined by the number and characteristics of the state's current workforce. It is especially important to recognize that the number and characteristics of Iowa's unemployed are not good indicators of the labor
pool available to employers who wish to locate new operations or to expand existing operations in Iowa. Rather than being fixed, the skill levels and occupational and industrial mix of Iowa's labor force adjust over time to labor demands, which in turn reflect the state's comparative advantages in production.

Iowa employers must in most instances hire in a regional or national labor market and pay wages and benefits that are competitive with those offered by employers in other states. To attract workers, Iowa employers will have to make compensation offers that increase over time at the national rate; they will face labor costs that are determined in large measure by national labor market conditions. To the extent that labor becomes more scarce over the coming decade, Iowa will be affected in much the same way as other states.

Of course, not all workers are mobile, nor do workers move among jobs and locations only in response to differences in compensation and other terms of employment. However, there is enough economically motivated mobility to ensure that workers employed in a particular business cannot for long be paid less than other workers with similar skills and abilities.

This conclusion is not in conflict with the view, expressed in several subcommittee reports, that workers move for jobs but not for wages. Unemployed workers who move for a job are essentially moving from a job with a very low wage to one with a higher wage. Other "nonwage" motives for moving—opportunity for advancement, fringe benefits, job security—in fact reflect workers' desire to increase the real income that they derive over a number of years. The conclusion here—that workers are able and willing to move for economic gain—is therefore consistent with the commonly held view that workers often move for reasons other than an immediate increase in hourly or weekly wages.

Further, a large number of workers enter and reenter the labor force in an average year; a conservative estimate is 15 percent per year. These "unassigned" workers are free to move to the job that offers the greatest return. Therefore, a substantial fraction of the labor force can in effect be shifted from relatively low return to relatively high return employment without any currently employed workers changing jobs. For employment to decline in some industries and geographic areas while it increases in others, it is not necessary that all workers be able and willing to move from declining industries and areas to expanding ones. Employment can decline in some sectors through attrition (due to retirement and other voluntary quits), and it can increase in other sectors through the allocation of new workers.
When a household has more than one member in the labor force, as is increasingly the case, some members may not be able to move to the employment that offers the highest return. These households have secondary workers—for example, one spouse and perhaps adult children—who are not mobile. The number of secondary workers in any given labor market will be limited. Therefore, businesses that rely heavily on secondary workers may face rapidly increasing labor costs once the supply of secondary workers is exhausted. Such businesses may find it advantageous to locate their operations at several sites, taking care that employment at each site does not exceed the limited supply of secondary workers. The subcommittee report on plant location decisions clearly indicates that this is an important consideration for some Iowa companies.

However, it is also important to recognize that the supply of labor for most businesses is not restricted in this manner. For most businesses, the labor supply available to employers who wish to locate or expand in a given city or state is not limited to the employed and unemployed workforce currently in the area. To conclude otherwise would be to take an unduly pessimistic view of Iowa’s growth prospects.

This fact has important implications for the relevance of state “business climate” rankings. The rankings prepared by the accounting firm of Grant Thornton, for example, give great weight to the average wage paid to currently employed workers. But this average manufacturing wage may not be the wage that a new or expanding business would have to pay; that wage might be higher or lower. The more relevant information would be estimates of what employers would have to pay for workers with specified skills and abilities.

Amenities

Workers attempt to maximize the standard of living or welfare that they derive from supplying their labor to employers. This standard obviously

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3 When businesses are asked to identify the key factors influencing their location decisions, as many studies have done, labor availability is always a high priority factor. However, this fact should not be interpreted as evidence that businesses try to locate where there are enough currently unemployed workers with the skills required to meet their labor needs. Instead, the interpretation should be that employers locate where they expect that they will be able to attract the workers that they need at costs that compare favorably with other locations.

4 For an example of this reasoning, see the Des Moines Register (29 August 1990, p. 1), which reports that “Iowa manufacturing wages have risen only about 6 percent in the past five years, according to a recent study by Grant Thornton, a nationwide accounting firm. The modest wage increases helped Iowa’s manufacturing climate retain the fifth spot among the nation’s low-intensity manufacturing states. . . . Wage rates were the biggest factor in the Grant Thornton rankings.” According to Grant Thornton, “Iowa’s manufacturing climate was also considered positive because of slipping union membership in the state.”
depends on the terms of their employment—that is, both compensation and working conditions. But it also depends on the “amenities” of the community in which they live and work, the factors that affect their cost of living and quality of life: the purchasing power of their wages, the taxes they pay, the quality of schools and other public services, recreational and cultural opportunities, climate, and environmental quality, for example. Individual workers will value amenities differently; and some amenities may be more important for some types of workers than for others. A particular community may therefore be attractive to some workers, while being unacceptable to others.

When workers accept a job offer, they are usually deciding where to live as well as what employer to work for or what occupation to pursue. The amenities available in the place of employment can therefore affect job choices and labor supply just as surely as the terms of employment do. If employers in different communities offer the same compensation package when they compete for workers, workers will prefer to work for employers in the high-amenity locations. Employers in locations where amenities are relatively unfavorable will therefore have to offer relatively generous and costly compensation packages to attract workers. They will have to pay what are commonly termed “compensating wage differentials.” The dollar cost of hiring workers of a given type will thus depend on characteristics of the community in which the employer is located; businesses in a low amenity community face labor cost disadvantages measured by the compensating wage differentials that they have to pay. If a community’s amenities are sufficiently poor, businesses may be unable to operate there because of prohibitively high labor costs.5

To illustrate, if there were no amenity differences between two states, workers with the same skills and abilities would earn the same wage, say $10 per hour, in each state. However, if amenities in one were greater than in the other, a wage differential would arise. Workers would be willing to work in the first state at a lower wage (say $9 per hour) than workers in the second (where they might ask for $11 per hour), creating a compensating wage differential (in this example, of $2 per hour). Employers in the first state would have an advantage over employers in the other state, and the advantage would persist as long as the difference in amenities persisted. Long-term amenity differentials can therefore give rise to long-term labor

5 For businesses to remain in a low amenity community, their labor cost disadvantage must be offset by other cost advantages. For example, because of its natural resource base, Alaska has more salmon processing and oil production than Iowa, even though wages are higher in Alaska. But Alaska does not produce farm equipment because there are no raw material or other cost advantages to offset its labor cost disadvantage.
cost advantages. Of course, a labor cost advantage for one state implies a disadvantage for other states.

Workers are mobile because it is fundamentally in their self-interest to be so. When compensation varies from one state to another and there is no offsetting amenity differential, workers can improve their standard of living by moving from states in which compensation is relatively low to states in which it is relatively high. As they do so, compensation rates fall in the high compensation states relative to the low compensation states.

Because of this mobility, interstate differences in wage and benefit payments for a given type of labor tend to be eliminated over time, except for compensating wage differentials. Such differentials are the main source of interstate differences in the earnings of workers with the same skills, experience, and productivity. Over the long run, labor costs can be relatively low in a state only if it has relatively high amenities; to be "low in labor cost," a state must be "high in amenities." A business that locates in a state because it has relatively low wages may see that advantage evaporate unless the relatively low wages reflect a favorable amenity differential.

Thus, the fact that workers are mobile does not mean that a particular business will face the same labor cost no matter where it locates. We have just noted that amenities can make a difference in labor costs, and we noted above that location can affect labor costs of businesses that rely heavily on secondary workers. Location does matter.

There may be differences in amenities within states as well as between states. In particular, there is a noticeable difference in housing costs, a major component of the cost of living, between Iowa's smaller towns and its rapidly growing urban centers. This difference in cost of living could, of course, be offset by other amenity differences that favor urban areas, such as the availability of recreational and cultural opportunities. If it is not offset, urban employers would have to pay a compensating wage differential to offset the difference in cost of living, giving employers an incentive to locate in small towns. Whether small towns have an amenity and therefore a labor cost advantage over urban centers, or vice-versa, is a question that we cannot answer within the scope of the present study. We can only point out the possibility and further note that amenity differences and their implied cost advantages are likely to vary across labor types.

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6 Compensating wage differentials may also offset relatively unsafe, uncomfortable, and unpleasant working conditions.

7 In a low-amenity state, conversely, workers of given productivity receive relatively high compensation over the long run, an extreme example being Alaska.
Government cannot control some of the amenity factors that give rise to compensating wage differentials—for example, climate. Other factors reflect government policies, but are difficult to control: congestion costs, land and housing prices, and other elements of the cost of living. Still other factors may be subject to fairly direct control: taxes and the cost of education, police and fire protection, roads and highways, health care and hospitals, parks and recreational facilities. When state and local governments provide public services efficiently, they make it easier (other factors being equal) for employers to attract workers at any given wage. Making government a "good buy" is important; the bundle of services per tax dollar is one of the more controllable amenities.

To summarize, the wage that an employer will have to pay to hire and retain workers with specified skills and abilities will depend on both amenities and nonwage terms of employment. This required or competitive wage will be lower when

- fringe benefits are more valuable,
- working conditions are safer and more pleasant,
- work options are more flexible,
- job security and the opportunity for advancement are greater,
- the cost of living is lower, and
- amenities are more valuable.

Individual employers cannot control the amenities, cost of living, and quality of life of a community. If amenities and quality of life are sufficiently poor or cost of living is sufficiently high, the cost of attracting workers may be prohibitively high for some businesses, which would be unable to operate profitably in the community.

**Investment In Human Capital**

Labor supply depends on the productivity as well as the number of workers; productivity in turn depends upon investment in human capital. In economics, there is a venerable proposition that a trained worker represents a valuable investment. As Adam Smith wrote in 1776,

> When any expensive machine is erected, the extraordinary work to be performed by it before it is worn out, it must be expected, will replace the capital laid out upon it, with at least the ordinary profits. A man educated at the expense of much labor and time to any of those employments which require extraordinary dexterity and skill, may be compared to one of those expensive machines. The work which he learns to perform, it must be expected, over and above the usual wages of common labor will replace to him the whole expense of his edu-
cation, with at least the ordinary profits of an equally valuable capital. It must do this too in a reasonable time, regard being had to the very uncertain duration of human life, in the same manner as to the more certain duration of the machine.8

Perhaps the most important form of human capital formation is education. Historically, growth in formal education has accounted for about 10 to 20 percent of observed growth rates in national output.9 But investment in human capital is not limited to formal education. On-the-job training is a major form of investment in human capital, and it is the principal means by which skills are updated to meet changing workplace requirements. Investments in health (for example, drug avoidance programs) and in developing habits of mind and an inclination towards work also have important payoffs in the labor market. These payoffs are known only after the investment has been made, but there can be little doubt that greater investment in human capital can increase the nation's effective labor supply by making labor more productive.

The past is not always a reliable predictor of the future, but in this case both empirical evidence and impressionistic studies of technical development suggest that education and training will provide even greater returns in the future than they have in the past. Across different countries and different time periods, studies consistently find that skilled labor complements capital and that unskilled labor substitutes for capital. In plain English, machines economize on raw labor, but skilled labor must run the machines. Thus, as physical capital becomes more productive, the demand in the labor market shifts from unskilled to skilled labor. This shift is manifested in wages: the earnings of skilled workers rise faster than the earnings of the unskilled. Studies of technology shifts in the 1970s and 1980s indicate that new processes—robotics, telecommunications, just-in-time inventory systems—use more physical capital; therefore labor market demands are likely to become even more favorable for skilled workers.

When the prospective increase in earnings is great enough to justify the cost, individuals have an incentive to invest in their own education and training. Individuals may fail to make such investments, however, for two reasons. First, they may lack information about the payoffs of education and training. Second, because of limits on borrowing against future earnings,

Individuals may be unable to finance education and training that would add to their productivity and pay for itself over the long run.\(^\text{10}\)

Investment in human capital undertaken in Iowa (or any other state) adds to the productivity of the nation’s workers and hence to the national labor supply. It increases average incomes and living standards for the nation as a whole and adds to the potential earnings of the persons invested in. Whether such investment also increases the productivity, incomes, and living standards of Iowa workers depends on whether the human capital created is firm-specific or general. If it is firm-specific, the persons acquiring the capital must remain with a particular employer, and usually within the state, to realize a gain in earnings. In this case, investment undertaken in Iowa can add directly to the productivity and incomes of Iowa workers.

In contrast, persons who acquire general human capital in Iowa need not remain in the state to realize the return on that capital. Some may remain and work here, but they would do so because of the demand for labor in Iowa and not because they received their human capital in the state. That is, the productivity and incomes of persons employed in Iowa are dictated primarily by the demand for labor in Iowa and not by the amount of general human capital investment undertaken in the state.

This fact has important implications for public policy. It is widely believed that investment in general human capital, primarily through privately and publicly financed education and training, will simultaneously increase the incomes of the workers employed in a state and provide the state’s employers with a more able and productive labor force. This belief is false, as the experience of Iowa clearly shows. Iowa has for decades provided above average general education and training for its citizens. In recent years, Iowa has also increased public funding of firm-specific human capital investment, most notably through the Iowa New Jobs Training Program authorized by House File 623. Yet average incomes and productivity (measured by real compensation per worker) of Iowa workers remain below the national average. Moreover, the average educational attainment of Iowa’s workers and population is below the level of education provided to young Iowans.

Many Iowans and surely most policymakers are aware that educating and training individuals in Iowa does not insure that they will be employed in

\(^{10}\)It has long been recognized that individuals are likely to underinvest in their education when their education benefits others than themselves. For example, to the extent that education makes an individual a better citizen, it benefits not just that person but the nation as a whole. Individuals tend to overlook how their education benefits others. They will see additional education as too costly when their personal costs exceed their personal benefits, regardless of how much the education benefits others. Individuals may therefore underinvest in their education if it benefits others and if they have to pay the full cost of the education.
the state. That point is made quite forcefully by the well documented outflow of Iowa college graduates. However, in public discussion of education and training policy, the implication of this outflow has not been made clear: it lessens the effectiveness of general education and training as means of increasing the quality of the labor force and the incomes of workers within the state. Neither is it well understood that, the more successful are efforts to upgrade workers, the more difficult it will be for employers to hire low-skill workers. Successful education and training efforts necessarily reduce the number of low-skill workers and increase the wage that they command. At the same time, the average ability level of low-skill workers will fall as education and training programs select the more able of them for upgrading.

Employers in Iowa and throughout the nation are clearly concerned that the quality of workers—their skills, abilities, dependability, and job readiness—may be declining. This is a persistent theme in the subcommittee reports and in several reports on Iowa labor force issues. It parallels the belief, becoming more widely held, that educational and training institutions are failing in one of their basic missions: to prepare the young of the state and nation to be productive workers in an increasingly technical, complicated, and competitive world economy. In other words, too little is being invested in the human capital of each new generation of workers.

These concerns certainly warrant the careful attention of those who manage and make policy for Iowa's educational and training system. However, as is explained in Chapter 2, the customary measures of educational success do not show that Iowa's system is performing less well today than it has in the past. Further, the performance of the state's education and training system should not be judged by the quality of workers applying for particular jobs or available at a given wage. The quality of these applicants does not depend solely on the quality of the labor force; it depends also, and importantly, on the demand expressed (wages offered) by competing employers. Therefore, a business may see the quality of its applicants decline not because workers are less well prepared and able, but because the more highly skilled and trained workers are in greater demand and because the total labor force is growing more slowly. Competing employers may be bidding away the more able workers that the business could have hired in previous years, leading the business to conclude mistakenly that the quality of the labor force has declined.¹¹

¹¹ For example, as barriers to the employment of women were lowered in traditionally male occupations, women were bid away from traditionally female occupations. In teaching, nursing, secretarial, and clerical jobs, the supply of workers decreased and the costs of hiring workers increased.
Labor Force Utilization

In principle, labor supply will increase if the labor force is more fully utilized—that is, if a smaller fraction of the labor force is unemployed and underemployed. The Bureau of Labor Statistics estimated that in mid-1990 over 5 percent of the U.S. labor force was unemployed and that an additional 4 percent was employed part time involuntarily (for economic reasons). This unemployment and underemployment resulted in an estimated loss of about 6.3 percent of available labor force time. During the 1982–83 recession, the time lost was much higher—an estimated 11 percent in 1982. Similarly, despite the economic recovery of recent years, the underemployment rate for Iowa is still above the rates experienced in the 1970s.

These statistics indicate that there ordinarily is some "slack" in Iowa's labor market. If the demand for labor in the state increases because of economic growth, this slack allows employment to expand. As employment expands, the number of unemployed and underemployed workers diminishes. This underutilized part of the state's labor force is significant; reduction of the unemployment and underemployment to levels prevailing in the mid 1970s could increase labor supply, measured by total hours worked, by several percentage points.

The amount by which total labor supply can be increased by reducing the number of unemployed and underemployed workers is limited for several reasons. First, some unemployment is both necessary and desirable. Workers must often be unemployed to search for better jobs, jobs that make the best use of their skills. In a dynamic economy, in which labor demands are shifting among industrial sectors and geographic areas, such search activity can improve the efficiency with which labor is used. This frictional unemployment, estimated at 3 to 6 percent of the labor force, can be reduced but not eliminated by matching unemployed workers more quickly with the vacancies for which they are qualified. Second, some unemployed workers are on temporary layoff from permanent jobs. Third, unemployment rates in Iowa are usually low relative to the nation, and, as the average age of the U.S. workforce increases, national unemployment rates will be lower still.12

Likewise, there is only limited scope for increasing total labor supply by more fully utilizing the skills of employed workers. Although workers have at any time unused potential, it is the process of human capital formation

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12 High unemployment may lower the expected payoff from investment in human capital and make that payoff more uncertain, thereby deterring human capital investment and indirectly reducing future labor productivity. This potential influence on labor supply cannot be directly manipulated by individual states; if it is thought to be important, however, state leaders can lobby for national policies that promote full employment.
that turns potential to actual skill. This ordinary process of development is already reflected in historical data on the labor market. For example, from the 1960s to the present, the number of women participating in the labor force has increased tremendously, and this trend represents a transformation of potential labor market skills into actual skills. That transformation occurred partly because women were obtaining more education and education of a different type and partly because they were acquiring job-specific skills. However, it is difficult to think of these developments as "decreases in the underutilization of skills"; that term seems to refer to recruiting into the full-time labor force specific groups—for example, the physically or mentally impaired, or retirees, or those with child-care obligations. Such recruitment is likely to make only a slight contribution to the total labor supply.

Recent experiments have shown that unemployed workers can become employed faster (and the labor force can thus be better utilized) as a result of monetary incentives, particularly the payment of employment bonuses. During 1984–85 the Upjohn Institute, along with the U.S. Department of Labor and the Illinois Department of Labor, conducted an experiment in which unemployed workers received a $500 bonus if they obtained a job within 11 weeks of filing an unemployment insurance claim and if they held the job for four months. In a similar experiment conducted in New Jersey during 1986–87, claimants in the seventh week of an insured spell of unemployment could receive a bonus of one-half of their remaining benefit entitlement if they found a job within the next two weeks and held it for four months. The bonus offer declined progressively until it reached zero after the 18th week. Currently the states of Maryland and Washington are conducting experiments with reemployment bonuses. It is important to emphasize that workers can only be made better off by these plans; if they do not respond to the bonus offer, they retain the unemployment insurance benefits that they previously had.

These plans create impressive savings. In Illinois the bonus was a constant amount of $500; in New Jersey the payment varied with the size of the worker's remaining entitlement, averaging $1,600 when the worker became eligible for the bonus and declining by $160 per week. In New Jersey, the duration of unemployment declined on average by about one-third of a week, creating net savings to the state (after the cost of the bonus) of $58 per recipient. In Illinois the results were even more impressive: the length of unemployment declined by about 1.2 weeks, and the net savings to the state was $140 per recipient.
Employment Services

Public assistance in job search can lower the cost to workers of finding out about Iowa job openings. In doing so, it may decrease the numbers of unemployed or underemployed workers; the labor force may become better utilized. The mobility of workers between states may also increase. In periods of recession, providing information about jobs available in other states could increase the rate of out-migration, but in periods of economic expansion such information would help insure that Iowa employers do not face higher costs than employers in other states.

Iowa's Department of Employment Services (DES) is acting to improve dissemination of information about worker availability and job openings. Its mission has been revised to place greater emphasis on helping Iowa businesses and workers cope with anticipated changes in the workforce. While continuing to match applicants with jobs, it is increasingly serving as a broker for pools of jobs and pools of applicants. For example, all of the job orders placed with the department are now accessible at community colleges and vocational rehabilitation locations. Plans are to expand further the number of access points, possibly to libraries, secondary schools, universities, union halls, and courthouses. Further, the department plans to establish the 68 Job Service offices as resource centers for information relating to all workforce issues, including safety, labor markets, workers' compensation, child labor, and wage enforcement. A pilot workforce service center, planned to open in April 1991, will include a new service delivery concept and new technology to increase services to employers and workers. Job Service employer committees, which exist in over 40 Iowa communities and involve 700 employers, will be expanded to involve more employers in determining how DES can be a valuable resource to employers and workers.\footnote{This summary of goals and plans is based on a letter from Cynthia Eisenhauer, Director of Iowa Department of Employment Services, October 12, 1990.}

Tax and Statutory Barriers to Employment

It is sometimes argued that government regulations make employers less able to adapt to changing labor market conditions. For example, the financing of Unemployment Compensation, Social Security, and (until recently) Workers' Compensation make part-time employment or work-sharing arrangements more expensive per hour worked than is full-time employment. This difference arises because the programs set a maximum on the amount that must be contributed for each employee. For example, the Social Security system requires that workers and employers each contribute 7.65 percent of earnings on wages up to a maximum level of $51,300 in 1990.
This rule makes job sharing more costly in relatively high-paying jobs. Thus, a job paying a salary of $70,000 to one person costs $7,848.90 in Social Security contributions, divided equally between employer and employee. If the job were shared by two persons, the cost of the Social Security contributions would be $10,710 [equals ($70,000/2) x 15.3% x 2], again divided equally. At lower wage levels, the same principle affects employer costs for Unemployment Insurance.

Under these programs, there are limits to the benefits that an individual can receive, and therefore equity considerations suggest that there should be limits to payments. The obstacles that these ceilings pose to flexible work-time programs are not inadvertent; setting these limits has been a conscious goal of politicians since the 1930s, with trade-offs made to encourage certain industries and work organizations. Labor unions, for example, have favored the current financing method in part because it promotes stable full-time jobs. Therefore changes will involve real costs to some groups in society.

Relatively high tax rates on earnings may also discourage retirees and welfare recipients from participating in the labor force. Retirees who are under 70 years of age lose one dollar of Social Security benefits for every three dollars they earn over $9,360 per year. This loss of benefits amounts to a tax of 33 percent on earnings (in addition to income and payroll taxes) for retirees receiving Social Security benefits. Welfare recipients face similarly high implicit taxes, since cash assistance and in-kind benefits, principally Medicaid, are reduced as recipients earn more.

Minimum wage laws may increase the cost of hiring unskilled and entry-level workers if the minimum is higher than the free market wage. If it is set below this market-clearing level (as it appears to be in much of the U.S. today), it has no effect. The minimum wage law that took effect April 1, 1990 allows a lower minimum for teenage workers. A lower minimum for teenage workers is intended to encourage hiring and training of young people. It may also lower labor costs (increase labor supply) for some employers. Whether it is desirable on other grounds is a subject of sharp debate. A lower minimum for teenagers might displace older workers from some jobs. Moreover, working at low wage jobs may not be the most productive use of teenagers’ time; a number of recent studies have concluded that work is interfering with and lowering the quality of education received by U.S. secondary students.
Subsidies to Employment

The labor supply may be increased by subsidies that depend upon labor force participation, earnings, or hours worked. Such subsidies, whether cash or in-kind, affect labor supply in the same manner as does a reduction in employment-related taxes. At present, there is no financially significant program of direct cash subsidies. One in-kind employment subsidy, however, has gained significant political support and is funded at meaningful levels: child care assistance. While child care subsidies may increase labor supply, they may also create inequities and inefficiencies. Such subsidies, which are often focused on low income families, encourage parents with child care obligations to enter the labor force and place their children in the care of qualifying child care providers. It is not clear, however, that such parents should be given the same incentive to supply labor as parents without young children. Furthermore, subsidy programs require that bureaucracies be set up to dispense the subsidies and to monitor the child care providers. It would be more efficient and more equitable to use the same amount of public funds to increase the earned income tax credit, thereby increasing the after tax pay received by all low-wage workers.

Whether a subsidy takes the form of a tax credit, a cash subsidy, or an in-kind subsidy, the benefits may flow to others than the subsidy recipient. To the extent that a subsidy causes recipients to increase their labor supply, it either displaces other workers from employment or decreases real wages. If the former, then the additional income of the subsidy recipients comes at the expense of other workers. If the latter, then other low-wage workers receive a lower wage and lose income. As a result, producers and consumers capture some or all of the benefits of the subsidy: lower wages mean lower production costs and consequently higher incomes for producers and/or lower prices for consumers.

Immigration

A thorough analysis of immigration issues is well beyond the scope of this study. However, we can point out several important consequences of increasing immigration as a means of increasing the labor supply. Most obviously, greater immigration will allow more rapid growth of total national production (Gross National Product). Because population will also grow more rapidly, per capita GNP, a rough measure of the average living standard, may not grow more rapidly than it would have in the absence of greater immigration.
Whether per capita GNP grows will depend in part on the characteristics of the immigrants. If immigrants are skilled, the average living standard is more likely to improve. However, there will be less pressure to use other means of increasing the supply of skilled workers—for instance, by improving the system for educating and training new workers or for upgrading and improving the skills of current workers. If the immigrants are not skilled, their employers will have lower labor costs but the wages for resident unskilled workers will also be lower. As a result, wage inequality—the gap between skilled and unskilled wages—will increase.

In its 1990 session, Congress passed legislation that will allow total immigration of more than 700 thousand per year, an increase of about 200 thousand over the allowance under the old legislation. The intent is that additional immigration will be mainly skilled workers and professionals and their families.

Immigration policy necessarily reflects a trade-off between conflicting goals. Allowing greater immigration helps to control labor costs and keep domestic production competitive; but in doing so, it may lower real wages for at least some classes of workers. Further, communities that receive poorly educated and low income immigrants may face higher costs for schools and public welfare programs. Because greater immigration is not seen by all affected parties as a “win-win” policy, it is hotly debated. While we can in this report identify issues and trade-offs, we cannot point to an “optimal” policy that would resolve the issues and end the debate.

Besides affecting labor supply for the nation as a whole, immigration policy may differentially affect labor supply to individual states, especially in the short run. States and cities in which immigrants initially settle may enjoy increased supply (lower labor costs). But immigrant workers, like indigenous workers, gain by moving where terms of employment and living conditions are most favorable, and they may be expected to do so. Therefore, we can reasonably expect that greater immigration would have about the same long-term effect on labor supply in Iowa as in other states.

**Unionization**

Iowa's workforce historically has been slightly less unionized than the U.S. as a whole, a pattern that has continued in the 1970s and 1980s. During 1977–81, a period of generally tight labor markets in Iowa, the unionized fraction of the workforce averaged 23 percent in both Iowa and the U.S. (Table 12). However, the unionized fraction was increasing in Iowa and falling in the nation as a whole. During 1984–88, 15.6 percent of the Iowa work-
force was unionized, compared to 17.6 percent of the national workforce. The lower unionization rate for Iowa workers during this period was not due, as some might believe, to the difficult times that some Iowa industries encountered. Instead, it reflected the fact that the public sector is less unionized in Iowa than in the nation. During 1984–88, 13.0 percent of Iowa’s private sector employment was unionized, a share only slightly less than the 13.8 percent share for national private sector employment. Further, these percentages have been fairly stable over time. In contrast, during 1984–88, 26.4 percent of Iowa’s public sector employment was unionized, much less than the 36.3 percent share for national employment.

### Table 12

(Percent)

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<th>Year</th>
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</thead>
<tbody>
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</tr>
<tr>
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<tr>
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<tr>
<td>1980</td>
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<td>22.7</td>
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LABOR FORCE CONSTRAINTS ON ECONOMIC GROWTH

Will a labor shortage constrain the growth of the Iowa economy? The question can be stated more precisely: are labor supply conditions likely to deter new or expanding businesses from locating in Iowa when all other considerations point to Iowa as the best location? Will expected trends in the national labor force increase the cost of labor in Iowa relative to the cost of labor in other states?¹⁴

The answer to both of these questions is no, for several reasons.¹⁵ First, there is ample evidence that workers move to and from Iowa in response to changing labor demands. Second, Iowa has been exporting workers for some time: there was net out-migration of population from Iowa even in the 1970s, when employment in Iowa was growing more rapidly than national employment. Iowa employers may therefore have an advantage in competing in a tight labor market because they do not have to induce workers to move to Iowa from other states; they merely have to induce them to remain in the state. Third, there is little evidence that workers of a given type or skill require higher wage and benefit payments to work in Iowa than they would require to work elsewhere. That is, compensating wage differentials for workers in Iowa do not appear to be positive.

It is therefore reasonable to expect that employers who are choosing between Iowa and other locations will be able to hire in Iowa the number and quality of workers that they need at compensation costs no greater than those for workers with the same skills and abilities in other states.¹⁶ This is not to deny that labor costs are important. Quite the opposite: labor costs are a large share of total costs for most businesses. Nor is it to deny that labor costs vary from one state to another. Instead, the point is that, over a period of years, the cost of any given type of labor varies from one state to another mainly because of differences in amenities that give rise to compensating wage differentials.

Worker mobility, the ability and willingness of workers to move from one state to another in response to compensation differentials, is key to the above

¹⁴ Slower labor force growth will translate into slower growth of the national economy, all else being equal. This consequence is inescapable. But slower growth of the national labor supply does not necessarily imply slower growth for any single state. The demand for products produced in the state, determined mainly by its comparative advantages, will determine the growth of both its economy and its labor force and population.

¹⁵ Iowa Workforce 2010 argues that labor availability may constrain growth (p. 12) and refers to a possible shortage (p. 3), but provides little analysis and data to support these conclusions. The 1988 report of the Labor Availability Task Force to Governor Branstad, Labor Availability Issues and Recommendations, states, "In interviews with employers, community college economic development specialists, and local Job Service staff, the Task Force determined that Iowa is not experiencing a numbers shortage in the workforce. Rather a series of structural problems exist related to skill level needs, uninformed employers, insufficient description of job openings, and a general lack of knowledge about where to locate qualified individuals to fill open positions" (p. 4).

¹⁶ This conclusion is implicit in the BEA projection that, from 1988 to 2000, the growth rate of private employment in Iowa will almost equal the national growth rate.
reasoning. However, there are undoubtedly workers in Iowa (and every state) who are unlikely to move because of either their own unemployment or higher compensation in another state. Does the immobility of some workers mean that employers in Iowa, or any other state, may pay compensation below national levels because part of their labor demand is met by a "captive" supply of immobile workers?

In the short run, a few years, the answer may be yes. When deciding where to locate, however, businesses must be concerned with the wage and benefit costs they will incur in the long run. All workers may not be mobile, but many are, particularly young entrants to the labor force. These workers move into geographic areas and occupations that offer the most compensation, allowing for course of amenity differentials. Relatively generous compensation will attract these workers to geographic areas and occupations in which labor demand is increasing, and relatively low compensation will prevent them from replacing workers where labor demand is decreasing. In the short run, some Iowa employers may be able to pay compensation below national levels. But over time they must plan on offering compensation packages that are competitive with those offered by employers in other states.

Because products, population, and capital can move freely across state borders, economic growth in any single state is determined mainly by growth in the demand for the products that the state has a comparative advantage in producing. Comparative advantage is determined by factors—such as natural resources and location—that are not mobile but are specific to the state. If workers were not mobile, then a state which had a labor force more highly trained, more productive, and more reliable than that in other states would have a comparative advantage in producing products and services that require such labor. But many workers are mobile; as a result, a state's economic growth is determined by the demand for the products that the state has a comparative advantage in producing.
labor force will consist of highly skilled and trained workers only if such workers are demanded by the industries for which the state has a comparative advantage. The labor force in a state at any given time thus reflects the demand for labor in that state; demand for labor is in turn driven by demand for products produced in the state.

This fact is clearly illustrated by Iowa's experience over the past two decades. Demand for products produced in Iowa increased more rapidly in the 1970s than in the 1980s, and the growth of employment was correspondingly higher in the former decade than in the latter. Iowa's labor force first grew and then contracted in response to the changing demands for Iowa-produced products. Slower growth of the nation's labor force over the next decade or so may result in upward pressure on labor costs. But there is no reason to expect that pressure to be greater in Iowa than elsewhere.

**INCOME INEQUALITY AND LIVING STANDARDS**

Average annual wages and salaries received by Iowa workers, adjusted for inflation, have fallen since 1979. Real (inflation adjusted) average hourly wages have likewise fallen in all sectors except finance, insurance, and real estate. In two sectors, services and wholesale and retail trade, average hourly wages are barely above the poverty threshold, the rate of pay at which the annual earnings of a full-time worker would exactly equal the "poverty line income" for a family of four. Many full-time jobs therefore pay barely enough, and some pay too little, to maintain a family of four above the poverty line.

Although Iowa's total employment has increased since 1979, that growth has not been sufficiently concentrated in high-wage sectors to maintain the average level of real wages. Moreover, the average income of Iowa workers has fallen relative to that for workers in the nation as a whole since 1979. This outcome reflects the fact that the industries in which Iowa has a comparative advantage are industries in which real wages have been falling.

The decline in average real earnings of Iowa's workers, both absolutely and relative to the national average, cannot be attributed to poorer preparation of Iowa's young people for entry into the labor force. As Chapter 2 noted, the commonly used criteria do not indicate that Iowa's educational institutions are performing less well today than they were one or two decades ago. Increasing the education of Iowans in an effort to increase their productivity would increase the incomes of those individuals and would increase the average education and productivity of the national labor force. It would

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20 According to the U.S. government's definition of poverty, a family is termed "poor" if its actual annual income is less than its poverty-line income.
not affect the demand for labor by Iowa employers, however, and therefore would have little effect on the average earnings of individuals employed in Iowa.21

Analysts do not agree on why average real wages have stagnated nor why wage inequality has increased at the national level. Some believe these trends imply that the nation is not investing enough in human capital and is thereby creating a shortage of skilled workers. More specifically, these trends are often believed to be due to a decline in the general education, preparation for work, and hence productivity of new entrants into the labor force. Even if this view were accurate, the slower rate of growth in labor productivity should mean only slower growth in real wages, not stagnation or decline. And no matter what the explanation for declining wages, higher productivity growth would help to stem the decline.

The Commission on the Skills of the American Workforce argues that employers adapt the workplace to the skills of the available labor force. It concludes that current wage inequality reflects a workplace organization designed to use unskilled and hence low-wage labor. The Commission argues that American industry can and should reorganize the workplace to utilize more skilled labor, while the American education system should reorganize to supply more highly skilled workers.

Employers have an incentive to undertake such reorganization when it is in fact cost-effective, and there is some evidence that they have been doing just that. If workplaces were being reorganized to use relatively more skilled labor, then the demand for skilled workers would be increasing, as would participation in post-secondary education. Both these effects have occurred. The adjustments that the Commission on Skills calls for are apparently taking place. One might reasonably conclude that the Commission’s prescription will be implemented automatically if production technologies are flexible enough that producers can use more skilled labor and yet produce at lower costs. If this condition is not met, it will not be in employers’ self-interest to follow the Commission’s prescription, and it is not clear that the nation would be better off if employers were to do so.

AGE AND EDUCATION OF POPULATION

In the absence of migration, the education level of the Iowa population (as indicated by such measures as the percentages who have completed high school and college) would be determined by the rates at which young Iowans complete high school and college. These rates are in fact above the national average, according to statistics presented in Chapter 2. But

21 High quality public education adds to a state’s amenities; it may therefore increase the supply of labor to the state’s employers by increasing workers’ willingness to work in the state at any given wage. Labor supply is enhanced in this case because the state provides a high quality education for workers’ children rather than because it educates and trains the workers themselves.
the percentages of Iowa residents who have completed high school and college are below the percentages of young Iowans (25 years old or less) who complete high school and college, and the percentage of all Iowans who have completed college is below the national average (1980 Census).

These statistics imply that net migration has reduced the average educational level of Iowa's population; they are the basis for the concern that, as young educated people migrate from Iowa, the remaining population will be relatively old and relatively uneducated. These statistics also support our earlier conclusion that because of worker mobility the education and skill levels of Iowa's population tend over time to reflect the labor demands of the industries in which Iowa has a comparative advantage, rather than the extent to which the state's young people are educated.

**SUMMARY**

Because workers, especially young labor force entrants, move among geographic areas and occupations in response to wage and benefit differentials, the cost to employers of hiring any particular type of worker tends to be the same in all states, except for compensating wage differentials. These differentials are not due to characteristics of workers; they reflect interstate differences in such amenities as cost of living, climate, taxes, and public services. There is little reason to expect that Iowa employers will have to pay compensating wage differentials during the coming decade, and therefore little reason to suppose that Iowa employers will be at a disadvantage vis-a-vis employers in other states. Quite the contrary. There are indications that amenity differences, especially the cost of living and the quality of public services, favor Iowa locations over locations in some other rapidly growing states.

The U.S. labor force is projected to grow more slowly in the 1990s than it did in the previous two decades. As a result, wages and benefits may increase more rapidly nationwide in the 1990s than they have since 1975. Rising wages will in turn provide incentives for a number of adjustments. They will trigger increased investment in human and physical capital, aimed at increasing labor productivity. They will lead employers to adjust the workplace organization and terms of employment (compensation, work options, working conditions) to accommodate the changing character and diversity of the working age population. They will strengthen the current incentives to locate production in low-wage countries. And they will increase pressure for a more liberal U.S. immigration policy.

22 Only aggregate statistics such as these tell the effect of migration. Numerous studies of where Iowa college graduates take their first jobs do not tell us about the net flow of college graduates across Iowa's borders because they do not show how many graduates come into the state and how many of those graduating were initially from out of state.

23 An example is an article by Michael Gartner in the Wall Street Journal (26 April 1990, p. A17), which states that "educated young people are a major export of the state."
Whatever the overall effects of these adjustments, Iowa employers can expect to be able to hire, at nationally determined wage and benefit levels, the number and quality of workers that they need. For Iowa employers, labor shortages will be signalled by increases in labor costs rather than by absolute unavailability of workers. Such labor cost increases will be shared by employers in other states; there is no reason to expect that slower growth of the national labor force will put Iowa employers at a comparative disadvantage. Iowa's economic growth will not be constrained by the size and characteristics of its current workforce. Instead, its growth in the 1990s will be determined, as it has been in the past, by the growth in demand for products that Iowa has a comparative advantage in producing. Also in line with past experience, Iowa's labor force will be molded through migration to meet the demand for labor in the state.
Iowa has numerous public programs for educating and training workers; Table 13 lists the more important of these, and Appendix A contains more detailed descriptions. These programs may affect the supply of labor, and particularly the supply of skilled labor, in Iowa; because of labor mobility, they may also affect the labor supply in the nation as a whole.

Federal government funding for these programs is provided under the Adult Education Act, the Carl Perkins Act for Vocational Education, and the Job Training Partnership Act (JTPA). In Iowa, many of the programs supported by these acts are administered by the departments of Economic Development, Education, and Employment Services. Programs overlap considerably in their goals and in the actual services they provide.

Many public programs for educating and training workers help disadvantaged and structurally unemployed persons to enter or reenter the workforce. To an important extent, these programs are necessary because formal education failed to provide their clients with the skills needed to be productive and self-supporting workers. More generally, the programs are designed for clients who face various barriers to becoming employed, and eligibility is typically keyed to characteristics of the trainee, such as a low income or a handicap. Some clients lack job skills, education, English-language proficiency, or work habits; others have disabilities that cause them real or perceived difficulties in obtaining jobs; still others face artificial barriers due to discrimination. There are also programs that assist employers in recruiting and training new workers or retraining current workers; employers are as much the clients of these programs as are workers.

Most training and education programs increase general skills, and some also teach job-specific skills. General skills, those that the employee can take to the next job, add to the wage a worker can command. Education in general skills includes remedial reading and math, job search training, and development of interviewing skills. Specific skills, preparing an individual to do a specific job in a particular company, are usually not transferable among employers.

Whether they provide general or specific skills, education and training programs may increase the number of persons who have basic workplace skills and are therefore able to enter the labor market. They may also convert
<table>
<thead>
<tr>
<th>Program</th>
<th>Primary Client</th>
<th>Number of Clients (annual average)</th>
<th>Funding</th>
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<td>Secretary's Discretionary</td>
<td>mass layoff workers</td>
<td>1,000</td>
<td>federal</td>
</tr>
<tr>
<td>Older Individuals - Title IIA</td>
<td>55 years and older</td>
<td>800</td>
<td>federal</td>
</tr>
<tr>
<td>Veterans - Title IVC</td>
<td>veterans</td>
<td>50</td>
<td>federal</td>
</tr>
<tr>
<td>Trade Adjustment Act</td>
<td>foreign trade layoffs</td>
<td>1,200</td>
<td>federal</td>
</tr>
<tr>
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<td>U.I. claimants</td>
<td>240</td>
<td>federal</td>
</tr>
<tr>
<td><strong>TRAINING CURRENTLY EMPLOYED WORKERS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iowa Retraining</td>
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<td>39 businesses</td>
<td>state</td>
</tr>
<tr>
<td>Customized Training</td>
<td>business</td>
<td>5,112 individuals</td>
<td>state, federal, private</td>
</tr>
<tr>
<td>Vocational Training/Retraining Education</td>
<td>individuals/business</td>
<td>331,144 individuals</td>
<td>state</td>
</tr>
</tbody>
</table>
poorly trained and unskilled workers into well-trained and skilled workers. If they increase the relative supply of skilled labor, these programs may thereby lower the cost of skilled labor relative to the cost of unskilled labor.

The gains from publicly funded programs may not accrue solely or even primarily to the person trained, but may be distributed to other groups as well: the consumers of products produced with skilled labor, for instance, or the owners of land and capital which, along with labor, are used in producing goods and services. The distribution of gains will depend on conditions in the markets for products and services and on conditions in the markets for labor and other factors of production. Further, because workers are mobile, the benefits of investment in general human capital—that is, increased worker productivity and higher incomes—tend to be spread among all states, rather than being concentrated in the state in which the investment is undertaken. More generally, any factor that increases the labor force participation rate and productivity of the U.S. working age population as a whole also increases labor supply to employers in Iowa and other states.

The following discussion focuses on programs authorized and funded under the JTPA and on Iowa programs, including area college and high school programs.

**JOB TRAINING PARTNERSHIP ACT**

The Job Training Partnership Act establishes programs that prepare youth and unskilled adults for entry into the labor force and that offer job training to individuals—principally the economically disadvantaged—who face serious barriers to employment and who need such training to obtain productive employment.

Approximately $15 million are allocated annually by the federal government to the state of Iowa for the Comprehensive Adult and Youth Program. This program, which serves approximately 12,000 individuals yearly, is the largest program for helping the economically disadvantaged enter the workforce. Ten percent of program participants may be individuals who are not economically disadvantaged if they face other barriers to employment. These might be individuals with limited English-language proficiency, displaced homemakers, school dropouts, teenage parents, the handicapped, older workers, veterans, those with a criminal record, alcoholics, or addicts.

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1Economic disadvantage means that total family income exclusive of unemployment compensation, child support payments, and welfare payments is less than the poverty level or less than 70 percent of the lower living standard income level (whichever level is the larger amount).
The program provides on-the-job training, institutional skill training, remedial and basic skill training, retraining, vocational exploration, work experience, and job search services. While participating in JTPA, some clients receive needs-based payments, child care assistance, transportation reimbursement, and training-related equipment.

Other JTPA programs include the Summer Youth Employment and Training Program, State Education Coordination and Grants, Migrant and Seasonal Farmworkers Program, Dislocated Worker Program, Secretary’s Discretionary Dislocated Worker Grants, Older Individuals Program, and Veterans Programs.

**IOWA PROGRAMS**

**Iowa Industrial New Jobs Training Program**

Several programs for worker training are funded either fully or primarily by the state. The largest is the Iowa Industrial New Jobs Training Program (INJTP). This program, also known as 280B (House File 623, Chapter 280B), is designed to help a firm lower its costs of recruiting, screening, and training workers when the firm locates or expands production in Iowa.

The program lowers employers’ costs by providing specific services needed by the company; such services may include skill assessment, orientation, pre-employment training, instructional salaries, seminar fees, and travel expenses. The on-the-job training component of the program can cover up to 50 percent of wages and fringe benefits during the training period. The New Jobs Training Program may assist workers moving from less-skilled to more-skilled status. However, the direct client is the business; the business controls the characteristics of the individuals hired.

The area colleges are the primary service providers under INJTP. Funds are derived from the sale of tax exempt and taxable certificates and repaid over 10 years through the diversion of property taxes on the value of new buildings, machinery, and equipment and/or through a diversion of a portion of the new employee’s state withholding taxes. Since 1983, $117 million in certificates have been sold.

A similar program is available for small businesses: the Small Business New Jobs Training Program. The eligibility requirements and services provided by this program (House File 766, Chapter 280C) are the same as those for the Industrial New Jobs program.
Promise Program

PROMISE (Promoting Independence and Self-Sufficiency through Employment) is an Iowa program that assists recipients of AFDC (Aid to Families with Dependent Children). The program provides job search assistance, classroom training programs ranging from basic education to post-secondary education, and work experience.

Other Iowa Programs

Other Iowa programs are the Iowa Conservation Corps, the Iowa Corps, the Iowa Retraining Program, and the Work Force Investment Program. The last is a new program that aims at increasing Iowa’s pool of available labor by providing training and support services to hard-to-serve populations: displaced homemakers, dropouts and potential dropouts, members of ethnic minorities, the handicapped, the homeless, immigrants, individuals with reading skills below a seventh grade level, older workers, substance abusers, and teen parents or pregnant teenagers. The services available under the Work Force Investment Program include entrepreneurial training, institutional skill training, job search, on-the-job training, pre-employment training, remedial and basic skill training, retraining, tryout employment, upgrading, vocational exploration, and work experience.

Augmentation of labor supply is a direct and important objective of some programs, for example INJTP. Other programs mix that objective with other objectives; for example, PROMISE aims to help welfare recipients become self-supporting, to reduce the cost of welfare for state taxpayers, and—probably quite incidentally—to increase the labor supply.

TRAINING IN THE PUBLIC EDUCATION SYSTEM

Iowa’s public education system has a number of programs that provide workplace skills as part of their general education activities. It also has programs for persons who have made their way through the formal public education system without acquiring some or all of the skills needed to find appropriate employment.

Iowa’s 15 community colleges are public two-year “open-door-admissions” institutions. They provide remedial help for individuals who do not have the skills needed for entry into career or college transfer programs. The area colleges provide customized job training aimed at locating and preparing individuals for work in a specific business. They also offer instruction that is designed to prepare individuals to enter or re-enter the work place
or to retrain or upgrade workers' skills. Enrollment in the community colleges by major program category is shown in Table 14.

Iowa's high schools, in cooperation with post-secondary institutions and businesses, provide vocational and workplace training at the secondary level. Under the Jointly Administered Program, a local secondary school and a merged area school agree to administer instructional program(s) and supportive services for students by sharing personnel, curriculum, facilities, and other resources. Senate File 449 acknowledges the importance of technical training and sets out requirements for such training at the high school level.

**SUMMARY**

Even this partial survey of Iowa's programs for educating and training workers indicates that the state has a broad spectrum of such programs. There are no apparent gaps that call for new programs. The state may need, however, to better inform potential clients that these programs are available and, as in any area of public policy, the state needs to evaluate these programs in order to improve their effectiveness and reduce duplication and overlap of activities.

<table>
<thead>
<tr>
<th>Table 14: Community College Enrollment in Iowa, 1987-89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment Category</td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Arts &amp; Sciences</td>
</tr>
<tr>
<td>Vocational/Technical Preparation Programs</td>
</tr>
<tr>
<td>Adult Vocational Training and Retraining</td>
</tr>
<tr>
<td>General Continuing Education</td>
</tr>
</tbody>
</table>

*Source: Division of Community Colleges, Iowa Department of Education.*
Both our analysis and the projections of the Bureau of Economic Analysis (BEA) conclude that Iowa’s economic growth over the next decade or so will not be constrained by the labor supply available. Furthermore, the public and private sectors in Iowa are educating and training workers better than are most states; Iowa is well above average on all of the dimensions by which educational performance is customarily measured. It is difficult to escape the conclusion that the nation’s labor force would be much more productive if all states were to perform as well as Iowa in preparing individuals for entry into the labor force and in upgrading the skills of those already there.

Nevertheless, a number of actions hold promise of increasing the labor supply, increasing workers’ productivity, and increasing their incomes. These actions, if undertaken in a single state, would have little overall effect; if undertaken in all states, the effects would be significant. Iowans can act both to “do their share” and to set an example; action here may encourage action elsewhere.

NATIONAL POLICIES TO INCREASE LABOR PRODUCTIVITY

Because labor is mobile, any factor that increases the national rate of participation in the labor force or promotes the productivity of the U.S. working age population as a whole also increases labor supply to employers in Iowa. That is, each state’s labor supply—the number and productivity of workers available at a given compensation cost—depends on decisions made by individuals and governments throughout the nation. Iowans can therefore act to increase the state’s labor supply by calling for and supporting national policies to increase the productivity of the nation’s current and future workforce and the efficiency with which it is used. Promoting such policies is one of the more important means by which the citizens of any state can work to increase its labor supply.

These policies fall into two broad categories. First, some policies would increase the nation’s stock of human capital by improving the education, training, and health of its young (its future labor force) and of the current working age population. Almost one-fifth of the nation’s children are growing up in families that are poor by the federal government’s poverty standard.
Programs that have proven successful in improving the health and education of these children, notably Headstart and WIC (Women, Infants and Children—a nutrition program for pregnant, low-income women) are not now funded at levels that provide for all eligible children. Iowans can call for full funding of these programs on both economic and humanitarian grounds. Some strategies for improving U.S. public education may also deserve support.

A second category of policies would increase utilization of the labor force by reducing barriers to labor supply that are implicit in federal and state tax systems and social welfare programs—Aid to Families with Dependent Children (AFDC); Unemployment Insurance (UI); Old Age, Survivors, Health, and Disability Insurance (OASHDI); and Supplemental Security Income (SSI). Among the more promising are proposals that would reduce disincentives to welfare recipients and retirees who might otherwise enter the workforce.

Of course, an increased labor supply for employers in a particular state is not the most important payoff to policies that enhance the productivity of the nation’s labor force. Such policies may also improve the welfare of workers and strengthen the long-term competitiveness and viability of the nation’s economic and political institutions. Moreover, not all policies promising such results are equally desirable, and not all should be implemented. Some investments in human capital, achieved through education, training, and health policies, may not yield a return that justifies their cost. Likewise, some features of tax and social welfare systems that adversely affect work incentives may nevertheless be justified on other grounds, such as fairness and ease of administration.

**IMPROVING AND ADVERTISING IOWA’S AMENITIES**

For state and local governments in Iowa, the best strategy for increasing labor supply is to implement changes in their organization, procedures, and activities that would allow them to provide public services more cost-effectively. That is, they should try to increase the value of public services and infrastructure or reduce the cost of those services—education, police and fire protection, roads and highways, health and hospitals, parks and

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2 Iowa’s PROMISE (Promoting Independence and Self Sufficiency through Employment) is an important example of such a program. It supports training of AFDC recipients and allows them to continue to receive Medicaid coverage while working. But it is presently underfunded; Iowa Department of Employment Services statistics show that in December 1990 there were 1896 individuals who were eligible for but did not receive training because of lack of funds.
recreational facilities. Such services and the taxes that pay for them are the most important of the controllable factors that affect the wage at which workers will work in Iowa.

We cannot say with certainty which public services have greatest amenity value for Iowa workers. But, by any reckoning, education would rank high among the factors that affect the willingness of workers to live and raise children in the state. Maintaining and improving the high quality of Iowa’s public education system is therefore one of the more promising strategies that Iowans can follow to increase labor supply.

Whether improvements in public services and infrastructure add to amenity values depends on the cost of the improvements and how that cost is distributed. Improving public services can reduce amenity values and decrease labor supply if the taxes that workers pay to finance the service improvements exceed the value of those improvements. For this reason, a second important means of increasing amenity values would be to reduce the fixed or overhead costs of government by consolidating governmental units, reducing duplication and overlap of government activities, promoting intergovernmental contracting and sharing of services, and reducing public infrastructure investment, for example in roads, that serves too few people to justify its cost.

It is beyond the scope of this study to offer detailed justifications for these and other means of increasing the cost-effectiveness of Iowa’s public sector. However, a strategic plan for Iowa’s economic development, prepared in 1987, does identify and provide rationales for a number of measures that would increase the amenity value of public services. Those recommendations deserve careful consideration.

Public policy at the state and local level has little direct influence on many of the market prices of housing, food, transportation, and other goods and services that in large measure determine the cost of living. However, local governments can influence housing costs as they set out building codes and zoning ordinances. They should, therefore, ask on a continuing basis whether such codes and ordinances are increasing housing costs unnecessarily. For example, they should determine whether it is possible to reduce housing costs, without compromising safety, by removing restrictions on the use of particular building materials and procedures or otherwise changing building codes, by zoning more areas for multifamily dwellings, and by allowing more units per acre.

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Workers may have incomplete information about the amenities of the various states in which they might work. There is, consequently, the major challenge of publicizing, advertising, and convincing others of the amenity value of Iowa locations. State government could help with such publicity. In particular, the Department of Employment Services could, as it publishes information on job openings, also advertise Iowa's amenities and quality of life to in-state and out-of-state workers. The Department could also develop means of providing information about Iowa to workers—managerial, technical, and professional—who typically do not use its services in their job searches. Iowa employers and business and civic leaders could take the initiative in efforts to advertise and improve amenities and the quality of life in their respective communities. The perception that a community is "progressive" can aid in recruiting and retaining workers, and not just in attracting business and industry.

EDUCATION AND TRAINING

Iowa's publicly funded programs for educating and training workers have no apparent gaps that call for new programs. The state may need, however, to better inform potential clients that such programs are available, and it should continuously evaluate its programs to improve their effectiveness and reduce overlap of activities. Without studying and comparing programs in depth, it is not possible or appropriate to suggest revamping programs or creating new ones.

Programs to expand labor supply through public education and training may in the short run increase the supply of labor to Iowa employers, but over time that increase will be exported, because of labor mobility, to the benefit of employers in other states. The benefits of such programs cannot

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4 Information about amenities and quality of life is routinely supplied by consultants who assist in the placement of managerial and professional employees and advise companies about site selection. Such information, however, is less readily available from private sources for individual middle- and low-income workers.

5 This conclusion is reinforced by a recent study by John Hartwig of Iowa Department of Education and R. Dean Wright of Drake University, A Study of the Impact of Iowa Community College Continuing Education Programs. The study was conducted for the Iowa Department of Education by Drake University in cooperation with the Iowa Association of Community College Trustees, the Iowa Association of Community College Presidents, and the Community College Adult and Continuing Education Deans and Directors Association.

In October 1990, the study surveyed firms, many of which had been served by Iowa's community colleges in the past three years, and individuals who had been enrolled in adult training/retraining programs within the previous 3–12 months. Approximately 90 percent of the 500 firms responding said that the community college adult training courses met their needs, and 93 percent said that the courses met the needs of their employees. Apart from its positive findings regarding adult continuing education in Iowa, this study indicates the high priority that the Department of Education assigns to meeting the needs of workers and employers.
be captured and retained within the state that undertakes the investment, and states should not expect the fruits of their individual actions to accrue mainly within their borders. The education and training efforts of a single state, especially a small state such as Iowa, have only a minor effect on that state’s and the nation’s labor supply; collectively, the actions of all states largely determine the skills and productivity of the nation’s labor force. Recognizing this fact is not a case for inaction, however.

It is widely felt that the education and skill level of the U.S. labor force has been decreasing and that public elementary and secondary schools are responsible in part for the decline. Reflecting this concern, an increasingly common recommendation is that states should define public education goals and develop measures of the success of their schools in achieving those goals. This call for “results-based” reform has a great deal of appeal at a high level of generality. But it becomes controversial once efforts are made to implement it, largely because it is difficult to measure and test for success in achieving objectives.6

The Commission on the Skills of the American Workforce, among others, correctly argues that the education system in the U.S. does not provide as much assistance as systems in some other countries for students making the transition from secondary school to work. In Germany, which may have the best system for that purpose of any country, high schools arrange for employers to provide occupational information directly to students in the schools and to provide intern-like positions for some of the craft occupations. Moreover, each German employer must certify individual workers as having mastered the equivalent of journeyman status in a specialization. The employer must either pay for the training or pay a tax that funds the training.

For this system to work, however, students who are not going to college have to be identified. The education system in Germany, as in Britain, Holland, and France, identifies early those who will go on to university (in those countries, only around 10–15 percent, a far smaller proportion than the 50 percent in the U.S.). Since students who are not university-bound will not be in the same classes and usually not in the same schools as students who are, it is easy to provide them with information on employment and to arrange internships and apprenticeships. For the U.S., there is the

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6 Basic reading, writing, mathematical, science, and communication skills can be tested, and most school systems currently do so, often using the Iowa Test of Basic Skills. Many high school juniors and seniors also take tests of preparation for college, usually the SAT and ACT. There is far from general agreement that these or any other set of standardized tests can be used to gauge accurately the success of public schools. Further, as explained in Chapter 2, by all of these standard tests, Iowa’s public education system is performing quite well.
question of how to manage the transition from school to work when only a fraction of the high school population will be making that transition immediately.

One possibility is suggested in the fringe benefits subcommittee report: schools and local businesses could arrange summer internships and work-study programs to introduce students to the world of work. More generally, business leaders could be more active in working with post-secondary educational institutions to determine whether there is need and potential for expanding their internship, cooperative education, and placement programs. They should also work to express their skill needs to public education institutions.

Public/private educational partnerships have not been implemented on a continuing and system-wide basis in any state. Whether it is feasible and desirable to do so in Iowa is a question that deserves study by the Department of Education, along with the question of whether there is in general a need for improved counseling of those students whose career tracks do not include college. Since internships and work-study programs would in the main provide students with general rather than employer-specific skills, it would not be in the interest of individual employers to initiate such programs. The Department of Education will therefore have to take the lead in encouraging and facilitating work-study and internships if they are to come into wide use.

It is debatable whether increasing the labor supply to Iowa's employers should be a major determinant of its public education policy. Many would argue that the primary objective of Iowa's public educational institutions (elementary, secondary, post-secondary) has been and should be to provide young Iowans with a human capital endowment—the general and basic skills that they need to be productive and self-supporting citizens wherever they reside. In this manner, education adds to the national labor supply, and it may incidentally affect the quantity and quality of labor available to Iowa employers. But the primary motive for public investment in human capital probably is to endow individuals with opportunity, not to increase the state's labor supply. Recognizing this motive puts the outflow of educated people from Iowa in a different perspective.

WORK OPTIONS AND TERMS OF EMPLOYMENT

Many of Iowa's employers recognize that their labor costs and the stability and flexibility of their workforce are affected by terms of employment other than wages: work options, working conditions, fringe benefits, job securi-
ty, and opportunities for on-the-job training and advancement. That is clear from the subcommittee reports on fringe benefits, work options, and hiring and recruitment. Employers compete for workers by adjusting these nonwage dimensions of employment. They do so to minimize labor costs over time, to recruit and retain qualified workers, to increase operational flexibility, and to increase worker productivity.

The subcommittee reports explain that the same configuration of fringe benefits, flexible work options, on-the-job-training, and working conditions will not be best for all businesses. Arrangements that lower the overall costs for one business may increase costs for other businesses. It is therefore not possible to prescribe in general how these alternatives should be used. However, as the reports emphasize, employers will find themselves at a disadvantage in competing for workers if they are not innovative and flexible in their personnel policies. The nation's workforce is changing, and employers can adapt to those changes by adjusting their work options, workplace organization, fringe benefits, and recruiting practices. Although there are numerous private and public sector sources to which employers can turn for information on these matters, there may be some need for additional public provision of information, especially to small employers.

There are barriers or disincentives to the use of some work options. But there are also reasons for what appear to be arbitrary disincentives to particular options, such as job sharing. In general, the effects and desirability of such disincentives should be reviewed. The unemployment compensation tax is a particular candidate for review, as is the implicit tax by which Social Security benefits to retirees are reduced when their annual earnings exceed a specified amount (in 1990, $9360 for persons of age 65–69).

INCREASING LABOR UTILIZATION

Public assistance in job search may increase labor force utilization—that is, it may decrease unemployment, underemployment, and mismatch of workers and jobs. Such assistance has typically taken several forms, such as providing access to job listings and information about the skill requirements for different types of work. This assistance lowers the costs that in-state and out-of-state workers incur in finding out about Iowa job openings. It may also increase mobility between states. Improving information about job availability in other states could increase the rate of out-migration in periods of recession, but it would also help to assure that Iowa employers do not face higher costs than employers in other states during periods of expansion.
Iowa's Department of Employment Services is currently providing assistance in a variety of forms. It is also planning to make its services more accessible by working with schools, community colleges, and vocational rehabilitation centers. It is both possible and desirable for the Department to provide more accurate and timely information, more widely disseminated to both workers and employers, on labor market conditions—wages, fringe benefit practices, use of various work options and workplace organizations, number and nature of job vacancies, and number and qualifications of job seekers. The Department of Employment Services is working toward these goals.

The reemployment bonus plan described in Chapter 3 has also been successful in some areas in reducing the duration of unemployment. The Iowa Department of Employment Services should investigate the possibility of implementing such a plan.

Other public sector policies that help individuals to enter or remain in the labor force include the PROMISE program, which allows welfare recipients to work and still retain medicaid benefits, and the GED (General Education Degree) program, which allows school dropouts to complete high school. Although these programs may affect labor supply, the potential effect is small. Such programs are better justified as means of assisting the individuals involved than as means of increasing the total labor supply.

Employers in both private and public sectors can increase labor force participation by offering flexible work schedules. As the subcommittee report on work options explains, a flexible work schedule gives employers better access to workers in two-income families, retirees and others who want less than full-time employment, workers who need a flexible schedule to accommodate family obligations and child care availability, former employees (typically retirees) who have company-specific knowledge and work skills, youths who must work less than 40 hours per week, and disabled or seasonal workers. However, since the cost and benefits of implementing flexible work schedules will vary from employer to employer, this approach to increasing labor supply cannot be urged upon all employers. Employers already have an incentive to implement flexible schedules when doing so would be cost-effective.

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7 For example, if welfare reforms were to induce one-half of the adults currently receiving AFDC support to become full-time self-supporting workers, a very optimistic outcome, the increase in labor supply would be only 1 percent of current employment.
ECONOMIC DEVELOPMENT IMPLICATIONS

Iowa currently has a number of programs, administered primarily by the Department of Economic Development, aimed at encouraging new businesses to locate in the state and existing businesses to expand. Since labor cost is a key variable in almost all business location decisions, these programs should be based on a clear understanding of how labor supply influences economic growth. Some of the findings of this study therefore have significant implications for the state's economic development policy.

First and most important is the fact that interstate differences in wage and benefit payments for a given type of labor tend to be eliminated over time except for compensating wage differentials. Over the long run, labor costs can be relatively low in a state only if it scores relatively high on the scale of nonwage amenities; to be "low in labor cost," a state must be "high in amenities." For this reason, state policies that enhance workers' wellbeing can also promote economic development: they lower labor costs for businesses that choose to locate in Iowa. Further, some policies appear to promote development because they increase the return to capital located in Iowa. But these policies may be counterproductive if they simultaneously reduce the return to labor. For example, sales and income taxes, the major shares of which are paid out of labor income, are sometimes used to finance property tax relief for landowners or to provide property tax abatements, grants, low-interest loans, and other subsidies to businesses. Such policies are a two-edged sword; they have an ambiguous effect on total employment and economic activity in the state.

Second, the size and characteristics (skills and occupational mix) of Iowa's labor force adjust over time to labor demands, which in turn reflect the state's comparative advantages in production. Efforts to publicize the state and its economic development programs should reflect this fact, rather than speaking of "the Iowa labor force," meaning those who are currently employed in the state. It is especially important to recognize that the number and characteristics of Iowa's unemployed are not good indicators of the

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8 The economic development task is often seen as one of attracting new employers to the state and encouraging existing Iowa employers to expand in order to provide jobs for a given set of workers—the Iowa workforce. That is, economic development programs typically focus on increasing the demand for labor in the state.

9 The Department of Economic Development's strategic plan provides a detailed analysis of the pitfalls of economic development policies that are based on taxing one group of resource owners, for example workers, to provide subsidies and services to another, for example owners of land and capital. Iowa Department of Economic Development. 1987. New Opportunities for Iowa: Strategic Planning Recommendations for Economic Development. Des Moines, IA.
labor pool available to employers who wish to either locate new operations or expand existing operations in Iowa.

Employers considering an Iowa location should not use low state and local (county) unemployment rates as indicators that the labor market will be tight in the long run. Iowa’s unemployment rate has in most periods been below the national average, but employers who locate in Iowa will not therefore face above average labor costs or have greater than average difficulty in recruiting the workers they need. Both private and public sector efforts to promote economic development in the state should point out that the supply of labor to Iowa employers is adaptable. They should emphasize the amenity and quality of life factors that can translate into long-run labor cost advantages for businesses located in Iowa.

Third, the average wage paid to currently employed workers, which is given great weight in state “business climate” rankings, is not a good indicator of the wage that a business locating or expanding in the state would have to pay. In particular, the fact that Iowa’s average manufacturing wage remains somewhat above the national average does not mean that an employer locating manufacturing operations in Iowa would face above average labor costs. Interstate differences in average wages of currently employed workers simply do not provide information about wage differences for new employees. The relevant information would be estimates of what employers would have to pay for workers with specified skills and abilities.

SUMMARY

Because products, population, and capital move freely across state borders, economic growth in a given state is determined mainly by the demand for the products that state has a comparative advantage in producing. Comparative advantage is determined by factors, such as natural resources and location, that are not mobile—factors that are unique or specific to the state. If workers were not mobile, then having a labor force that is on average more highly trained, productive, and reliable than the labor force in other states would give a state a significant advantage in producing products and services that require such labor. But many workers are mobile: as a result, a state’s labor force will consist of highly skilled and trained workers only if these workers are demanded by the industries for which the state has a comparative advantage. The labor force in a state at any given time thus reflects the demand for labor in that state; demand for labor is in turn driven by demand for products produced in the state.

Although actions taken in a single small state such as Iowa can have only a limited effect on the supply (cost) of labor to businesses in the state, two
broad strategies for enhancing labor supply appear especially promising. First, individuals and businesses in their private and public sector roles can work for cost-effective provision of public services. These services have an important influence on the quality of life in the state and therefore affect the attractiveness of the state as a place to live and work. Second, they can call for and support national policies that would reduce barriers to labor supply and improve the health, education, and training of workers throughout the nation.

What can Iowa’s businesses, governments, and individual citizens do to enhance labor supply now and in the future?

Call for and support state and national policies to increase the productivity of the nation’s current and future workforce.

Maintain and improve Iowa’s amenities and quality of life.

Communicate to Iowans and to those outside the state the advantages of working in Iowa.

Work to change national and state policies that discourage some people from joining the labor force and prevent some businesses from employing labor efficiently.

Facilitate the transition from secondary school and post-secondary education to work.

Improve dissemination of information on labor market conditions and other labor-related matters.
APPENDIX A
ADDITIONAL DATA

Most of the data in this appendix are self-explanatory. However, some interpretation of the Gross State Product (GSP) statistics is needed. GSP is the most comprehensive available measure of the size of the Iowa economy. It measures the value added by production taking place within the state's borders. Figure A-3 shows that in 1986, Iowa GSP remained 8.7 percent below its 1979 peak. Similarly, GSP per worker, a measure of output per worker, was in 1986, 7.9 percent below its 1981 peak (Figure A-4). More recent data on GSP are not available, but it seems likely that GSP is still below its peak, since real wage and salary disbursements, the main component of GSP, have not yet returned to their 1979 level.

Figure A-5 shows the share of GSP that is paid as compensation for the services of labor. Labor compensation consists of wages and salaries and employers' outlays for workers' fringe benefits. Compensation is a measure of the market value of labor's contribution to the production of goods and services. Figure A-6 shows that Iowa workers are on average producing less than they were in 1979: real compensation per worker and real wages and salaries per worker are below their 1979 peaks.

Compensation exceeds wages and salaries mainly by the amount of employers' cost of fringe benefits. Figure A-2 shows that compensation increased relative to wages and salaries until the early 1980s; it has declined slightly since then. Iowa has remained close to the national average in fringe benefit costs.
Figure A-1
Involuntary Part-time Employment Rate, Iowa Relative to Nation, 1976-88

Figure A-2
Compensation as a Percentage of Wage and Salary Disbursements, 1972-86
Figure A-3
Index of Real Gross State Product Versus Real Gross National Product, 1972-86


Figure A-4
Real Gross State Product Per Employed Worker, 1975-86

Figure A-5
Compensation as a Percentage of Gross State Product, 1972-86


Figure A-6
Real Compensation and Real Wages & Salaries Per Worker, Iowa v. U.S., 1975-88

Figure A-7
Labor Force Participation Rate, Iowa Relative to Nation, 1976-89

Figure A-8
Voluntary Part-time Employment Rate, Iowa Relative to Nation, 1976-88
Table A-1
In-migrants and Out-migrants of Civilian Labor Force for Regions (in thousands)

<table>
<thead>
<tr>
<th>Region</th>
<th>In-migrants</th>
<th>Out-migrants</th>
<th>Moves Between States Within the Same Region</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>As a % of Empl. in Region</td>
<td>As a % of Empl. in Region</td>
<td>As a % of Empl. in Region</td>
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<td>Mar-80 to Mar 81</td>
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<tr>
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<td>213 45 258</td>
<td>296 38 334</td>
<td>175 19 194</td>
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<td>258 65 323</td>
<td>454 73 527</td>
<td>200 30 230</td>
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<td>574 72 646</td>
<td>340 72 412</td>
<td>542 79 621</td>
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<td>323 63 386</td>
<td>349 66 415</td>
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<td>278 68 346</td>
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Table A-2

Occupational Distribution of Civilian Labor Force In-migrants and Out-migrants
From March 1986 to March 1987, Midwest and U.S.

(percent)

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<tr>
<th>Occupational Classification</th>
<th>Midwest Distribution of In-migrants</th>
<th>Midwest Out-Migration/ Total Employment in Occupation</th>
<th>U.S. Distribution of Migrants</th>
<th>U.S. Migration/ Employment in Occupation</th>
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<tr>
<td>Executive, Administrative, Managerial</td>
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<td>12.12 2.22</td>
<td>12.66 1.74</td>
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<td>Professional &amp; Technical</td>
<td>19.12 1.82</td>
<td>22.06 2.94</td>
<td>20.20 2.08</td>
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<td>13.20 2.17</td>
<td>12.12 1.65</td>
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<td>9.80 0.88</td>
<td>13.74 1.67</td>
<td>11.46 1.15</td>
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<td>13.92 1.80</td>
<td>14.85 1.81</td>
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<td>Farm, Forestry, Fishing</td>
<td>2.21 0.73</td>
<td>0.54 0.24</td>
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<tr>
<td>Precision Products, Crafts, Repair</td>
<td>8.09 0.95</td>
<td>4.52 0.72</td>
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<tr>
<td>Machine Operation, Assembly, Inspection</td>
<td>5.39 0.85</td>
<td>5.24 1.12</td>
<td>4.31 0.99</td>
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<td>Transportation, Material Moving</td>
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<td>Handlers, Equipment Cleaners, Etc.</td>
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<td>11.03 2.27</td>
<td>11.75 3.27</td>
<td>11.68 2.88</td>
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### Table A-3
County Employment Growth 1976-87

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<th>Rank</th>
<th>County</th>
<th>Change</th>
<th>Rank</th>
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<td>40</td>
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<tr>
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<td>Bremer</td>
<td>37%</td>
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<tr>
<td>Buchanan</td>
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<td>14</td>
<td>Butler</td>
<td>39%</td>
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<tr>
<td>Buena Vista</td>
<td>64%</td>
<td>16</td>
<td>Cass</td>
<td>49%</td>
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<tr>
<td>Carroll</td>
<td>67%</td>
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<td>Cedar</td>
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<tr>
<td>Chickasaw</td>
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<td>Dallas</td>
<td>32%</td>
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<td>Davis</td>
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<tr>
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<td>Decatur</td>
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<td>Guthrie</td>
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<tr>
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<td>Hardin</td>
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Table A-3 (cont.)
County Employment Growth
1970-87

Positive growth but below state
(0%-30%)

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<tr>
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<td>7%</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shelby</td>
<td>13%</td>
<td>78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodbury</td>
<td>6%</td>
<td>86</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Negative growth
(<0%)

Sources: As for Figures 11 and 12.
Table A-4
High School Graduation Rates, College Enrollment Rates, and College Completion Rates for Selected Years, United States (percent)

<table>
<thead>
<tr>
<th>School Year Ending</th>
<th>High School Graduation Rate of Those Entering</th>
<th>College Enrollment Rates of High School Graduates</th>
<th>Percentage of Graduates Enrolling in College in October Following Graduation</th>
<th>College Completion Rate; BAs to Full-time, First-time Freshmen 5 Years Earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>50.5</td>
<td>70.8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1956</td>
<td>58.1</td>
<td>73.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1960</td>
<td>62.1</td>
<td>74.4</td>
<td>69.5</td>
<td>45.1</td>
</tr>
<tr>
<td>1966</td>
<td>73.2</td>
<td>80.6</td>
<td>72.1</td>
<td>50.1</td>
</tr>
<tr>
<td>1970</td>
<td>75.0</td>
<td>80.8</td>
<td>76.9</td>
<td>51.8</td>
</tr>
<tr>
<td>1971</td>
<td>-</td>
<td>-</td>
<td>75.9</td>
<td>53.4</td>
</tr>
<tr>
<td>1972</td>
<td>74.8</td>
<td>79.4</td>
<td>75.5</td>
<td>49.2</td>
</tr>
<tr>
<td>1973</td>
<td>74.9</td>
<td>79.1</td>
<td>75.0</td>
<td>46.6</td>
</tr>
<tr>
<td>1974</td>
<td>74.4</td>
<td>77.6</td>
<td>74.4</td>
<td>47.5</td>
</tr>
<tr>
<td>1975</td>
<td>74.3</td>
<td>77.7</td>
<td>73.6</td>
<td>50.7</td>
</tr>
<tr>
<td>1976</td>
<td>74.9</td>
<td>78.2</td>
<td>73.7</td>
<td>48.8</td>
</tr>
<tr>
<td>1977</td>
<td>74.4</td>
<td>77.6</td>
<td>73.9</td>
<td>50.6</td>
</tr>
<tr>
<td>1978</td>
<td>74.6</td>
<td>77.5</td>
<td>73.0</td>
<td>50.1</td>
</tr>
<tr>
<td>1979</td>
<td>74.3</td>
<td>76.1</td>
<td>72.0</td>
<td>49.3</td>
</tr>
<tr>
<td>1980</td>
<td>74.4</td>
<td>75.6</td>
<td>71.4</td>
<td>49.3</td>
</tr>
<tr>
<td>1981</td>
<td>74.5</td>
<td>76.3</td>
<td>71.8</td>
<td>53.9</td>
</tr>
<tr>
<td>1982</td>
<td>-</td>
<td>-</td>
<td>72.7</td>
<td>50.6</td>
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<td>1983</td>
<td>-</td>
<td>-</td>
<td>73.3</td>
<td>52.7</td>
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<td>1984</td>
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<td>-</td>
<td>73.7</td>
<td>55.2</td>
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<td>1985</td>
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<td>-</td>
<td>73.2</td>
<td>57.7</td>
</tr>
<tr>
<td>1986</td>
<td>-</td>
<td>-</td>
<td>73.0</td>
<td>53.8</td>
</tr>
<tr>
<td>1987</td>
<td>-</td>
<td>-</td>
<td>73.0</td>
<td>56.8</td>
</tr>
<tr>
<td>1988</td>
<td>-</td>
<td>-</td>
<td>73.9†</td>
<td>-</td>
</tr>
<tr>
<td>1989</td>
<td>-</td>
<td>-</td>
<td>74.0†</td>
<td>-</td>
</tr>
</tbody>
</table>

†Estimate *Preliminary


Note: The first two columns examine estimated school retention rates. In 1950, 1956, and 1960, Alaska and Hawaii were excluded. Rates for the 5th grade through high school graduation are based on enrollments in successive grades in successive years in public elementary and secondary schools, and are adjusted to include estimates for private schools. The third column, High School Graduates as a Percentage of 17-Year-Old Population, also includes private as well as public schools. For 1988 and 1989, estimates are given.

The first column on college enrollment rates is based on enrollment in college as of October of each year for individuals age 16 to 24 who graduated from high school during the preceding 12 months. Data are based on sample surveys of the civilian population and differ from other similar tables because of survey procedures and coverage. The second column on college enrollment represents the percentage of high school graduates enrolling in college in the October following graduation, and is based on three-year averages. For example, the three-year average percentage for 1987 is the average of the percentages for 1986, 1987, and 1988.

College completion figures show the extent to which freshmen entering college full-time complete a formal degree within a specified period of time. A preliminary figure is given for the academic year ending in 1988.
Table A-5
Components of Population Change, 1960-90
(numbers in thousands)

<table>
<thead>
<tr>
<th></th>
<th>Net Change</th>
<th>Natural Change</th>
<th>Net Migration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>(Births - Deaths)</td>
</tr>
<tr>
<td>April 1, 1960 To April 1, 1970</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>23,912</td>
<td>13.3</td>
<td>20,841</td>
</tr>
<tr>
<td>West North Central Region</td>
<td>930</td>
<td>6.0</td>
<td>1,529</td>
</tr>
<tr>
<td>Iowa</td>
<td>68</td>
<td>2.4</td>
<td>250</td>
</tr>
<tr>
<td>April 1, 1970 To April 1, 1980a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>23,244</td>
<td>11.4</td>
<td>13,965</td>
</tr>
<tr>
<td>West North Central Region</td>
<td>856</td>
<td>5.2</td>
<td>972</td>
</tr>
<tr>
<td>Iowa</td>
<td>88</td>
<td>3.1</td>
<td>148</td>
</tr>
<tr>
<td>April 1, 1980 To April 1, 1990</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>23,128</td>
<td>10.2</td>
<td>NA</td>
</tr>
<tr>
<td>West North Central Region</td>
<td>540</td>
<td>3.1</td>
<td>NA</td>
</tr>
<tr>
<td>Iowa</td>
<td>-126</td>
<td>-4.3</td>
<td>146</td>
</tr>
</tbody>
</table>

aThe figures for 1970 to 1980 are less accurate than the other figures because the error of closure (i.e. the unexplained difference between the estimated population at the end of the decade and the census count for that date) was much larger for that decade than previous decades.

APPENDIX B
PUBLIC PROGRAMS FOR EDUCATING AND TRAINING WORKERS

The state and federal training programs available in Iowa fall into three categories. First, there are programs that assist the structurally unemployed, individuals who are outside the labor force and need assistance to secure employment, usually because they are economically or educationally disadvantaged. These programs also assist the non-traditional workforce, including homemakers without work experience and the handicapped. Second, there are programs designed to help workers who wish to re-enter the workforce. Third, there are programs designed to upgrade the current supply of labor and match it with labor demands. These programs often serve businesses rather than individuals.

Most of the federal programs are for adult education, vocational education, and job training. Adult education includes programs in adult basic education (ABE), high school equivalency (GED), and English as a second language (ESL). The purpose of the Adult Education Act (Title I of the Education Amendments of 1984 [PL 98–511]), is to help educationally disadvantaged adults acquire the basic literacy skills necessary to function in society, complete their secondary education, and become able to secure training that will make them more employable, productive, and responsible citizens.

The Carl Perkins Act for Vocational Education was intended to make vocational education programs accessible to all persons, including the handicapped, economically disadvantaged persons, single parents and homemakers, adults in need of retraining, persons participating in programs designed to eliminate sex bias and stereotyping in vocational education, and incarcerated persons. The act was also intended to improve the quality of vocational education programs and give the nation's workforce the marketable skills needed to improve productivity and promote economic growth.

The Job Training Partnership Act (PL 97–300), has as its purpose to establish programs that prepare youth and unskilled adults for entry into the labor force and to afford job training to economically disadvantaged individuals and others facing serious barriers to employment, who are in special need of training to obtain productive employment.
Although there are differences in the intent of these three legislative acts, each emphasizes services to people whose characteristics limit their chances for success in gaining and keeping employment. In Iowa, many of the programs under these acts are administered by the Departments of Economic Development, Education, and Employment Services. There is considerable overlap in intent and actual services. Better coordination between programs is one area for discussion; in fact, in Illinois discussion between practitioners in each field has increased joint planning among the three groups.

ENTRY INTO THE WORK FORCE: PROGRAMS FOR THE STRUCTURALLY UNEMPLOYED

Structurally unemployed people are those with socioeconomic, physical, or mental barriers to becoming employed. Some lack job skills, education, or work habits; others have disabilities that create real or perceived difficulties in obtaining jobs; and others face artificial barriers due to discrimination. Eligibility for these programs is typically keyed to characteristics of the trainee—for example, low-income or handicapped.

Comprehensive Adult and Youth Program (Title IIA — JTPA)

Approximately 15 million federal dollars are allocated annually to the state for Title IIA of the Job Training Partnership Act. To be eligible for services, an individual must be economically disadvantaged, although 10 percent of the participants may be individuals who are not economically disadvantaged if they have encountered other barriers to employment. Such individuals may include those with limited English-language proficiency, displaced homemakers, school dropouts, teenaged parents, handicapped persons, older workers, veterans, legal offenders, alcoholics, or addicts. Economic disadvantage means that an individual’s total family income (exclusive of unemployment compensation, child support payments, and welfare payments) in relation to family size does not exceed the higher of two figures: the poverty level or 70 percent of the lower living standard income level.

According to the Department of Economic Development’s Division of Job Training which administers the program, common services include on-the-job training, institutional skill training, remedial and basic skill training, retraining, vocational exploration, work experience, and job search. While participating in JTPA, some clients receive needs-based payments, child care assistance, transportation reimbursement, and training-related equipment.
The Comprehensive Adult and Youth Program serves approximately 12,000 individuals yearly and is the largest program for helping the economically disadvantaged enter the workforce. In Program Year 1988, 12,079 individuals enrolled in the program in Iowa. Thirty-seven percent (4,492) finished the program, and 75 percent (3,387) of those completing the program found employment. (Division of Job Training, 1990) The cost per person completing the program in FY88 was approximately $3,300.

Summer Youth Employment and Training Program (Title IIB — JTPA)
The Summer Youth Program provides youths (ages 16–21) an opportunity to increase their employment and earnings through work experience. Eligibility requirements for the program are the same as for other JTPA programs. Remediation and basic education must be provided to all Summer Youth participants. In addition, a number of activities are available, including on-the-job training, work experience, job search, and institutional skill training. In summer 1988, 4,704 youth enrolled in the program and all completed it. For summer 1990, $5,787,000 was available in funding, and the expected number of youth served was 4,500, for a cost of $1,286 per person.

State Education Coordination and Grants
The purpose of this program is to provide employment and training services to eligible JTPA participants through cooperative agreements between the Iowa Department of Education, local JTPA offices, and local education agencies. The program is aimed primarily at the economically disadvantaged, but 25 percent of the funds may go to individuals with other barriers to employment. Also, support services such as a transportation allowance and child care assistance are available in some areas.

The services provided include on-the-job training, job search, classroom skill training, remedial and basic skill training, and résumé writing. Under this program approximately 2,971 clients are served each year with $1,209,000 in funding, or about $400 per individual.

Migrant and Seasonal Farmworkers
This component of the Job Training Partnership Act serves migrant and seasonal farmworkers in Iowa. The program is designed to help clients become job-ready and self-sufficient in jobs that are not seasonal. There is also limited funding for supportive services for in-stream migrants who wish to remain in agricultural work. To be eligible for assistance, clients must be economically disadvantaged and migrant or seasonal farmworkers.
Some of the activities available include adult basic education, high school equivalency, English as a second language, work experience, on-the-job training, and vocational training. Also, stipends are available for classroom activities, and there are a variety of support services—both training-related and non-training-related.

Approximately 1,500 migrants and seasonal farmworkers are served each year with $1,500,000 in funds, for a cost of about $1,000 per worker.

**Job Corps**

Job Corps provides basic education and vocational training courses for youths between the ages of 16 and 21. Participants are provided 24-hour residential care at the Denison Job Corps Center in Denison, Iowa, the only Job Corps facility in the state. Besides room, board, and clothing, new residents of the facility receive a wage of $40.00 per month. At the end of 180 days this amount can increase to between $80.00 and $100.00 per month. The facility usually operates at capacity (300 participants, divided equally between males and females).

**Promise Jobs**

The purpose of the PROMISE Jobs Program (Promoting Independence and Self-Sufficiency through Employment) is to provide recipients of Aid to Families with Dependent Children (AFDC) with employment and training opportunities, to help them become self-sufficient. All AFDC recipients are eligible for assistance. The program's services include job search activities, classroom training programs ranging from basic education to post-secondary education, and work experience. Approximately $2,600,000 is available yearly. Since mid-1989, 11,450 people have participated in one or more program activities, and over 1,500 have found employment while in the program.

**Iowa Conservation Corps**

This program provides employment and volunteer opportunities to youths between the ages of 14 and 24. For the in-school program, participants must be disadvantaged. For the Young Adult program, the participants must be unemployed.

The ICC's services include employment, career education, and environmental education. Approximately 1,300 clients are served each year with $1,040,000 in state funds and $560,000 in local matching funds.
**Iowa Corps**

This program is designed to encourage Iowa high school students to perform volunteer community service for public and non-profit organizations while earning tuition credit. Under the Iowa Corps program, youths perform a 100-hour volunteer project in one of the following areas: park maintenance/restoration, soil conservation, wildlife/land management, energy savings, community improvements, tourism, economic development, environmental protection, and human service projects. In exchange for their volunteer time, each youth receives a $50 tuition credit to be used at an Iowa post-secondary institution. Approximately 150 youth participate in the program every year with $75,000 in funding.

**Work Force Investment Program**

This new program (Program Year 1990 is the first) is designed to enable more Iowans to enter or re-enter the workforce by focusing on groups within the population that have historically faced barriers to employment and have had more difficulty being served in traditional job training programs. Funds are awarded through a competitive request-for-proposal process; projects funded help increase Iowa’s pool of available labor by providing training and support services to special hard-to-serve populations. At the time of application, individuals assisted must be residents of Iowa and unemployed, underemployed, or not in the workforce; they must also fall into one of these groups: displaced homemakers, dropouts and potential dropouts, members of ethnic minorities, the handicapped, the homeless, immigrants, individuals with reading skills below a seventh grade level, offenders, older workers, substance abusers, and teenaged parents or pregnant teenagers.

The services available under the Work Force Investment Program include entrepreneurial training, institutional skill training, job search, on-the-job training, pre-employment training, remedial and basic skill training, retraining, tryout employment, upgrading, vocational exploration, and work experience.

**Iowa Industrial New Jobs Training Program**

This program, also known as 280B, is designed to help firms lower the costs of expanding their workforce or locating a new facility in Iowa. Eligibility is limited to firms that produce products or provide services in interstate commerce. Retail businesses, health services and professional services do not qualify.

The program lowers employers’ costs by providing for services to meet their specific needs; services may include skill assessment, orientation, pre-
employment training, instructional salaries, seminar fees, and travel expenses. The area colleges are primarily responsible for providing skill assessment and training.

Funds are derived from the sale of tax exempt and taxable certificates and are repaid over a 10-year period through the diversion of property taxes on the value of new buildings, machinery, and equipment and/or a portion of the new employee’s state withholding taxes. Since 1983, $117,000,000 in certificates have been sold.

The New Jobs Training Program may assist workers moving from low-skilled jobs to more skilled jobs. However, the direct client is the business. The on-the-job training component of the program can cover up to 50 percent of the wages and fringe benefits during the training period, yet the firm controls the characteristics of the individuals hired.

Small Business New Jobs Training Program

The eligibility requirements and services provided by this program (H.F. 766, Chapter 280C) are the same as those for the Industrial New Jobs program. Funds are derived from a revolving loan fund established by the state legislature. The new or expanding company is eligible for a loan of up to $50,000. The loan is paid back over 10 years with the diversion of property taxes from the increased value of buildings, machinery, and equipment and/or a portion of the new employee’s state withholding taxes.

Since 1985, over $3,000,000 in loans have been awarded to 83 Iowa companies for training 1,800 workers. As with the Industrial New Jobs program, the state’s area colleges provide many of the services. And, like the Industrial New Jobs program, this program may indirectly increase the number of new entrants to the workforce or upgrade the current supply. It is not, however, an explicit goal of the program.

National Apprenticeship Program

The National Apprenticeship Program certifies an employer in a particular trade or trades as eligible to participate in the program. Apprenticeships are arranged by the U.S. Department of Labor, Bureau of Apprenticeship and Training. Participating employers must be willing to place workers into structured work situations that involve a mix of on-the-job and classroom training. The employer draws up an agreement with the apprentice specifying the type of training that will be provided, an outline of the training curriculum, what schooling will be required, and the wage rate. Once an apprentice completes an approved program, he or she receives national
certification as a journeyperson. Approximately 1,500 Iowans are served each year through the program.

RE-ENTRY INTO THE WORK FORCE

These programs are aimed at workers who often have good work habits and histories. Most have been “dislocated” by technological or market factors. In some cases, the worker has skills that are in demand and needs only job search assistance. Others, however, have skills that have become obsolete and need re-training to re-enter the labor force.

Dislocated Worker Program (Title III Formula — JTPA)

Workers who have lost their jobs or farmers who no longer make a living from farming can seek assistance at one of Iowa’s 16 Dislocated Worker Centers. Workers are eligible if they have been terminated or laid off and are unlikely to return to work at their previous job, if they have received a termination notice, if they have been laid off due to a plant closing, or if they are long-term unemployed and are unlikely to go back to work at jobs for which they have been trained.

Dislocated Workers receive a variety of services, including on-the-job training, institutional skill training, remedial and basic skill training, re-training, and support services. Approximately 2,100 dislocated workers are served each year. Funding is $2,635,000 yearly, or about $1200 per individual.

Secretary’s Discretionary Dislocated Worker Grants (Title III — JTPA)

Each year the Secretary of Labor sets aside special discretionary funds at the national level to help states serve individuals who have been affected by a plant closure or mass layoffs. States compete for these funds by submitting proposals to the U.S. Department of Labor.

Eligibility and services are the same as for the JTPA Title III Formula program. In Program Year 1989, approximately 1,000 individuals were served. Iowa currently has $5,640,370 in Title III Discretionary funds, but funding varies depending on the number of Iowa proposals approved.

Older Individuals Program (Title IIA — JTPA)

The purpose of this JTPA program is to place economically disadvantaged individuals who are 55 years of age or older in private employment. Assistance is in the form of remedial and basic skill training, on-the-job training, re-training, job search, and support services. Approximately 800
people are served each year with $453,000 in funding, or $550 per person. In Program Year 1988, 526 persons enrolled in the program. Seventy-one percent completed the program and 69 percent of those completing the program, and 69 percent of those (260 individuals) found employment.

**Veterans (Title IVC — JTPA)**

Special JTPA funds are available to assist veterans with service-connected disabilities, veterans from the Vietnam era, and veterans who recently separated from military service. The program offers on-the-job training, classroom training, job search, and job counseling.

Approximately 50 Iowa veterans are served each year. Approximately $84,000 in JTPA Title IVC funding (approximately $1,700 per person) is currently available for programming specifically targeted at veterans. This amount can fluctuate from year to year.

**Trade Adjustment Act (TAA)**

The Trade Adjustment Act of 1974 authorized benefits to be provided to employees who have lost their jobs due to foreign trade. Three or more affected employees can apply to the U.S. Department of Labor for benefits. An average of 1,200 participants are served annually. The amount of money in Iowa for the Trade Adjustment Act varies each year, depending on what petitions are approved. Services include unemployment insurance payments, training, relocation, and job search.

**Department Approved Training (DAT)**

Participants in DAT must claim unemployment insurance (U.I.). The program allows them to attend school. Under Basic DAT, the U.I. claimant can attend school without having to participate in job search. In the DAT Tuition program, a U.I. claimant can receive up to $1,000 to attend school for up to 24 months. The tuition money is paid directly to the educational institution. The $1,000 can go only toward tuition and related fees. Approximately 240 U.I. claimants are served yearly. At present, there is no funding available under this program.

**RETRAINING CURRENTLY EMPLOYED WORKERS**

These programs are designed to assist business directly, by helping re-train their employees and upgrade employees' skills. It is the aim of the programs to retain jobs in the state and to improve the skills and wage levels of Iowa workers.
**Iowa Retraining Program**

This program helps selected businesses retrain their currently employed workers to keep the firms competitive and retain jobs in Iowa. Additional objectives of the program include diversification of the state's economy, creating new market opportunities, new manufacturing processes, and wage increases for employees.

Eligible recipients are businesses engaged in intrastate or interstate commerce, excluding retail, health, and professional services. Assistance may be in the form of a grant, loan, or forgivable loan. Grants and forgivable loans may only be awarded when the retraining results in net increases in the number of jobs, a net upgrading of the positions, or a net increase in wages paid to the employees. Retraining may take place at a vocational school, community college, or on site, and may include basic academic skills in addition to job-specific skills.

The Iowa Legislature has established a $2,000,000 revolving loan fund. The maximum award for each retraining project is $50,000.

**Customized Education/Training Programs**

Customized programs are designed to contribute to Iowa's economic growth by preparing, upgrading, and retraining individuals for participation in the workforce of a specific business, industry, agency, or organization. Programs can be designed specifically for a business, or may be a program or course already offered by an area's community college or vocational school. Three types of customized education activities are currently available. New and Expanding Business and Industry Training (NEBIT) programs are designed to respond to the specific training needs of businesses or industries which are expanding their operations or creating new employment opportunities. Productivity Enhancement programs are offered to existing businesses or industries to increase the productivity and effectiveness of current employees. Upgrading and Retraining programs are designed to retrain workers whose jobs have been eliminated due to technological change or out-migration of a business or industry.

During Fiscal Year 1988, the 15 area colleges provided customized training programs for business and industry. Approximately $600,000 of federal vocational funds were spent to help 5,112 people train under these three programs, or $117 of federal dollars per individual. Each customized training program is funded by some combination of federal, state, and private dollars.
Adult Vocational Training/Retraining Education

This area school program includes individual short-term vocational courses, each complete in itself, designed for the specific purpose of training people for employment, upgrading the skills of persons presently employed, and retraining persons for new employment. The courses are very flexible and responsive to specific local needs of both workers (or retrainees) and employers. Firms with immediate needs for skilled workers can consult adult education coordinators at the merged area schools for courses specifically designed to provide the training, retraining, or upgrading instruction necessary to meet the employer's particular skill needs. In Fiscal Year 1989, 331,144 Iowans were enrolled in community college Adult Vocational Training/Retraining Education programs.

TRAINING IN THE PUBLIC EDUCATION SYSTEM

Iowa's public education system has a number of programs that provide workplace skills as part of their general education activities. There are also programs for persons who have made their way through the formal public education system without some or all of the skills they need to find appropriate employment. Elementary and secondary education in basic skills is, of course, an important, perhaps the most important, form of workplace training.

Basic Skills Education: Grades K–8

Trends in the scores of Iowa students on the Iowa Test of Basic Skills, summarized below in Table B–1, provide direct and convincing evidence on this question. These scores show no decline over the past 50 years.

A 25-year study (1940–65) completed in 1965 showed substantial improvement in all grades and test areas for those years. From 1955 to 1960, basic skills improved rapidly while Iowa schools underwent extensive reorganization; between 1960 and 1965 achievement improved at a slightly lower rate. The years between 1965 and 1970 showed a general decline in almost all areas, with the biggest losses in language usage and mathematics. From 1970 to 1975, further substantial losses occurred, especially in language skills. From 1975 through the mid-1980s, skill levels showed upward achievement trends. In the 1988–89 and 1989–90 school years, achievement appears to have remained the same or increased only slightly in each of the grades 3 through 8. To illustrate, the entry of .9 in the vocabulary column for 1940–55 indicates that students in 1955 achieved specified vocabulary

1 The Iowa Test of Basic Skills (ITBS) is widely used throughout the nation to evaluate basic skills achievement. Information on ITBS scores of Iowa students is from “Score Reports and Norms, 1990–91,” Iowa Basic Skills Testing Program, The University of Iowa.
Table B-1  
Changes in Average Grade Equivalents (months)  
in Combined Grades 3–8: 1940–90

<table>
<thead>
<tr>
<th>Year</th>
<th>Vocabulary</th>
<th>Reading</th>
<th>Language</th>
<th>Work-Study</th>
<th>Mathematics</th>
<th>Complete Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940-55</td>
<td>.9</td>
<td>3.2</td>
<td>2.8</td>
<td>4.2</td>
<td>-1.3</td>
<td>2.0</td>
</tr>
<tr>
<td>1955-60</td>
<td>3.5</td>
<td>3.9</td>
<td>5.4</td>
<td>4.3</td>
<td>3.8</td>
<td>4.2</td>
</tr>
<tr>
<td>1960-65</td>
<td>.9</td>
<td>.9</td>
<td>2.0</td>
<td>1.2</td>
<td>1.8</td>
<td>1.3</td>
</tr>
<tr>
<td>1965-70</td>
<td>-.7</td>
<td>-1.1</td>
<td>-1.4</td>
<td>.4</td>
<td>-2.1</td>
<td>-1.0</td>
</tr>
<tr>
<td>1970-75</td>
<td>-1.0</td>
<td>-1.4</td>
<td>-2.7</td>
<td>-1.0</td>
<td>-1.6</td>
<td>-1.5</td>
</tr>
<tr>
<td>1975-80</td>
<td>1.5</td>
<td>1.0</td>
<td>2.4</td>
<td>1.4</td>
<td>.7</td>
<td>1.4</td>
</tr>
<tr>
<td>1980-85</td>
<td>1.8</td>
<td>1.5</td>
<td>2.6</td>
<td>2.1</td>
<td>1.3</td>
<td>1.9</td>
</tr>
<tr>
<td>1985-90</td>
<td>.8</td>
<td>.6</td>
<td>1.0</td>
<td>.9</td>
<td>1.3</td>
<td>.9</td>
</tr>
</tbody>
</table>

skills .9 months earlier than their 1940 counterparts. The negative value of –1.0 in the complete composite column for 1965–70 means that across all skill categories Iowa students were in 1970 about one month behind their 1965 counterparts.

Achievement by Iowa's students relative to students nationwide has been stable for the past 30 years, for years in which data are available. The performance of Iowa pupils and schools compares favorably to the nation's pupils and schools. Among pupils, for example, a third grader who ranks at the 55th percentile among Iowa students would rank at the 75th percentile among students nationally (see Table B-2). The comparison of school averages for Iowa and the nation, Table B-3, also shows Iowa's advantage. For example, a school with an eighth grade that ranks at the 37th percentile in Iowa would have a much higher national rank—at the 75th percentile.

Area Colleges

Iowa's 15 community colleges are public, two-year, "open-door admissions" institutions. They provide remedial education for individuals who do not have the prerequisites for entry into career and college transfer programs.

The area colleges are involved in special job training programs, such as the Customized Training program discussed earlier. In addition, the schools offer three formal areas of instruction that are designed to prepare individuals to enter or re-enter the workplace or to retrain or upgrade workers' skills.

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2 These comparisons are for national performance in 1984–85 with Iowa performance in 1985–86. National updates are every seven years, while Iowa updates are annual. Appropriately, noncurrent national scores were not compared to the current Iowa scores.
Table B-2
Comparison of National and Iowa Composite Percentile Ranks: Pupil Scores

<table>
<thead>
<tr>
<th>National Percentile Rank</th>
<th>Iowa Percentile Rank for Grade</th>
<th>Average K–8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K 1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>80 79 76 79 79 80 80 79 81</td>
<td>79</td>
</tr>
<tr>
<td>75</td>
<td>58 54 52 55 56 55 56 55 58</td>
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</tr>
<tr>
<td>25</td>
<td>12 8 9 11 12 9 10 10 11</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>5 2 3 4 3 3 4 4 3</td>
<td>3</td>
</tr>
</tbody>
</table>

†Pupil norms show where the grade equivalent of the average pupil in the class building, or system ranks among other pupils in the same grade in the state (Iowa norms) or nation (national norms).

Table B-3
Comparison of National and Iowa Composite Percentile Ranks: School Averages

<table>
<thead>
<tr>
<th>National Percentile Rank</th>
<th>Iowa Percentile Rank for Grade</th>
<th>Average K–8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K 1 2 3 4 5 6 7 8</td>
<td></td>
</tr>
<tr>
<td>90</td>
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<td>70</td>
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<tr>
<td>75</td>
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<tr>
<td>50</td>
<td>13 9 9 9 7 6 4 4 4</td>
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</tr>
<tr>
<td>25</td>
<td>2 2 1 1 1 1 1 1 1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>0 0 0 0 0 0 0 0 0</td>
<td>0</td>
</tr>
</tbody>
</table>

†School norms show where a school building or school system average grade equivalent for each grade group ranks among other averages of similar grade groups in other schools in the state (Iowa norms) or nation (national norms).

Vocational Preparatory Programs

There were 538 full-time vocational preparatory programs operational in the state’s area colleges during Fiscal Year 1988; these programs prepare individuals for careers that do not require a baccalaureate degree. Many of these are cooperative programs that provide classroom instruction in conjunction with related, paid work experience. In 1988, 6,830 individuals completed a vocational preparatory program.

Adult Basic Education

The community colleges throughout the state provide adult basic education (ABE) for those whose inability to speak, read, or write the English
language substantially impairs their ability to get or retain employment commensurate with their real ability. ABE helps eliminate such inability and raises the level of education of such individuals with a view to making them less likely to become dependent on others, improving their ability to benefit from occupational training, and otherwise increasing their opportunities for more productive and profitable employment.

**High School Equivalency Program**

This program is an organized effort, through the community colleges, to provide the academic preparation necessary for passing the high school equivalency or the general educational development (GED) examinations. Students enrolled in high school equivalency classes must function at the ninth grade level or above in all instructional areas: math, reading, science, social studies, and writing.

**College Parallel Program**

The College Parallel Program provides arts and sciences courses that can be transferred to other colleges and universities as the equivalent of the first two years of a four-year degree program.

**Retraining and Upgrading**

Continuing education courses for a number of professions and occupations are offered by the area schools. They are aimed at individuals who want training, re-training for job advancement, re-licensure or re-certification.

**Workplace Training at the Secondary Level**

Programs such as the Jointly Administered Program and laws such as S.F. 449 acknowledge the importance of technical skill training at the high school level.

With the Jointly Administered Program, the local secondary school and the merged area school agree to administer instructional program(s) and supportive services to students by sharing personnel, curriculum, facilities, and other resources. Approximately 1,600 high school students were enrolled in Jointly Administered programs throughout the state in fall 1989.

S.F. 449 revised the Iowa Code in 1989. It affects four sections in the Code and, among others, makes the following amendments.

- The following areas must now be taught at grades seven and eight: family, consumer, career, and technology education.
• Instead of offering "five units of occupational or vocational education," the Code now requires each district to offer a minimum of three sequential units in at least four of the six vocational areas: agriculture, business or office occupations, consumer and family sciences or home economics occupations, health occupations, industrial technology or technical and industrial education, and marketing education. The amended section also requires that the instruction be competency-based, must be articulated with post-secondary programs of study, and must include field, laboratory, or on-the-job training. The Iowa Department of Education is in the process of developing standards for these minimum competencies.

• The Department of Education must also set minimum competencies for the vocational program sequence that addresses job seeking, job keeping, job adaptability, and other employment skills; employment skills that reflect current industry standards and labor market needs; leadership; entrepreneurial skills; and basic academic skills.

• The Department of Education is also now responsible for establishing a regional planning board which will, among other requirements, provide for participation of merged area schools, local education agencies, and representatives of the business and industrial community in planning for the delivery of vocational education; determine occupational needs of students based on labor market, entrepreneurial, and self-employment opportunities and demand within the region, state, nation, and other countries; ensure that the vocational programs are compatible with educational reform efforts, can respond to technological change and innovation, and meet the educational needs of students and employers; determine whether vocational education programs permit students to pursue other educational interests in a post-secondary setting; and ensure that the programs remove barriers to educational and employment opportunities for both traditional and non-traditional students.
APPENDIX C
SUBCOMMITTEE REPORTS

The Advisory Committee appointed subcommittees to examine factors that affect the supply of labor to Iowa employers, the utilization and quality of that supply, and the influence of labor supply on the state's economic growth. This appendix presents the reports of these six subcommittees, which dealt with hiring and recruitment, work options, job training, labor as a factor in plant site selection, fringe benefits, and labor market forecasting. These reports provide perceptions and expertise from businesses, labor organizations, and the public sector about Iowa's labor supply and especially about private and public sector policies that would help employers attract, train, and retain qualified workers.
HIRING AND RECRUITMENT

The members of this subcommittee represented employers who recruit widely in Iowa and the midwest and a few who also recruit on an international basis. Most of the businesses represented have steady growth and an on-going need for labor.

DIFFICULTIES FACED IN RECRUITMENT AND HIRING

Subcommittee members agreed on a number of themes about Iowa's current labor markets. Employers have to function in an environment of almost full employment, with an expected significant decline in the number of high school graduates in Iowa. In time, this decline may lead to fewer college graduates as well. There has been a decline in the size of the recruit pool that they draw from, especially in the number of nonexempt workers, and they anticipate that this trend will worsen over the next few years. Work and the workplace itself will become more sophisticated in the future, leading to higher skill requirements both for existing workers and for those competing for positions. Finally, there will be a more complex legal environment surrounding the recruitment and hiring of employees.

Subcommittee members raised a number of specific concerns about recent trends in recruiting. Attracting candidates to small towns, which are perceived by some as providing fewer social, cultural, educational, and fiscal opportunities, has been difficult for some employers. In particular, professional employees from other parts of the country are often deterred by their negative perception of Iowa. At the same time, other employers have experienced problems in attracting candidates to downtown locations because of concerns about parking and congestion. Many employers wish to hire workers from dual income families, and problems arise in trying to locate suitable career opportunities for both income earners. The availability of dependable and trustworthy child care convenient to the workplace is becoming a more frequent issue.

COSTS OF RECRUITING

Subcommittee members estimate that, in their experience, the cost to hire one employee is approximately 40 to 50 percent of the average person's salary (approximately $17,000 per worker, on average), a percentage that other studies have confirmed. A significant portion of this cost is due to factors such as employee benefits, sourcing, and recruitment and training. Employers on the subcommittee indicated that the amount of time a requisition might be open would vary considerably with the type of position. Entry-level jobs usually take no more than a few weeks to fill, whereas
positions requiring more experience could take months to fill. All employers indicated that the costs would continue to rise as they expanded their candidate sources and revised their training programs to include more basic skills training antecedent to on-the-job training.

Costs are incurred for a period after recruitment begins, usually in the form of training costs. This period ranges from a few weeks for mail clerks, to three to five months for claim examiners, 18 months for engineers, and nearly three years for salespersons.

In recent years, subcommittee members have noted a number of factors that have imposed on employers additional costs for hiring and recruitment. Turnover has increased in some cases, as employees are more willing to change jobs in search of better opportunities. The recruitment process has been the source of more frequent litigation involving discrimination claims.

The inability to recruit quickly for needed positions has raised a number of related problems. Some employers lose production either from filling these positions with lesser skilled employees or leaving positions unfilled until appropriate candidates can be found. Low morale can result, particularly among those employees asked to assume greater responsibilities in the absence of a suitably qualified recruit. Firms are also now more reluctant to let workers leave, since replacing them is difficult. As a result, firms may use more corrective discipline, in an effort to correct problems rather than resorting to termination. Finally, training costs increase as marginal employees are retrained to assume other roles within the company.

Subcommittee members noted that some kinds of workers are hard to recruit at present. In particular, nurses and other health care professionals, programmers, accountants, candidates for unskilled jobs, people who have the ability to self-manage, and those in skilled trades—e.g., candidates with 8,000 hours in a Department of Labor apprenticeship (electronics, pipe fitters, etc.)—were mentioned as difficult to find. Employers have also noted a greater tendency for candidates with bachelors degrees to return to academic institutions to complete graduate work. Those companies in the international marketplace also indicated that it was difficult to place non-natives in locations outside the U.S.

In a notable exception to concerns raised about Iowa's image, the hotel industry indicated that the quality of life in the midwest was a particular attraction to those wishing not to live on the Coasts.
QUALITY OF APPLICANTS

Subcommittee members agreed that there has been a recent decline in the overall quality of job applicants. Of particular concern was the decline in written communication, grammar, problem solving, interpersonal skills, and teamwork skills, along with a lack of maturity and professionalism in the workplace. One employer has established an extensive basic skills training program designed to evaluate the level of skill deficiencies and raise skills to a level that would make the new employee more capable of succeeding in on-the-job training. According to the national average, 1.4 percent of a company's total salary cost is devoted to training programs.

Members also agreed that candidates were expressing expectations for positions that were far above their skill levels and for unrealistic salaries, rapid career advancement, and fringe benefits as a right of employment rather than a privilege. Moreover, employers believe that employees' value systems are changing, leaving them less loyal to their employers and less willing to sacrifice personal or family life for their careers.

The third point of consensus was that all employers expected more of their employees than they had in the past. One manufacturing firm provided a solid example, stating that in 1952 they produced 2,000 units with more employees than they now have to produce 7,000 units. Most employers spoke to a flattening of the management structure within their organizations, which directs more responsibility to lower levels. As a result, firms need to recruit applicants with a wider range of skills who would work more effectively in this new organization.

Supplemental comments centered around student preparation, particularly at the high school level. The employers felt that high school curriculums tended to be too programmed, allowing students no time for practical course work such as keyboarding skills, reading, written communication, math, budgeting, industrial arts, home economics, and socialization. Subcommittee members expressed concern for the 50 percent of the student population that has been labeled the forgotten half. It was felt that in many cases students are ignored when they are identified as neither gifted nor at risk. More programs need to be created and designed to identify and develop this population, who would prove to be the core of our workforce of the future.

RECRUITMENT PATTERNS

All employers recognized that their sources of applicants had expanded. They felt strongly that employers would go wherever necessary to locate a
quantity and quality of applicants appropriate to the needs of their organizations. This effort would include going beyond the state of Iowa further into the midwest for applicants, establishing more satellite offices both within and outside the state of Iowa, and taking advantage of less mobile labor located in smaller markets. Most acknowledged that they are seeing a greater number of employees commuting from greater distances to their work sites, particularly from rural areas incapable of offering appropriate work opportunities. Two employers were currently seeking candidates in an international market, and another was thinking seriously about expanding into this labor supply.

Employers use a wide range of channels to recruit and employers agreed they need to continue to be creative in sourcing an appropriate applicant pool. A number of channels were seen as particularly important, including classified advertisements in newspapers and periodicals, employee referrals (several employers indicated they paid employees bonuses for candidate referral upon placement in the organization), retired workers, temporary employee services, and college relations and on-campus recruitment.

A number of other channels are also utilized: radio advertisements (several employers indicated they increasingly use this source); incentive compensation programs; career fairs; high school and college seminars; on-line computerized job listings; cooperative education and internships; business education partnerships; outreach into the community to retirement homes, social agencies, churches, and state agencies; exchange programs bringing potential candidates into the work environment to shadow employees; and outplaced employees or those from similar industries.

Typically employers attempted to source candidates through the most economical resources available to them. However, some positions were so difficult to fill that the employer would use the services of contingency employment agencies and executive search firms. They all agreed that they repeatedly use the same firms and establish a rapport with those firms in order to ensure quality applicants and negotiated fee structures. Currently, no one was using leased employees, although several employers subcontracted work to smaller employers.

It is noteworthy that all employers reacted negatively to the possibility of utilizing Job Service and all recounted difficulties in working with that division. One employer indicated that the relationship with Job Service had been improved by the creation of a business advisory council in their area. This council provided the opportunity to provide feedback to their local job service office. Employers were concerned that Job Service was
not "user friendly," did not have a knowledgeable and well-developed staff, failed to build rapport with either applicants or employers, and lacked a degree of customer service and professionalism that the employer/clients demanded from their own employees. They felt that Job Service could provide a number of valuable services to employers, particularly to small businesses, new entrepreneurs, and those living in rural locations. They also felt that these services did not necessarily require a corresponding increase in the funding for the Job Service office but rather an evaluation of the effectiveness and efficiency of the current systems and services. All employers had diminished their use of the office or were not using it at all, even though they had worked more closely with Job Service in the past.

**FUTURE RECRUITMENT CHALLENGES**

Several themes related to recruitment and hiring in the future, some reflecting the demographics outlined in Workforce 2000. Employers agreed they need to deal more effectively with the conflicting roles and the corresponding demands placed on their employees. Many employers had or were contemplating an expansion of their alternative work schedules, including shift work, part time positions, job sharing, telecommuting, and use of temporary employees.

None of the employers considered handicapped workers a non-traditional source of applicants, since all had been attempting to recruit capable workers from this applicant pool for quite some time. These employers also acknowledged that the labor force is changing, to include an aging population and more women and minorities and that interpersonal skills are increasingly necessary to help organizations manage cultural diversity.

Last, because most employers see a flattening of their organizations, they are concerned about retaining employees and attracting applicants if promotions are not always the reward for individual achievement. All employers emphasized a commitment to promotion from within and indicated this would continue in the future. Several larger firms report an increase in hiring more experienced candidates and face the problem of meshing the philosophies of those hired from outside the organization with those promoted from within. One organization expressed little concern over college graduates accepting employment outside the state, but rather a concern for the lack of preparation of those entering clerical jobs. Another organization indicated an emphasis in the future on automated technology and robotics.

Supplemental comments emphasized a need for business and education to work closely together in preparing students to obtain the skills neces-
sary to succeed in the corporate environment. It was felt that educational curriculums would need to be modified to reflect the changes in skills needed in the business environment. Technical skills appeared to replace basic skills as an emphasis in most curriculums. It was also felt that high schools and colleges needed to coordinate their curriculums more closely for the most effective preparation of all applicants entering the workforce. Society seems to ignore those who are not college bound, sending the message that college-educated people are successful and that those who are not college educated are associated with failure. Equal emphasis should be placed on white collar and trade professions.

Although the charge of the subcommittee was to deal with recruitment and hiring, members emphasized that employee retention was tied to recruitment and hiring issues. An inability to retain employees has a direct impact on the recruitment and hiring costs of an organization. In addition, the more complex and sophisticated the workplace becomes and the more expectations are placed on employees, the more likely it is that individuals will be unable to cope with pressure and that turnover and absenteeism will increase.

SUMMARY

Employers represented on this and other subcommittees are keenly aware of the recruiting challenges facing them. They see the need to

- work closely with education,
- research and implement alternative work schedules to attract and retain applicants and employees,
- continue to expand the areas from which they recruit, and
- enhance the working relationship between the company and employees to maintain or improve retention.
THE ROLE OF FLEXIBLE WORK OPTIONS

Employers around the country are offering more flexible work options to their workers today than ever before, and Iowa employers are following this lead. Generally speaking, these work options are designed to attract qualified workers: 1) to specific jobs; 2) with specific critical skills; 3) to meet specific business needs (to enhance operational flexibility); and 4) who wish or need to work other than a traditional work schedule.

Many Iowa private employers are using one or more different flexible work options to help attract and retain an efficient and qualified workforce. For example, the flexible work schedule has proved to be an effective recruiting and retention tool for a number of companies. However, these companies do not necessarily regard a flexible schedule as an effective substitute for a competitive compensation and benefit package. Employers who limit their work schedule to the traditional 40-hour workweek and 8 to 5 workday may find themselves at a competitive disadvantage if the supply of qualified workers shrinks in the future and these workers prefer a more flexible schedule.

A number of factors have combined to encourage employers in Iowa and across the nation to adopt more flexible work options. Households increasingly have two wage earners who value flexibility in their working lives. Demographic changes have created a much more diverse workforce, with more women, more single-parent families, more elderly, and fewer young workers. Companies believe that employees' perceptions of the role that work plays in their lives has changed in recent decades, with more value being placed on accommodating family obligations and less on career goals. Businesses also note the increasing importance of flexibility in business operations, which enhances competitiveness and customer service (for example, cross-trained employees or the ability to increase or decrease employee head count with the workload, without incurring unemployment costs).

Employers also increasingly believe that there are costs of inflexibility; in the form of adverse effects on worker productivity (greater absenteeism, higher levels of stress, lower job satisfaction, higher incidence of safety violations). Some employers have also found that some workers will choose to accept a lower wage and/or less benefits as a trade-off for a more flexible work schedule that better accommodates their personal situation.

Employers who are accommodating these social and business changes by adopting more flexible work schedules benefit in a number of ways. Some
have improved their management flexibility and run a more efficient operation. Better matching of the labor force with the work requirements minimizes unnecessary and unproductive workers during slack periods. Flexible schedules also give access to a larger supply of labor, improve worker safety and productivity, and enhance management's ability to serve the customer better. With respect to workers, increased flexibility often reduces benefit cost and can lower turnover, thereby reducing training costs.

A larger supply of labor, enhanced business flexibility and improved worker productivity appear to be the most important reasons for encouraging employers to adopt flexible worker options. However, the opportunity to reduce overall labor costs is also a major incentive, particularly in the face of the escalating health care benefit cost. Several of the work options provide the employer an opportunity to reduce overall labor cost and still offer a competitive compensation and benefit package. A flexible work schedule is particularly effective in providing access to two-income families, workers who want less than full-time employment, retirees who want less than full-time employment, parents with young children, single parents who need to accommodate family obligations and child care availability, former employees who have work skills and company-specific knowledge but want less than full-time employment (typically retirees and individuals who have left because of family obligations), youths who legally must work less than 40 hours, disabled workers, and seasonal workers.

USE OF FLEXIBLE WORK OPTIONS

A number of flexible work options have been used by firms in Iowa. The most important options are discussed below.

Alternative Full-Time

One of the most popular flexible options with Iowa employers is the alternative full-time work schedule (sometimes also referred to as a "compressed workweek" schedule). Variations of this option are being utilized by private sector employers to attract a qualified and skilled workforce, especially in work situations which require 24-hour-a-day and 7-day-a-week coverage. For example, 10- or 12-hour workdays are being employed (four 10-hour days or three 12-hour days with pay for 40 hours); these work schedules still qualify the worker for the full-time employee benefit package.

Employers in Iowa who have tried this approach report improved worker productivity, improved worker safety, and reduced absenteeism. They attribute these results to a more satisfied and motivated workforce (because
the work schedule is more convenient and better suited to their particular situations) and the higher costs of a (longer) missed workday.

Job Sharing
Job sharing is being utilized by certain Iowa employers, but generally on a selective basis. These employers have found that it is more beneficial for the workers sharing the job to schedule themselves than for management to do so. It appears that cellular work (i.e., situations where the work group functions as a team) has motivated employers to utilize the job sharing work option. Iowa employers have found, however, that the shared work is more often independent and requires minimal communication and coordination among those seeing the job through to completion. Employers find a unique attraction of work sharing is that workers can be assigned to complement one another’s skills and strengths.

Flextime
Some Iowa employers are successfully using flextime as a work option, but generally only in full-time work schedules (i.e., variations of the 40-hour week). In Iowa, flextime is used mainly in office settings and rarely on the production floor. Employers with experience of flextime stress that it is critical to manage closely in order to maintain effectiveness.

Regular Part-Time
Regular part-time work schedules are also widely used by Iowa businesses. Most employers compensate part-time workers at a lower hourly rate than that paid to full-time workers, and they are excluded from most, if not all, fringe benefits—especially costly health-care-related benefits.

Child Care
At present, few employers in Iowa provide either financial assistance for child care or on-site child care services for their workers. Some employers help their workers identify child care providers in the community but stop short of any financial assistance.

The most common and growing child-care-related service offered by Iowa employers is participation in a Section 125 Cafeteria Plan. Section 125 of the Internal Revenue Code (dependent care assistance programs) allows qualified workers to have their employers treat all or a portion of child care expense (up to a maximum of $5,000 per year) as a “before-tax” adjustment to the worker’s gross payroll earnings (the employer typically pays the child care provider directly and deducts the cost from the employee’s
gloss earnings). Thus, child care expenses are paid with before-tax dollars, so that more service can be purchased for the same net cost. Employers who are willing to provide this extra administrative service to their workers find it particularly effective in recruiting single-parent workers because of the significant tax saving involved. In addition, the child care deduction is exempt from the federal FICA tax for both employer and worker.

**Work-At-Home**

One option that appears to be little used in Iowa is work at home. This particular work option appears most applicable to situations where the work is very independent and can be compensated on a piece-rate or job-completed basis, such as word processing or a special one-off project. Its current use by Iowa employers is generally limited to temporary situations. For example, work at home may be mutually convenient to employer and employee during a maternity leave, in which case its use may not really be considered a work option.

**Van Pools**

The subcommittee felt that van pools are not very advantageous in Iowa, except perhaps in very select instances. What use there is of this option tends to be concentrated with employers in larger metropolitan areas, where traffic congestion during key commuting hours is a severe problem.

**Contracting**

In addition to more flexible work options, Iowa employers are increasingly utilizing contract workers to fill needs which may be temporary, seasonal, or long term in nature. Retirees are sometimes employed as independent contractors for short projects, (as company tour guides, for an example) because of their individual expertise, knowledge of the company, and social security benefit considerations. Other contract employees are being hired through employment contractors for job classifications ranging from production worker to professional and often for extended time periods (i.e., for more than a year in some instances). The use of contract employees generally increases direct hourly costs but reduces benefit costs (the benefits provided by the employment contractor to the contracted employees are generally less favorable than the benefit package which might be provided by the employing company). The use of contract workers also provides the employer the opportunity to "cherry pick" the most productive workers for eventual regular employment. The contract worker gains by being able to check out and evaluate the employer before committing to regular employee status.
INTRODUCING FLEXIBLE WORK OPTIONS

In the experience of employers who have adopted flexible work options, a number of factors appear to promote successful outcomes. First, the company must gain the support and understanding of the regular full-time workforce, management, supervisors, and the leadership of organized labor, if applicable, before taking any action. Natural resistance to change among all groups within the company must be allowed for and expected. Employee involvement and advance communication and discussion will help to enhance the prospect of successful implementation. Sears Manufacturing company in Davenport, Iowa, is an example of an employer that has earned national recognition for gaining the support of its workforce and organized labor in implementing flexible work options successfully. Companies must also believe that a sufficient supply of workers exists who will prefer different working conditions. Tax considerations are important for some groups of workers, such as retirees. State and federal regulations will limit the changes that can be contemplated.

ROLE OF TRAINING AND DEVELOPMENT PROGRAMS

One of the challenges in the transition to new work options is making the new worker productive quickly. This challenge can best be met through effective worker training and development programs. A number of different training resources are being utilized (university and community colleges, employer associations, apprenticeship programs, in-house training programs, etc.).

Supervisor training is particularly important for the new work options. Successful implementation requires supervisors to understand the organizational implications of the various work options and how to make them work most efficiently and effectively for both the employer and worker. Some supervisors may view managing workers employed under these options as an added “inconvenience” to their already difficult job. But it is crucial that supervisors have the right attitude about the work options if they are to be successfully implemented. Education and training can help mold the right attitude. Efficiently scheduling, assigning, and monitoring work performed by less than full-time workers or by workers with flexible work schedules are new skills to many supervisors.

Unfortunately there are many variables that directly and indirectly influence the use and acceptability of the various flexible work options. In addition there is a nearly unlimited range of facts and circumstances among the vast number and kinds of private and public businesses. Attempting to combine differing elements and data makes the generalizations about work op-
tions in this report misleading, at best, perhaps totally inadequate in some instances. The subcommittee particularly regrets two key business segments were not represented among its members: retailing and public sectors.

CONCLUSIONS

• Flexible work options are playing a more significant role as time passes, for employers in the U.S. and in Iowa, in attracting and retaining qualified workers.

• There does not seem to be any serious reluctance on the part of Iowa employers to the use of flexible work options.

• It is believed Iowa workers are fairly adaptable to the flexible work options because of their strong work ethic and because the work options complement the employment needs of the state’s agricultural population who may wish to supplement their agricultural income.

• As the Iowa labor market continues to tighten, it is clear employers who choose not to adopt more flexible work options will be at a competitive disadvantage to those who do.

• The evidence suggests that incorporating more flexible work options in the work schedule in most instances is “just plain good business.” That is, it is a win-win situation for both employer and worker. However, the evidence also suggests certain work options just do not work in some industries or work situations where there are too many variables.

• It is important for employers to plan their work schedules carefully. The flexible work options can be used to create a more “stable” workforce.

• For the effective use of flexible work options, the workers must be convinced of the merits of these options; forcing them on workers will most likely lead to failure.

In the final analysis, the challenge to employers is to develop a spectrum of work options which better accommodates the ever changing business environment and allows for working arrangements regarding hours, schedules, place of work, wages, fringe benefits, etc., that workers and employees see as mutually beneficial.
JOB TRAINING

CHANGING NEEDS IN THE WORKPLACE

A number of changes in how business is organized and operates has led to changes in the skills that are needed now and in the future. For example, an increased emphasis has been placed on quality and statistical control in manufacturing in recent years. As a consequence, workers must acquire more technical skills than in the past. Improved communication skills, problem solving ability, and technical knowledge are all important in modern manufacturing.

Some employers see work rules as restricting innovations such as the self-directed work teams that would allow the United States production worker to compete with production workers in other countries, particularly Japan and West Germany. They see a need for both management and labor to reevaluate work rules and identify barriers to implementing more efficient production systems.

At the same time, however, the skills needed to perform some jobs have not changed greatly in recent years and may not change much more in the foreseeable future. The financial services industry continues to need a large number of workers for data entry. One major employer in this industry in Iowa has the same number of low-skill-level jobs in 1990 that it had six years ago. The increasing use of data processing, while improving efficiency in many areas, may lead to additional demand for some low-skill tasks. For example, companies often keep two sets of records, both electronic and hard copy, thus requiring more clerical workers. In the view of some employers, service industries will continue to have a high demand for low skilled workers in the years ahead.

EMPLOYEES’ SKILL LEVELS

Some workers in Iowa firms appear to have low educational achievement. Subcommittee members noted that about one third of workers recently laid off by two companies could not read beyond the seventh grade level, and about one third did not have a high school diploma or GED. This fact suggested to the subcommittee that some production workers in Iowa lack the ability to upgrade their skills to meet the changing needs of employers. The subcommittee also felt that other barriers to upgrading skills may exist in Iowa. Older employees who have been in the system for many years may be unable or unwilling to plan and manage for self-directed work teams. Managers also resist change. However, the problem may well be with the system as much as with the people.
As regards entry-level workers, the skill level of high school graduates in Iowa does not seem to be lower than in the past. However, some employers report that, for certain jobs, they now recruit from a relatively lower-skilled group of entry level workers than in the past.

PUBLIC EDUCATION AND TRAINING

Subcommittee members suggested that changes in Iowa’s school system might better prepare students for their working lives. Aptitude tests, interest inventories, counseling sessions, and personality tests could all be conducted in the K-12 system. These programs cost little and give good results. Programs that focus on children at risk may incur additional costs but could be extremely important to the future of the Iowa workforce.

The Iowa 623 Job Training Program has been very popular with businesses. Although it remains an open question whether this program has actually increased the number of jobs in Iowa, subcommittee members expressed the view that it has increased the amount of training undertaken by Iowa’s companies. Moreover, the program’s greatest value may lie in strengthening relationships between community colleges and businesses in the state.

Some public-sector training programs focus on workers with low skills. This focus may neglect two other groups: workers who wish to upgrade their skills, and new entrants to the labor force. Some believe that this focus on low-skilled workers may limit the perceived or actual effectiveness of these programs. An approach aimed at a wider range of workers may lead to more successful results.

At a more fundamental level, the subcommittee felt that the state may need to reevaluate its overall educational policy. They believe that a maldistribution exists between the needs of employers for workers and the current structure of Iowa’s educational system. A recent study by the Des Moines Chamber of Commerce showed that 40 percent of people hired in clerical jobs have college degrees. If such mismatches exist on a wider scale, the state’s education system may be producing a workforce that is over-educated relative to the needs of businesses in the state.

TRAINING BY BUSINESSES

Iowa employers undertake a significant amount of training for their workers. A number of companies have sophisticated in-house training programs both for new workers and for upgrading the skills of existing workers. Some companies require all employees to undertake minimum amounts of training each year.
In some cases, companies cooperate with educational institutions to provide training. One company works closely with the Des Moines Area Community College to operate a two-year degree program on the company's premises.

The increased cost of additional training must always be weighed against gains in effectiveness. Continually increasing the emphasis on customer service and training to meet competitive challenges tends to drive up costs significantly.
LABOR AS A FACTOR IN PLANT SITE SELECTION

One major way in which the supply of labor in Iowa can affect economic development in Iowa is as it influences decision makers who are considering where to locate a new business operation or expansion of an existing operation. A subcommittee was set up to examine what factors related to labor supply are important in siting decisions. Since many members of the subcommittee had participated in location decisions for their companies involving sites in Iowa, their experience is of significant practical importance.

ADEQUATE SUPPLY OF LABOR

An important factor in any location decision is the availability in the area of an adequate and suitably skilled supply of workers. It is important to stress that different industries have different needs: the types of workers desired vary greatly in skill, experience, and number. In many cases, companies are drawn to locations where a number of companies already employ the types of worker they seek.

Areas of high unemployment (15 to 20 percent) are not considered desirable places to locate a plant, because the high unemployment figures could have resulted from external problems in the area. Businesses may perceive that such areas lack a community commitment to industry or have demonstrated negative attitudes toward industry or commerce in general.

Retirees are often cited as an untapped labor force. Most subcommittee members believe that many retirees do not want to come back to work and have not been utilized to any significant degree. Some companies suggested that one way to effectively employ retirees would be in two, three, or four person job pools. At present, however, state unemployment regulations discourage this type of arrangement because of regulations regarding job sharing, temporary employment, and flexible employment practices.

Workers returning to Iowa after living in other states were not felt to be a significant part of Iowa’s labor supply, from the standpoint of a business contemplating locating in the state. Subcommittee members felt that few workers are in fact returning to Iowa, and generally those who do are at the professional level. Non-exempt workers are considered mobile only within the state.

Few companies making location decisions consider forecasts of labor supply 10 or 20 years ahead. The subcommittee members agreed that this practice would be useful, however.
QUALITY OF LABOR
As important as a ready supply of suitable workers is the quality of the potential labor force. Work ethic and productivity are significant factors in plant site selection. The subcommittee felt that non-exempt employees are the most important group to decision makers, as they form the backbone of most workforces. In this regard, Iowa is attractive since it is perceived to have a productive group of workers.

Companies are interested both in the initial quality of workers and in their potential for advancement. Since most companies prefer to promote from within. One member of the subcommittee reported significant success in promoting workers on line to higher positions within the business. This success was attributed to Iowa’s strong educational system.

Iowa’s community college system is excellent and is a major positive factor in plant location. In addition, the HF 623 job training program is very attractive and one of the best in the country for business. Since modern growth companies look for people who are able to use their minds and work smarter, Iowa has an advantage in providing this kind of employee because of its strong educational system.

ABILITY TO ATTRACT PROFESSIONAL AND TECHNICAL PERSONNEL
Companies moving to or expanding in Iowa require professionals and workers with highly technical skills. Subcommittee members felt that a number of real or perceived obstacles exist that limit how confident Iowa employers can be that these kinds of workers can be attracted to, or retained in, the state.

Iowa has an image problem in attracting professional and technical personnel to the state. Often people have an image of Iowa as a cultural wasteland or an undesirable place to live. However, when they move to the state they find an excellent quality of life.

At the entry level, college co-op programs that allow out of state students to take internships with Iowa companies might be a way to recruit professional and technical personnel. Real experience of life in Iowa may change preconceptions and encourage these students to consider careers with Iowa companies after they graduate.

Secondary employment is becoming an important issue. Many rural communities have found it difficult to attract professional and technical personnel in part because of a lack of job opportunities for the worker’s spouse. In
some instances, about one quarter of upper-end prospects have refused offers of employment for this reason.

The state could take some actions that would help companies in their recruitment of professional and technical workers. A video aimed at non-Iowa professional and technical personnel would help alleviate concerns about the state’s image. Indeed, the unattractive image of Iowa as a place to live must be addressed. The state could also help companies find good candidates for professional and technical positions. Many small companies simply do not have the resources to effectively search at a national level for these important workers.

**AVAILABLE SUPPLIERS AND OTHER SUPPORT SERVICES**

Firms moving to Iowa will need local suppliers for materials and services. Firms look for a thriving business climate with available support services when locating a plant. A good labor supply in these companies is important for plant site location decisions.

**ENVIRONMENT WHICH SUPPORTS FLEXIBLE EMPLOYMENT**

More and more companies are finding that temporary employment is more beneficial than traditional full-time employment. Industries today are often subject to business and consumer cycles. Production schedules must coincide with cyclical needs. Hence demands for labor fluctuate more than in the past.

In the subcommittee’s view, the state needs to develop programs that will promote flexible employment. Whether the state’s culture allows for wider use of flexible employment practices is an important question for the state’s attractiveness to businesses locating plants.
FRINGE BENEFITS

Fringe benefits are an important part of the compensation package of workers in Iowa. The subcommittee on fringe benefits discussed which fringe benefits seemed to be most important in attracting and retaining workers.

HEALTH INSURANCE

Health insurance has become one of the most important issues in management-employee relations; indeed, it is now the most important cause of strikes. Both companies and employees are concerned that overutilization of health care may be inflating the cost of health care unnecessarily. However, employees are reluctant to change long-standing arrangements under traditional health care plans. Moreover, because of their non-taxable status, health benefits are popular with both employers and employees.

The subcommittee believes that it is the role of management and labor to protect the employee and make certain that basic needs such as health care insurance are in place. The committee agreed there should be minimum standards for all employee agreements. One recent trend is the use of health care benefits as a means of attracting part-time employees, a group that usually has not had this fringe benefit.

FLEXIBLE TIME

One option that is increasingly popular with employees is the availability of flexible schedules. Managers in general do not prefer flexible schedules but adopt it when employees value it highly. Typically, five-day weeks are replaced by four 10-hour days, or four 9-hour days plus one 4-hour day. One possible negative effect of these new arrangements is that any need for overtime may mean that a worker is spending 14 hours at work, and productivity may fall significantly after 10 or 12 hours. The extent to which flexible schedules are used in Iowa is unknown at this time and may be a useful topic for future research.

DEPENDENT CARE

Employees are becoming more concerned with care of dependents, whether elderly or young, as a employment issue. The subcommittee felt that for a number of reasons, most notably questions of liability, that employers should not be required to provide child care for employees. Instead, the state must offer assistance and encourage joint development of child care centers for workers.
OTHER BENEFITS

A number of fringe benefits are important but less controversial than in the past. Benefits such as vacation time, retirement programs, and sick pay are long-established and rarely the center of disputes. In recent years, however, the long-term security and solvency of retirement funds has become an issue of great concern to employees.

Some companies have experimented with a cafeteria system of benefits, allowing employees to choose among different kinds of benefits. Subcommittee members felt that this flexibility was introduced in many companies five years ago, but had proved less popular than predicted because employees often tended to opt for cash payments rather than investing in protection for their families.

Particular kinds of fringe benefit are highly valued by some groups of employees. For example, parking is an extremely important fringe benefit in metropolitan Des Moines but would not be considered important in a manufacturing facility located elsewhere in the state.
LABOR FORECASTING

The subcommittee was given a brief overview of labor force trends, as described in "Iowa Workforce 2010," a report prepared by the Department of Economic Development for the governor's Target Alliance project. The report notes a slower growth in the Iowa workforce, because fewer young people are entering the workforce and because the labor force participation rate of women is near its practical upper limit. The demand for unskilled labor is expected to decrease, and the proportion of new jobs requiring a college degree is expected to increase from 22 percent today to 33 percent by the year 2000. Job content is expected to change rapidly, requiring employees to train continually, learning and upgrading their skills.

In its discussions, the subcommittee found that reality is already beginning to reflect some of the trends noted in the "Workforce 2010" report. For instance, the insurance industry is having a difficult time finding people with the right clerical and keyboarding skills. Nurses are also in short supply, as are seasonal workers in agriculture. It is difficult to find scientific labor.

The subcommittee organized its discussion of forecasting into four main areas, summarized below.

**Will labor skills and/or availability act as a constraint upon economic growth?**

None of the sub-committee members felt that labor issues would act as an absolute constraint upon economic growth. Responses ranged from a belief that there is no problem to a belief there will always be an adequate supply as long as pay is adequate and a recognition that new strategies are necessary to recruit and retain a more diverse workforce. Companies will "import" labor from outside the region if that is cheaper (or more feasible) than importing the raw materials. Conversely, companies will relocate to areas with an adequate supply of labor if it makes economic sense to do so. Both approaches have been and are being used in Iowa. Because the labor market will be tight nationwide, Iowa should not be at a competitive disadvantage. It was suggested that, in this kind of environment, companies that use state-of-the-art management techniques to boost employee productivity will have an edge.

**What kind of information and methods are you using to make this assessment (e.g., government forecasts, your own forecasts, judgement)?**

Most companies do not appear to project systematically nor use existing labor forecasts to assess future human resource trends. For most companies
with current pressing needs, little time can be spent looking ahead at potential workforce issues. Subcommittee members reported that, in the main, their companies have no formal mechanism for projecting labor demand and supply; rather they respond as needs are felt. Any information that is available and used is most likely to have come from the media or trade association publications or conferences. With some exceptions, there is almost no awareness of government labor and occupational forecasts.

Some larger companies, however, do project labor needs and match this information with projections of labor supply. In at least one case, this effort has led to a strategic decision to open satellite offices rather than to continue expanding solely at the central location. In another case, the projections have led to an exploration of technology as a substitute for labor. One company has a department dedicated to workforce planning. This company works closely with providers of workforce information.

**What are the emerging skill needs in your business? Do you foresee any problems ahead with respect to these skill needs? Is your company doing anything specific to prepare for these changing skill needs?**

Some companies are experiencing changes in skill requirements. For instance, one company reported that it is digitizing images. Because of this increased automation, low-level jobs will be phased out in the near future and the new jobs will require slightly higher skills. Companies that are using quality management techniques report they are searching for individuals with leadership and problem-solving skills.

Another company reported that an analysis of skill level changes showed that the percentage of jobs represented by low skill levels remains the same today as it was in 1984. In this case, the expectation is that the mix will remain about the same in the future.

In some cases, current reality differs from some projections that have been made. At present, many companies are experiencing a tighter market for relatively low-skill workers, while college graduates are in abundance. Longer-term trends suggest that this situation will change as new jobs are created with a higher skill content. It will therefore be important to keep a perspective on the long-term as solutions to shorter-term problems are crafted.

None of the companies reported having established regular channels of communication with the educational community (K-12 or higher education) to let them know how skill requirements are changing, though the
need for better communication was generally acknowledged. One idea was to group isolated school districts into regions for purposes of working with business.

What is the appropriate role for the public sector in addressing labor availability issues? For instance, are labor forecasts provided by government useful? How can they be made more useful?

It was agreed that providing objective information is a concern of government. Business wants assurance of unbiased information. Better communication of that information is also needed—information about labor markets and occupations may not be getting to the people who need it. Usually, in a large company, the information is needed by the strategic planning team.
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