AN OVERVIEW OF ECONOMIC, SOCIAL, AND DEMOGRAPHIC TRENDS AFFECTING THE U.S. LABOR MARKET

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Abstract

This paper offers an assessment of broad social, economic, and demographic trends affecting the US labor force now—in this time of strong economic growth—and in the future. The focus is on demographic trends, work and family issues, health and pension patterns, technical change, adjustment to low unemployment, globalization, and the plight of low-skilled workers. The paper identifies several important trends and patterns, including: 1) the largest demographic shift relevant to the job market is the impending decline in the share of prime-age workers; 2) over 60 percent of workers do not have their own children in their home, but an increasing share of workers care for elderly relatives; 3) the impact of the substantial shift from defined-benefit (DB) to defined-contribution (DC) pension plans on workers is unclear, but some estimates suggest that the typical worker will gain financially; 4) while investment in computers is spurring technical change, the impacts on productivity in firms vary a great deal because of the varying organizational responses to technology; 5) the labor market has adjusted surprisingly well to low unemployment, partly because college-educated workers have accounted for over 90 percent of the net growth in employed adult workers during the 1992-99 expansion; 6) globalization of production is unlikely to have weakened the position of US workers because overall foreign investment in the US has exceeded US investment abroad and foreign direct investment has been nearly as high as US direct investment; 7) while the economic expansion greatly reduced unemployment and expanded job opportunities for low-skill workers, many less-educated men who left the labor force in earlier years have not reentered the job market.

Brief Description

This paper offers an assessment of broad social, economic, and demographic trends affecting the US labor force now—in this time of strong economic growth—and in the future. The focus is on demographic trends, work and family issues, health and pension patterns, technical change, adjustment to low unemployment, globalization, and the plight of low-skilled workers.

Keywords: Labor Market, Jobs, Economic, Social, Demographic

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Introduction

The recent performance of the US job market has proved surprisingly strong. Unemployment rates are at a 30-year low and far below what most macroeconomists predicted could be reached without substantial increases in inflation. Job growth has been strong. Employers have expanded their recruitment to reach large numbers of youth, low-skilled workers, mothers heading families, and other groups generally not favored in the labor market. Even wages, which had been rising only slowly, have been increasing more rapidly.

In the context of today's good times, it makes sense to step back and assess the broader trends affecting the job market of today and the future. One rationale is to put in place policies that can help sustain the economic expansion without spurring a new round of inflation. A second rationale is to improve our understanding of the interactions between the job market; emerging social, economic, and demographic trends; and public policies. What forces will policymakers have to confront in the future? Is wage inequality likely to increase in the future? How can we best meet employer demands while giving priority to the needs of low-skilled workers and their families?

The purpose of this paper is to contribute to the dialogue about these and related questions. We review seven broad social, economic, and demographic trends affecting the US labor force now and in the future. The seven topics deal in turn with demographic trends, work and family issues, health and pension patterns, technical change, adjustment to low unemployment, globalization, and low-skilled workers. The purpose is first, to set the context for new research by bringing together existing knowledge and second, to provide some initial ideas relevant to public policy. Clearly, government policies have a considerable influence on the job market. If new policies are derived informed by the

latest research, better policies may materialize.

I. Demographic Change and the Future Workforce

Important demographic trends will take place in the workforce over the next 10-15 years. The emerging patterns are the result of ups and downs in birthrates (low in the late 1920s and early 1930s, high in the late 1940s through the early 1960s, and modest growth in the late 1970s through the early 1990s). The population and labor force will continue to diversify, as immigration continues to account for a sizable part of population growth. Projections suggest that the Hispanic and Asian shares of the population will rise from 14 percent in 1995 to 19 percent in 2020.

BLS projections imply that over the next decade, 40 million people will enter the workforce, about 25 million will leave the workforce, and 109 million will remain. Although only a modest reduction will take place in the overall growth in the workforce (from 1.3 percent per year to 1.1 percent per year), the composition of growth will generate rising shares of young (under 25) and older (45 and over) workers and a decline in the share of middle-age workers.

These trends constitute a sharp reversal of the last decades. Consider the trends in the youth labor force (16- to 24-year-olds). After declining by 9 percent from 1986 to 1996 and not growing between 1976 and 1986, the youth labor force will keep pace with the overall labor force with an expected 15 percent increase over the next decade. More dramatic are the changing patterns of growth among prime-age workers and older workers. The prime-age group of 25- to 54-year-olds accounted for virtually all the workers added to the labor force over the last two decades. Between 1976 and 1996, 38 million prime-age workers and 1.7 million workers 55 and over joined the labor

force, while reductions in the youth labor force amounted to about 2.1 million. *Over the next decade, instead of having nearly all increases in employment coming from the 25- to 54-year-old age group, fewer than one in three (31 percent) of the added workers will be in this category.* Nearly half of the additional workers will come from the 55-and-older category, while about one in five will come from the youth labor force.

The overall reversal in the prime-age category of workers masks a major change within the group. Note in Table 1 that the most experienced workers (45- to 54-year-olds) will expand rapidly enough to raise their share of the labor force. At the same time, declines will take place in the absolute numbers of 25- to 34-year-olds and of 35- to 44-year-olds. As a result, the proportion of 25- to 44-year-olds in the labor force will decline from 52.6 percent in 1996 to 44.5 percent in 2006. Workers in the 45+ categories will raise their demographic share from 32 percent to 39 percent. These are large and dramatic changes for a decade. The labor force share is increasing among older workers (from 28.8 percent to 36.2 percent among 45-to 64-year-olds) and younger workers (from 15.8 percent to 16.4 percent among 16- to 24-year-olds). However, the proportion of workers beyond the normal retirement age of 65 will remain below 3 percent.

The specific trends in the age composition of the workforce vary with future time periods and are subject to uncertainty related to labor force participation rates. The aging of the population is largely the result of boom in births during the 1946-64 period. Over the coming decade (through 2005), substantial growth will occur among 45- to 64-year-olds, but the number over age 65 will increase only modestly (by 5 percent). However, between 2005 and 2010, the population of 65- to 69-year-olds will rise by 17 percent and then explode by another 37 percent

Table 1: The Changing Mix of the U.S. Labor Force by Age, Ethnicity, and Sex: 1976-2006

	1976	1986	1996	2006
Total Labor Force	96,158	117,834	133,943	148,847
		Percentage of the Labor Force		
Age				
16-19	9.4	6.7	5.8	6.0
20-24	14.9	13.1	10.0	10.4
25-34	25.2	29.4	25.3	20.7
35-44	18.0	23.1	27.3	23.8
45-54	17.7	15.1	19.7	23.6
55-64	11.9	10.1	9.1	12.6
65-74	2.6	2.2	2.4	2.2
75+	0.4	0.4	0.5	0.6
Ethnicity				
White, Non-Hispanic		79.8	75.3	72.7
Black		10.7	11.3	11.6
Hispanic		6.9	9.5	11.7
Asian		2.9	4.3	5.4
Age within Sex				
Males	59.5	55.5	53.8	52.6
16-24	22.3	18.7	15.5	16.4
25-39	35.3	42.6	39.7	32.4
40+	42.4	38.7	44.8	51.2
Females	40.5	44.5	46.2	47.4
16-24	27.2	21.2	16.2	16.4
25-39	33.1	42.1	38.9	31.7
40+	39.7	36.7	44.8	52.0

Source: Howard Fullerton, ALabor Force 2006: Slowing Down and Changing Composition, *Monthly Labor Review*, November 1997, p. 23-38.

in the 2010-2020 period. The jump in the 70-and-over population will occur between 2010 and 2020, rising by 38 percent from 24.6 to 31.8 million people.

How these figures translate into labor force participation is a major question mark. Among older workers, there are a variety of relevant factors. Private retirement pensions will cover an increasing share of workers 65 and over and thus should encourage retirement. However, older workers will increasingly be drawn from those with college degrees or some years at college and fewer will be high school dropouts. In 1997, 27 percent of 60- to 69-year-olds lacked a high school degree or equivalent and only 18 percent had a BA degree. In one decade, only 17 percent of 60- to 69-year-olds will be without a high school degree and 27 percent will have earned a BA degree. Since educated workers participate in the workforce at substantially higher rates than less educated, the country could see a reversal of past trends in labor force participation rates. In one such scenario, the Hudson Institute predicts substantial increases in the labor force participation rates of the 55-and-older population. Participation rates of male 55- to 64-year-olds would return to 1970 levels, and about half of 65- to 70-year-old men would work. While these upward shifts appear unlikely, even moderate growth in participation by older workers would significantly raise the growth of the overall labor force beyond what is currently projected. Poll data support this claim, indicating that most baby boomers expect to work beyond age 65.

Outside the U.S., other OECD countries also exhibit the trend toward an older labor force. Between 1995 and 2030 the proportion of the labor force made up of 45- to 59-year-olds is projected to increase from 25.6 percent to 31.8 percent in the OECD as a whole, while the share of workers ages 60 and over is projected to rise from 4.7 percent to 7.8 percent. Increases in the educational attainment

of older workers, together with the increasing demand for skilled workers, may raise the share of older workers further by stimulating higher labor force participation rates. In OECD countries as a whole, the proportion of 45- to 59-year-olds with more than a high school degree will rise from about 21 percent in 1995 to 30 percent in 2015. Although the U.S. will see minimal educational gains in this age group, the educational attainment of U.S. workers over age 60 will rise significantly. Policy measures, such as raising the official retirement age and lessening financial disincentives to work, may encourage delays in retirement.

Shifts in the ethnic composition of the workforce will continue the patterns of recent decades. Immigrants will account for as much as half of net population growth over the next decades. Between 1996 and 2006 white non-Hispanic entrants will make up 49 percent of new labor force entrants, up from 43 percent during the previoU.S. decade, but well below the 1995 level of 76 percent. As a result, the share of non-Hispanic whites will fall to 73 percent in 2005. Of the nearly 15 million worker increase in the 1996-2006 period, about 7 million will be Hispanic or Asians. Hispanic-Americans will raise their share of new workers slightly from 29 percent to 31 percent, as will Asian-Americans, whose share will grow from 14.5 percent to 15.7 percent. By 2020, white non-Hispanic workers will make up only 68 percent of the workforce.

One concern about the changing ethnicity is the potential impact on the educational structure of the workforce. Hispanic workers have the lowest educational attainment of any major ethnic group; only 55 percent of the Hispanic population over age 25 had completed high school as of 1997, well below the 85 percent completion levels among non-Hispanics. Thus, unless Hispanic youth and immigrants raise their educational attainment, their growing presence in the job market will lower the educational

base of the labor force at the very time when the demand for skills is continuing to increase. The expanding share of Asians in the labor force will moderate this trend, since their educational attainment is higher than the rest of the workforce. As of 1997, 42 percent of Asians over 25 had at least a BA degree, well above the 23 percent rate for the overall population. As a whole, immigrants have an educational profile that embodies higher proportions lacking a high school diploma, but the same share of college graduates as non-immigrants.

While the last two decades witnessed significant increases in the share of women in the workforce (rising from 40.5 percent in 1976 to 46.2 percent in 1996), the female share will barely increase over the next decade. Still, by 2006 women will account for nearly half (47 percent) of the workforce. However, given the age composition shift away from the 25- to 44-year-olds, a declining share of women workers will be mothers with young children.

Changing marital and living arrangements could have significant implications for the workforce. Labor force participation rates are much higher and unemployment rates much lower among married than among unmarried men and women. Even in today=s tight job market (1998:1), unemployment rates are high among individuals who are in the never-married category. Never-married men experienced an 8.2 percent unemployment rate, far below the 2.1 percent rate among men who are married and living with a spouse. In addition, labor market outcomes are better among men living with at least one of their own children than among men with no children. The unemployment rate of never-married men is only 5.7 percent among those with children, but over 8 percent among those without children. Projections indicate that the share of American households consisting of families with children will decline from 48 percent to about 41 percent and that married-couple families with children will make up less than one-

third of families by 2010. To some extent, it is changes in employment opportunities that cause changes in marriage and family formation patterns and not the other way around. However, some of the marital and family changes have other causes and may well lead to worse job market outcomes.

Demographic trends will vary substantially by region of the country. Population growth will be much more rapid in the West and South than in the Northeast and North Central regions of the country. Projections suggest that California alone will add about 10 million people by 2015, or 22 percent of the nation=s total population growth. Texas and Florida will add close to another 10 million people. These three states, which currently account for about 25 percent of the U.S. population, will absorb 44 percent of the nation=s population growth. The growth of these states can be attributed to the fact that immigrants will continue to make up a large share of net population growth and they tend to concentrate in a few states. In 1996, for example, over two of three immigrants declared their intended state of residence as California, New York, Texas, Florida, New Jersey, or Illinois. These states absorb an even higher share (perhaps 85 percent) of the illegal immigration.

Selected Implications of the Changing Demographics

The declining proportion of middle-age individuals in the workforce has a number of implications. First, rising shares of workers will have over 25 years of experience or less than seven years of labor market experience. Fewer will be in their early careers. The age shifts in the labor force should exert little or no impact on the aggregate unemployment rate. Given today=s unemployment rates *within* age categories, the overall unemployment rate in 2006 will be identical to today=s average rate. Changes in the age distribution of the workforce will neither raise nor lower the overall unemployment rate.

Second, the declining numbers of 25- to 34-year-olds, together with their changing ethnic mix, may portend shortfalls in key professional areas. The number of earned BA degrees will remain constant over the next decade (at about 1 million per year) despite the rising demand for skilled workers and the increasing size of the labor force. As a result, new BAs will decline as a proportion of all new entrants to the labor force from 32 percent in the 1986-96 period to 30 percent over the following decade.

Third, demographic trends raising the percentage of older workers and potential workers have implications for individual, firm-based, and government training. According to a recent OECD report, the U.S. is distinctive in that training peaks in the 45- to 54-year-old years and drops off only moderately among the 55-to 64-year-olds. Table 2 shows that while older U.S. workers are more likely to obtain training than older workers in other countries, U.S. firms are less likely to finance training for younger workers than firms in other countries. Still, to the extent that the U.S. attempts to raise participation rates of older workers, the current moderate amounts of training provide a base on which to build. Labor markets are generating jobs with higher skill requirements, but taking advantage of these opportunities requires expanded training opportunities, especially among older workers trying to avoid the effects of obsolescence. Since firms generally do not train less educated workers, the growing number of older, less-educated workers are likely to place an added strain on the public training system.

The decline in labor force participation with age is also highest among less-educated workers. Part of the reason is that their limited skills leave them with only low-wage options. Another explanation is that their Old Age Insurance under social security provides a higher-than-average replacement rate. Still, concern for the plight of this group causes many people to oppose

Table 2: Participation in Job-Related Education and Training and Professional Training by Age Group in the U.S. and Other Selected Countries

	Percent Participating in job-related continuing education and training		**Percent Participating in professional and career upgrading training**	
	Total	Paid by the employer	Total	Paid by the employer
United States				
All Workers	44.5	31.7	29.7	24.1
15- to 24-year-olds	42.4	11.7	9.4	6.2
25- to 44-year-olds	46.4	36.2	32.5	26.9
45- to 54-year-olds	45.7	36.2	35.8	29.4
55- to 64-year-olds	36.8	25.8	28.4	21.4
United Kingdom				
All Workers	50.2	39.2	15.4	12.9
15- to 24-year-olds	55.6	30.3	14.4	12.1
25- to 44-year-olds	55.2	46.3	18.1	15.0
45- to 54-year-olds	42.8	35.3	13.1	11.1
55- to 64-year-olds	32.1	27.2	8.6	7.4
Switzerland				
All Workers	31.9	20.1	26.0	16.8
15- to 24-year-olds	34.5	23.5	21.0	12.6
25- to 44-year-olds	33.9	20.9	28.7	17.8
45- to 54-year-olds	29.7	18.9	25.6	18.8
55- to 64-year-olds	25.2	15.9	20.7	12.9
10-Country Average				
All Workers	34.2	22.7	20.6	14.9
15- to 24-year-olds	38.8	16.0	15.2	9.1
25- to 44-year-olds	35.6	25.7	22.8	16.8
45- to 54-year-olds	30.8	22.6	21.1	15.8
55- to 64-year-olds	23.3	17.4	15.4	11.5

Source: Employment Outlook: June 1998, OECD, 1998, p.140, based on International Literacy Survey.

raising the retirement age. Thus, effective training for the less educated could have a large payoff, first because of the enhanced capabilities of older trainees and second because their improved job

accessibility may allay concerns over changing incentives under social security for all older workers.

Public training programs such as JTPA are likely to face rising shares of older workers among eligibles seeking services. The majority of older workers calling on JTPA services have utilized the displaced worker program and not the standard training programs. However, the share of young people is growing as well, especially among groups traditionally eligible for programs for the disadvantaged. Thus, JTPA will simultaneously see increases in the job displacement problems of older workers and in the initial training requirements for young workers.

From the standpoint of employers, there are advantages and disadvantages in hiring older workers. Their health care costs are disproportionately high and, since many will have more seniority than younger workers, they may receive higher pay and qualify for longer vacations. On the other hand, older workers are less likely to move and less likely to have an accident at work (though it takes longer for them to recover).

Third, a declining share of workers will have very young children. Women in the 25-44 age category will make up 21.1 percent of the workforce of 2006, down from 24.2 percent in 1996. These figures incorporate an expected rise in the labor force participation rates of 25- to 44-year-old women from 76 percent to 79 percent. On the other hand, more women and men will have to care for elderly parents.

Fourth, the workforce will increasingly become more heterogeneous by educational status and by gender. The proportions with BA degrees are especially variable by ethnic status among younger workers. As of March, 1997, a striking 51 percent of Asian 25- to 29-year-olds had earned a BA, compared to 29 percent of whites, 14 percent of blacks, and 11 percent of Hispanics. Except for

Hispanics, rates of high school completion were similar across groups, at about 85 percent. Another recent phenomenon is the emerging gender differences among black and Hispanic workers. Among 25- to 29-year-olds in the labor force, 20 percent of black women but only 13 percent of black men had earned BA degrees; among Hispanics, 17 percent of women but only 9 percent of men had graduated college. These educational patterns are indicative of broader trends indicating that minority worker problems are becoming more concentrated among men.

II. Trends in Work and Family, Health Insurance, Pensions

The complications embedded in efforts to combine work and family are not a new phenomenon. Throughout the first half of the century, it was mainly low-income and/or black women who faced the biggest struggle balancing work and family. These women often remained in the labor force after the birth of a child because they could not afford to quit working. Women married to middle- and upper-income men typically did not work for pay while their children were young, but waited to reenter the labor force at least until their children were school aged (Klerman and Leibowitz, 1994). Few children lived in single-parent families.

Since the 1960s, several demographic trends have changed the structure of the American family and the way that parents balance work and family responsibilities. Women married to men at all income levels have increased rapidly their participation in the labor force, with the most rapid growth among college-educated women married to relatively high-income men. The majority of women now return to paid work within a year of the birth of a child. The rising divorce rate and the growing prevalence of children born to unmarried mothers means that many children live in single-parent families.

Working parents, especially working mothers, report a great deal more stress in their lives than other workers. Journalists and academics argue that the very structure of the workplace contributes to that stress; few jobs allow workers the flexibility of dealing with family responsibilities during normal business hours. Some employers have adopted policies to make the workplace more "family-friendly," including flex-time, job sharing, generous parental leave following the birth of a child, and on-site child care. Evidence on the success of these programs in reducing stress is mixed. A rising share of workers are choosing self-employment, consulting, temporary work, or other forms of contingent work, which give them more flexibility in balancing work and family responsibilities. Moreover, an increasing share of men and women are providing assistance to elderly relatives. Women provide the majority of eldercare, and many providing eldercare are part of the so-called "sandwich generation," caring for children and elderly relatives at the same time.

Most Workers Do Not Have Children

In order to put a discussion of work and family in perspective, it is important to note that most workers presently do not live in households with their own children under 18. Although most women do have children at some point in their lives, only 40 percent of the female labor force and 36.2 of the male labor force live in a household with their own children under age 18 (see Tables 3 and 4). In addition, a relatively small share of workers live with their own small children. 16.4 percent of female workers and 16.5 percent of male workers live with at least one

Table 3: Percent of Women in the Labor Force in Various Types of Families: Second Quarter of 1998

Living Arrangements	Percent of female labor force	Percent of female full-time workers
Own children under age 18	40.0	39.6
Own children under age 6	16.4	15.1
Own children under age 3	9.1	8.1
Married, spouse present with children under age 18	28.1	27.2
Divorced, separated, or widowed and own children under 18	7.2	8.1
Never married and own children under 18	4.7	4.3

Source: U.S. Bureau of Labor Statistics, unpublished tabulations.

Table 4: Percent of Men in the Labor Force in Various Types of Families: Second Quarter of 1998

Living Arrangements	Percent of male labor force	Percent of male full-time workers
Own children under age 18	36.2	38.6
Own children under age 6	16.5	17.5
Own children under age 3	9.8	10.4
Married, spouse present with children under age 18	34.3	36.6
Divorced, separated, or widowed and own children under 18	1.9	2.0
Never married and own children under 18	1.0	0.99

Source: U.S. Bureau of Labor Statistics, unpublished tabulations.

child under age six, and 9.1 percent of female workers and 9.8 percent of male workers live with at least one child under age three.

Tables 3 and 4 also show that single parents comprise a relatively small share of the labor force; 7.2 percent of working women were ever married (divorced, widowed, or separated) and had children under 18, and 4.7 percent of working women were never married and had children under 18. For men, single parenthood was much less common. 1.9 percent of male workers were ever married with children under 18, and 1 percent were never married with children under 18.

Growth in Married Women's Labor Force Participation

Part of the growing concern over balancing work and families is driven by the growth of dual-career couples with children. Women married to high-wage, college-educated men have witnessed the largest increase in labor force participation since the late 1960s. The labor force participation rate of the wives of men in the highest wage quintile increased 16.6 percent between 1969 and 1989. The wives of men in the middle wage quintile increased their labor force participation rate by 11.7 percent, and wives of men in the bottom wage quintile increased their labor force participation rate by 6.9 percent (Coleman and Pencavel, 1993b).

Women's labor force participation has grown in part because women are taking less time out of the labor force after the birth of a child. Since the 1970s, mothers of infants have rapidly increased their labor force participation. By 1995, 55 percent of women who had had a child in the last year were in the labor force, almost double the 1976 participation rate of 31 percent (U.S. Census Bureau, 1998). Today, mothers face the tradeoff between work and family even when their children are infants. In the 1970s and 1980s, most women did not return to the labor market until their children were in preschool;

in the 1950s and 1960s, most mothers waited until their children reached elementary school to return to the labor force (Klerman and Leibowitz, 1994). In addition, the hours of work for employed women with children under the age of six have grown; the average employed white woman with at least one child under the age of six worked 1,487 hours in 1970 and 1,638 hours in 1988. College-educated women accounted for nearly all of the increase in the annual hours of work for mothers of young children conditional on employment (Coleman and Pencavel, 1993b).

Working mothers with infants face difficulties that working mothers of older children do not. First, breast feeding has become more prevalent, but few workplaces provide facilities for breast pumping and storage of breast milk. Second, infant care is expensive and difficult to find. Third, the sleep deprivation that comes with having a baby can make work more difficult.

Growth in Single-Parent Families and Single Mothers' Labor Force Participation

Single parents face special challenges in balancing work and family. Between 1970 and 1997, single-female-headed families increased from 17 percent to 27 percent of all families with children, and single-father-headed families increased from 1 to 5 percent of families (U.S. Census Bureau, 1998).

This section will address issues related to single mothers, since they are the vast majority of single-parent families. Women can become single mothers because of separation, divorce, or because they were unmarried when they gave birth to a child. The divorce rate more than doubled between 1966 and 1977 (from 10 to 21 divorces per 1,000 married women per year) and has remained relatively stable since. Over 40 percent of all existing marriages are expected to end in divorce (National Center for Health Statistics, 1998). Non-marital births as a percent of all births have grown quite rapidly

since the 1960s, rising from 5.3 percent in 1960 to 30.1 percent in 1992. The groups that experienced the largest increases in non-marital birth rates were 15- to 24-year-old women and black women.

Since 1992, the labor force participation rate of never-married mothers has grown enormously. Historically, never-married mothers participated in the labor force at low levels and often relied on AFDC. But since 1996, approximately 1 million never-married mothers have left the welfare rolls and entered the labor market. The labor force participation rate of never-married mothers rose from 53 percent in 1992 to 60 percent in 1996 and reached 70 percent in the second quarter of 1998. These increases in labor force participation were due to the combination of federal welfare reform legislation, which established time limits for the receipt of benefits for the vast majority of recipients, and a booming labor market (Bishop, 1998).

Historically, divorced and separated mothers have participated in the labor market at much higher rates than mothers with a spouse present and never-married mothers. Recently, the gap has narrowed. As of the second quarter of 1998, 77 percent of divorced and separated mothers were in the labor force, compared with 70 percent of mothers with spouse present and 70 percent of never-married mothers.

Unmarried mothers living in poverty often face particular difficulties managing their work and family responsibilities. Because of the lack of affordable child care, these women often must place their children in poor-quality care. States do provide some subsidized child care for former TANF recipients and other poor or near-poor women, but the programs in several large states have long waiting lists and cannot provide subsidies to all who apply (Long et al., 1998). In addition, women who rely on public transportation often face long and logistically difficult trips getting from home to child care and work.

Are Americans Working Longer Hours Than They Did in the Past?

One debate about work and family issues concerns whether work hours have grown in recent decades. Juliet Schor, in her 1991 best-selling book, *The Overworked American*, declared that workers were working longer hours than they had in the past, and that long work hours were robbing workers of satisfying lives. In 1997, Robinson and Godbey argued that Americans were actually working less than they did in the 1960s. Because individuals were also doing less housework and childcare, Robinson and Godbey found a net increase in leisure.

The increase in leisure that Robinson and Godbey describe is due to the rise in early retirement for workers in their 50s, and the delay of childbearing and marriage for workers in their 20s and 30s. The vast majority of married couples with children are spending more total time in paid work than they did in 1979 or 1989. Husbands worked an average of 2,096 hours in 1979 and 2,159 hours in 1994. Wives worked an average of 581 hours in 1979 and 1,168 hours in 1994 (Economic Policy Institute, 1998).

Table 5 shows the work hours of married men and women according to the percentile of work hours of the husband. With the exception of husbands in the lowest and third fifth of work hours, husbands worked more annual hours in 1994 than they did in 1979. Men in the top 5 percent of work hours witnessed the largest increase in work hours, from 2,490 in 1979 to 2,615 in 1994. With the exception of the wives of men in the top 5 percent of work hours, wives worked substantially more hours in 1994 than they did in 1979. The husbands in the top of the work hours distribution are typically college-educated men married to college-educated women (Coleman and Pencavel, 1993a).

Table 5: Annual Work Hours of Husbands and Wives with at Least One Child

	Percentile of Husbands' Work Hours						
	Bottom fifth	Second fifth	Middle fifth	Fourth fifth	80-95 percentile	Top 5 percent	Entire sample
	Husbands' Average Annual Work Hours						
1979	1,678	2,074	2,155	2,226	2,300	2,490	2,096
1989	1,706	2,138	2,212	2,274	2,364	2,554	2,148
1994	1,607	2,145	2,257	2,340	2,387	2,615	2,159
	Wives' Average Annual Work Hours						
1979	478	733	876	1,086	1,164	828	581
1989	653	1,009	1,190	1,332	1,407	1,146	1,105
1994	634	1,062	1,290	1,419	1,605	929	1,168

Source: Economic Policy Institute DataZone, 1998. Sample includes married couples with at least one child and one spouse between the ages of 25 and 54. Families with zero earnings were excluded.

Therefore, it is college-educated dual-career couples who are facing the biggest decline in nonwork hours.

Husbands in the lowest fifth of annual work hours actually experienced a decline in work hours, from 1,678 working in 1979 to 1,607 working in 1994. Men in the bottom of the work hours distribution are likely low-skilled men, who have decreased their labor force participation rates and their work hours in response to the marked decline in their wages (Juhn and Murphy, 1997).

When paid work and unpaid work are added together, on average, men and women spend equal amounts of time on work. Men spend more hours working for pay than women do, and women spend more time doing housework and child care (Barnett and Shen, 1997).

The struggle to juggle work and family likely takes a toll on the emotional health of parents—particularly mothers. In a recent survey of workers, 38 percent of mothers and 19 percent of fathers said they felt nervous and stressed out often or very often. Similarly, 48 percent of mothers and 35 percent of fathers responded that they were often or very often tired when getting up in the morning. Thirty percent of mothers and 23 percent of fathers registered the same responses when asked if they felt emotionally drained from their work (Galinsky et al., 1998).

Shortage of Quality Child Care

As women's labor force participation has grown, the demand for child care has also grown. A recent study found that 56 percent of mothers with children under age five said that finding affordable child care was a serious problem for them (U.S. Department of Labor Women's Bureau, 1998). The shortage of quality is particularly acute for infants, many of whom are placed in care that is physically dangerous to them. Many parents are forced to miss work when a child becomes sick because they lack backup care.

There is also a severe shortage of child care available on the evenings and weekends. Nearly one-fifth of workers worked nonstandard hours in 1991, and women comprised one-third of those working nonstandard shifts. Service sector jobs requiring these nonstandard work hours are among the fastest growing (U.S. Department of Labor Women's Bureau, 1998).

Recent research has shown that poor-quality child care could ultimately take a toll on children. Research on the brain development of children shows that the first three years of life are key in developing a child's full intellectual and emotional potential. Poor-quality care reduces a child's future cognitive abilities and emotional health (Galinsky et al., 1998).

Eldercare

The projected growth in the share of the population older than age 65 means that a growing share of adults will spend time caring for their relatives. Americans are now living longer lives than ever before, but many of their later years are spent in poor health, with the need of assistance from family, friends, or health care workers. Many working adults must also care for elderly relatives. In 1997, one-quarter of workers had provided special assistance to someone 65 or older within the last year, while 13 percent had done so in the last month. One-fifth of workers had cared for both elderly relatives and children within the last year. Those who do care for elderly relatives spend an average of 11 hours per week doing so. Women do more eldercare than men, and studies show that women often reduce their work hours in response to taking on the responsibility of eldercare.

Can Firms Help Their Employees Balance Work and Family Responsibilities?

Many firms offer policies that aim to help workers balance work and family responsibilities. In a 1992 survey, 90 percent of workers said they had access to family sick leave, 57 percent have access to job sharing, 47 percent can take extended lunch breaks, 44 percent have the ability to work more hours one day and fewer the next day, 29 percent can choose flextime, and 24 percent have the ability to work at home on a regular basis (Galinsky et al., 1996). While few small firms offer assistance with child care and eldercare, many Fortune 1000 firms do; 55 percent of Fortune 1000 firms offer child care resources and referral, 21 percent offer eldercare resources and referral, and 13 percent offer on-site child care.

Some family-friendly policies, such as flexible time, parental leave, and dependent care assistance, have little impact on parental stress (Galinsky et al., 1998). The take-up rates of policies that

reduce work hours, such as work sharing and flextime, tend to be quite low because workers fear that reducing their work hours will hurt their careers. Anecdotal evidence indicates that workers who opt for flexible or reduced work hours often are promoted at much lower rates than their colleagues (National Public Radio, 1998). The programs that have the highest take-up rates are those which enable employees to increase their work hours: on-site child care, child and elder care referral services, and emergency backup child care services (Stone, 1997).

The job attributes that were most correlated with low parental stress were not policies explicitly targeted toward families, but attributes that improve overall job satisfaction. Employed parents experienced the least conflict between their work and family responsibilities when they were in jobs that had greater autonomy, that were less demanding and hectic, and that offered greater job security (Galinsky et al., 1998).

Anecdotal evidence indicates that some employers are finding that workers that lead balanced lives are more productive. Those firms are aiming to improve employee satisfaction by increasing communication between workers and bosses, improving scheduling flexibility, and recognizing workers' needs to balance work and family (*Wall Street Journal*, July 1998). Such policies are not aimed at a small subset of workers who choose flextime, but are transforming their entire work culture. Xerox reported a 10 percent productivity increase when implementing flexible scheduling and Johnson & Johnson reported a 50 percent decline in absenteeism among employees who used flexible work options and family leave policies (Price Waterhouse, 1998).

Several large consulting and accounting firms are using more flexible work scheduling as a method of recruiting and retaining workers in a tight labor market (National Public Radio, 1998; Price

Waterhouse, 1998). At the same time, consulting and accounting firms are trying to change their workaholic culture to make flexible scheduling more feasible.

Two policies, flextime and the four-day compressed work week, appear to be effective in increasing the amount of time parents spend with children. Some researchers have also argued that increasing the amount of paid paternal leave would increase fathers' involvement with their children. The liberality of companies' paternity leave policies is a predictor of the length of parental leave. Fathers' involvement with older children is positively correlated with the amount of time they spent with their children as infants. Researchers argue that if fathers spend more time with their newly born children, they are more likely to bond with their children, and spend more time with children as they grow older. Many companies do not offer paid paternity leave, although the 1996 Federal Medical and Family Leave Act does require all firms with more than 50 employees to offer two weeks of unpaid maternity or paternity leave. The vast majority (75 to 91 percent) of fathers take time off following the birth of a child, but the average length of leave averages only five days.

Because relatively few jobs provide the autonomy and flexibility that allow workers to balance work and family effectively, some workers, especially women, have likely turned to contingent employment and self-employment. Contingent workers include workers who are employed by temporary agencies and other workers whose implicit or explicit contracts with their employers define their jobs as temporary. Women who are self-employed or contingent workers typically do not work full-time full-year, but vary their schedule over the year and over the week to meet family demands. The majority of women who are self-employed, on-call, or independent contractors enter into these situations voluntarily, and many state that they work in such arrangements for family reasons (Economic

Policy Institute, 1997). The female self-employment rate has grown from 4.1 percent in 1990 to 6.7 percent in 1994 (Devine, 1994). Nearly 3 percent of the female workforce is in temporary, on-call, or contract company jobs (Economic Policy Institute, 1997).

III. Trends in Employer-Provided Health and Pension Benefits and Families

The Decline in Employer-Provided Health Insurance

Employer-provided health insurance coverage declined sharply in the last decade. In 1988, 67 percent of the population had such coverage; in 1993, 61 percent did. The rate of coverage declined for every income group, with the sharpest decline (7 percentage points) for individuals with incomes between 100 and 200 percent of poverty and the smallest decline among individuals with incomes below the poverty line (Blumberg and Liska, 1996).

Most of the decline in employer-provided health insurance coverage is due to declining coverage for dependents, with the largest decline for children. About 18 percent of workers have no employer-provided health coverage, and an additional 5 percent have health insurance coverage for themselves but not for their families. Moreover, 30 percent of firms now require individuals to share the cost of family health insurance coverage, and many workers opt not to cover dependents when the price is too high. About 20 percent of firms also require individuals to share in the cost of their coverage, but employee costs for their own coverage are typically modest compared to the cost of family coverage (General Accounting Office, 1997a, 1997b).

For poor women and children, Medicaid has made up for some of the decline in private health insurance coverage. Since the late 1980s, the Medicaid program has been expanded to cover poor

pregnant women and children who are not recipients of AFDC. As a result, between 1988 and 1993, Medicaid coverage expanded from 8.5 percent to 12.4 percent of the nonelderly population. Because of the Medicaid expansions, poor children are much more likely to be insured than poor adults (Blumberg and Liska, 1996). Some analysts have argued that the expansion of Medicaid eligibility actually contributed to the decline in employer-provided health coverage (Cutler and Gruber, 1996). But Medicaid only fills the private insurance gap for about 50 percent of individuals below the poverty line.

How will the decline in employer-provided health insurance affect the health status of the population? Individuals who are uninsured have much less access to health care than those who are insured, even adjusting for income and health status. Uninsured individuals are likely to delay or forgo medical care, even in the case of serious medical problems. They tend not to receive preventative care, so health problems are often much worse when they finally visit the doctor. In addition, when persons without health insurance coverage do receive care, doctors tend to perform fewer procedures. The uninsured receive better care in communities with public hospitals and clinics, as these institutions provide free medical care.

Does the lack of access to health care result in a decline in the health of uninsured individuals? A lack of health insurance coverage is correlated with poor health status and a decline in life expectancy. However, it is difficult to identify a causal relationship because health insurance coverage is endogenous; persons in poor health are less likely than healthy workers to find good jobs that provide health insurance coverage.

For many workers, the absence of health insurance coverage is only temporary. The median spell without health insurance is seven months, and 48 percent of spells of non-insurance end within five months. A significant minority, 19 percent, last beyond two years (Blumberg and Liska, 1996). An interesting unanswered research question is whether short lapses in health insurance coverage affect access to health care as much as long spells.

The Change in the Pension System

Over the last 20 years, the fraction of workers covered by defined contribution (DC) pension plans has increased rapidly, while the fraction covered by defined benefit (DB) plans has declined. In 1975, 13 percent of workers with pensions had DC plans as their primary pension, compared to 33 percent in 1988 and 42 percent in 1993 (Samwick and Skinner, 1998).

Some analysts are concerned that the switch from DB to DC plans will reduce workers' retirement savings. Under DC plans, workers bear much of the responsibility for accumulating adequate assets for retirement for three reasons. First, contributions to DC plans are often voluntary. In a sample of workers from several large firms, only about 70 percent chose to participate in voluntary DC plans. On average, workers contribute about 6 percent of their salaries (Employee Benefit Research Institute, 1995).

Second, workers can control the allocation of assets in their DC portfolio. Many workers choose far too conservative investments, which dramatically reduce the value of their assets at retirement. About one-sixth of workers invest none of their portfolio in equities (Samwick and Skinner, 1998), and many of these very conservative investors are relatively young. In one dimension, workers'

investment strategies are sensible: the percent of assets in equities declines as workers get closer to retirement (Employee Benefit Research Institute, 1995).

Third, workers can choose to consume, rather that reinvest, the DC lump sum distributions they receive when they leave a job. Only half of those who receive lump sum distributions reinvest all or part of it into an IRA or their new employers' retirement plan (Employee Benefit Research Institute, 1996b).

The lump sum distributions of DC plans have the advantage of making the pensions portable. If workers choose to reinvest their lump sum distribution, they suffer no penalty in retirement income from changing jobs. When workers change jobs, they suffer a substantial decline in the expected value of their DB plan income.

A recent paper (Samwick and Skinner, 1998) examined the retirement income yield for average pension recipients under representative DB and DC plans. The Samwick-Skinner model takes account of the reality that many workers will consume the lump sum distributions from DC plans when they change jobs and that many workers will continue to be conservative in their portfolio choice. Still, they find, somewhat surprisingly, that the average worker will have a higher retirement income under a DC plan than under a DB plan. However, workers at the lowest 10 percent of the retirement income distribution are projected to earn higher retirement income under DB than under DC plans. Although many DC plans do not adequately provide for retirement, neither did many DB plans in the past.

IV. Technology and Work Organization

Business investment in computers has grown very rapidly over the last 25 years. In 1973, business computer purchases accounted for .005 percent of GDP, and in 1996, they accounted for 3.1

percent of GDP. Computers now comprise about one-fifth of businesses' new capital investment. This investment in technology has meant that one-half of American workers are likely to use a computer in their work, compared with one-fourth in 1987 (Madrick, 1998).

On average, technology has increased the demand for workers who have good math, communication, and teamwork skills. However, the impact of technology has not been uniform; it varies by occupation and industry and among firms within the same industry. Technology increases the skill demands of many manufacturing jobs, but may deskill some clerical work. Industries vary in their investment in information technology. Evidence shows that industries that invest the most in technology have the highest demand for skilled workers, and pay a higher wage premium to workers than other industries. Manufacturing industries that invest the most in technology have a higher demand for non-production workers (managers, secretaries, and janitors) relative to production workers (line workers).

The impact of technology varies considerably among firms within the same industry because firms differ widely in their organizational responses to technology. Technology is not simply an input into the production function. It changes the production function by affecting work organization and expanding the types of possible outputs. In the long run, a firm's type of product, its work organization, and its level of investment in technology are complementary. Although firms choose a myriad of organizational responses to technology, it is heuristically useful to think of two types of strategies, customization and more traditional work practices (Piore, 1998). With customization, firms produce products in which quality and/or control of the production product are key. They invest heavily in information technology and employ a cluster of work organization practices that both expand workers' decisionmaking power and flexibility and compensate workers for their performance. Firms that follow

the customization strategy require the most skills from their workers and also experience the largest productivity gains from adopting computers.

Firms that choose more traditional work organization produce products that are less customized and they invest less in technology. Such firms do not fully transform their work organization in response to technology; rather, their method of work organization is closer to mass production. Firms that follow the second strategy do not demand as many skills from their workers as firms that follow customization and do not experience as large a boost in productivity from adopting new technology. They may adopt some new workplace organization practices, but do not fully transform their workplace. The choice of strategies varies widely among firms within the same industry.

The future impact of technology on the labor force will depend on whether more firms adopt the customization strategy in response to new technologies. Competitive pressures may push more firms to change their workplace organizations. However, many firms will find it difficult to transform themselves because of the resistance of workers, lower- to mid-level managers, and/or labor union leaders.

Recent Changes in Work Organization

Accompanying the growth in computer investment has been a movement away from the Ford/Taylor model of mass production, once a major form of work organization in the U.S. Under the mass production model, workers performed a narrow set of tasks and had little incentive or need to understand how their work fit into the larger picture. Monitoring quality was the responsibility of supervisors.

No single form of work organization has emerged as dominant, but most firms have adopted flexible forms of production. Workers often perform a broad range of tasks, thereby gaining the ability

to respond quickly to changes in the production process and assuming some responsibility for the quality of the product (Piore, 1998).

Information technology was not the only factor contributing to movement away from the mass production model. During the 1970s, several changes in the macroeconomic environment led to increased levels of uncertainty and volatility in the demand for products. The macroeconomic changes included the opening of the economy to trade and deregulation. Additionally, the change from fixed to fluctuating exchange rates led to wide swings in the value of the dollar. The 1970s also witnessed more rapid shifts in consumer demand, which led to quicker product cycles, more products, and quicker supplier responses to changes in consumer tastes (Piore, 1998). Consumer demand also became more fragmented; the number of new food and household products introduced each year has increased 15- or 20-fold since 1970.

Heuristically, it is again useful to think of two types of strategies that were responses to the changing economic environment: customization and more traditional work arrangements. The nomenclature is based on Piore's (1998) analysis of the case study literature on manufacturing firms; Bresnahan, Brynjolfsson, and Hitt (1998); and quantitative analysis of data from 303 Fortune 1000 firms in both manufacturing and services.

First, firms that chose the strategy of customization responded to rapid changes in consumer demand by producing products in which service was an important component that could be easily customized by controlling the production process. These firms have been heavy investors in information technology and have transformed their work organization practices. They organize work into self-directed teams, which gives workers more decisionmaking authority (particularly over pace and method

of work). They also rotate workers among jobs, improving their understanding of the production process. In addition, these firms implement incentive systems to reward and encourage performance. Such firms also require workers to perform highly skilled tasks, such as reprogramming equipment for a change in the product line, so firms typically invest heavily in worker training and screening (Piore, 1998). According to one estimate, nearly 40 percent of firms follow the customization model (Osterman, 1994). The positive relationship between information technology and new work organization practices cannot be explained by industry type alone; the relationship exists both within and between industries (Bresnahan, Brynjolfsson, and Hitt, 1998).

Second, some firms choose to produce products in which service and producer control are not as important. These firms tend to use fairly traditional forms of work organization. Most firms have implemented at least one but not all of the nontraditional human resource practices that exist in the customization strategy (Osterman, 1994). Appelbaum and Batt (1994) find that the fraction of Fortune 100 firms with at least one employee involvement practice rose from 70 percent in 1987 to 85 percent in 1992.

Firms that follow the customization strategy experience greater productivity gains from the adoption of information technology than other firms—even firms within their own industry (Beede and Young, 1996; Brynjolfsson and Hitt, 1998). The customization strategy also results in large improvements in productivity when new organization practices deeply penetrate the firm (Cappelli et al., 1998; Ichniowski et al. 1997). However, firms that implement only some of the new work organization practices experience only marginal improvements in productivity.

Will More Firms Adapt Their Work Organization to Fully Exploit Technology?

Technology's future impact on the demand for skills and on productivity will likely depend on how many additional firms adopt customization as a form of work organization. David (1990) argues that a new technology can take decades to have its full impact on productivity because it takes some time for firms to adopt work organization to the technology. Such was the case with the adoption of electricity in the early twentieth century.

Although competitive pressures may push additional firms to adopt customization, many firms may find it difficult to reform their work organization. Piecemeal changes to work organization are easier for firms with a tradition of mass production to implement than customization (Piore, 1998). Management and union leaders may oppose such changes because they threaten their power and workers may have difficulty conforming to new modes of work organizations because old work norms have become ingrained (Cappelli et al., 1998; Bresnahan, Brynjolfsson, and Hitt, 1998). Also, decades of animosity between management and labor may prevent the cooperation necessary to reform work. Because they lack an institutional memory, greenfield (newly built) plants are more likely to adopt customization than other plants (Ichniowski et al., 1995).

Does Technology Change the Demand for and Returns to Skills?

The growth in information technology and changes in work organization have likely contributed to the rising demand for and returns to higher-order cognitive skills. Anecdotal evidence shows that new technologies and workplace practices often require workers to have good writing and verbal skills, good math skills, and good problem-solving skills. In addition, given the increased autonomy and responsibilities in many environments, there is evidence that so-called "soft skills"—motivation, work

habits, and so on—have become more important. Although there has been an economy-wide increase in the demand for skills, some jobs may have been deskilled by the changes in work organization and growth in information technology. In particular, some clerical work has become less skilled now that office technology, such as word processing software, can perform many of the most skilled clerical tasks.

Because of other sweeping economy-wide changes that were occurring at the same time as technological change and the change in work organization (including globalization, deregulation, and the decline of unions), it is difficult to empirically identify the magnitude of technology's effect on the rising skill premium.

Technology has played a role in the rising demand for and return to skill. Three papers (Bound, Berman, and Griliches, 1994; Allen, 1997; Haskel and Slaughter, 1998) find that industries that invest the most in technology have the highest demand for skilled workers and pay the highest relative wages to skilled workers. When the three studies are taken together, the result is robust across the manufacturing and service sectors, across different measures of technology, and across different proxies for unskilled and skilled workers.

The shortcoming of the industry-level studies is that they cannot say whether the adoption of computers *per se* increases the demand for skilled workers, or whether the adoption of computers is simply a proxy for other organizational changes in the firm. Recent evidence from worker-level data suggests that it is not the use of the computer *per se* that raises the relative earnings of skilled workers; the use of a computer is simply a proxy for whether the individual sits and thinks at his or her job (DiNardo and Pischke, 1997).

Mishel and Bernstein (1997) argue that technological change cannot explain the rising demand for and returns to skill. They believe that in order for the relationship to hold true, technological change should have accelerated between the 1980s and the 1970s, because the wage gap between skilled and unskilled workers grew more quickly during the 1980s than during the 1970s. They find no evidence of an acceleration in investment in technology in the 1980s. The discrepancy in timing between the introduction of technology and wage inequality may be explained by the fact that the new work organization practices that exploited technology became more widely adopted in the 1980s. Bernard and Jensen (1994) also argue that technological change cannot account for much of wage inequality; they show that the within-industry changes in the employment shares and wage shares of skilled workers were larger than the between-industry changes. They assume that all firms within the same industry would have similar technologies, which has been shown to be empirically false.

Many papers addressing the issue of skill-biased technical change have simply assumed the change was the residual that could not be explained by other factors, such as changes in demographics, changes in the composition of industries, or trade.

Given that whether and how firms adopt technology depends on their response to changes in the external environment (e.g., trade, deregulation), a research program that attempts to allocate contributions to wage inequality may nevertheless fail to achieve a consensus. For policy purposes it is more important to first determine what skills are valued in the economy, then to go about training workers in those particular skills.

V. Adapting to Tight Labor Markets

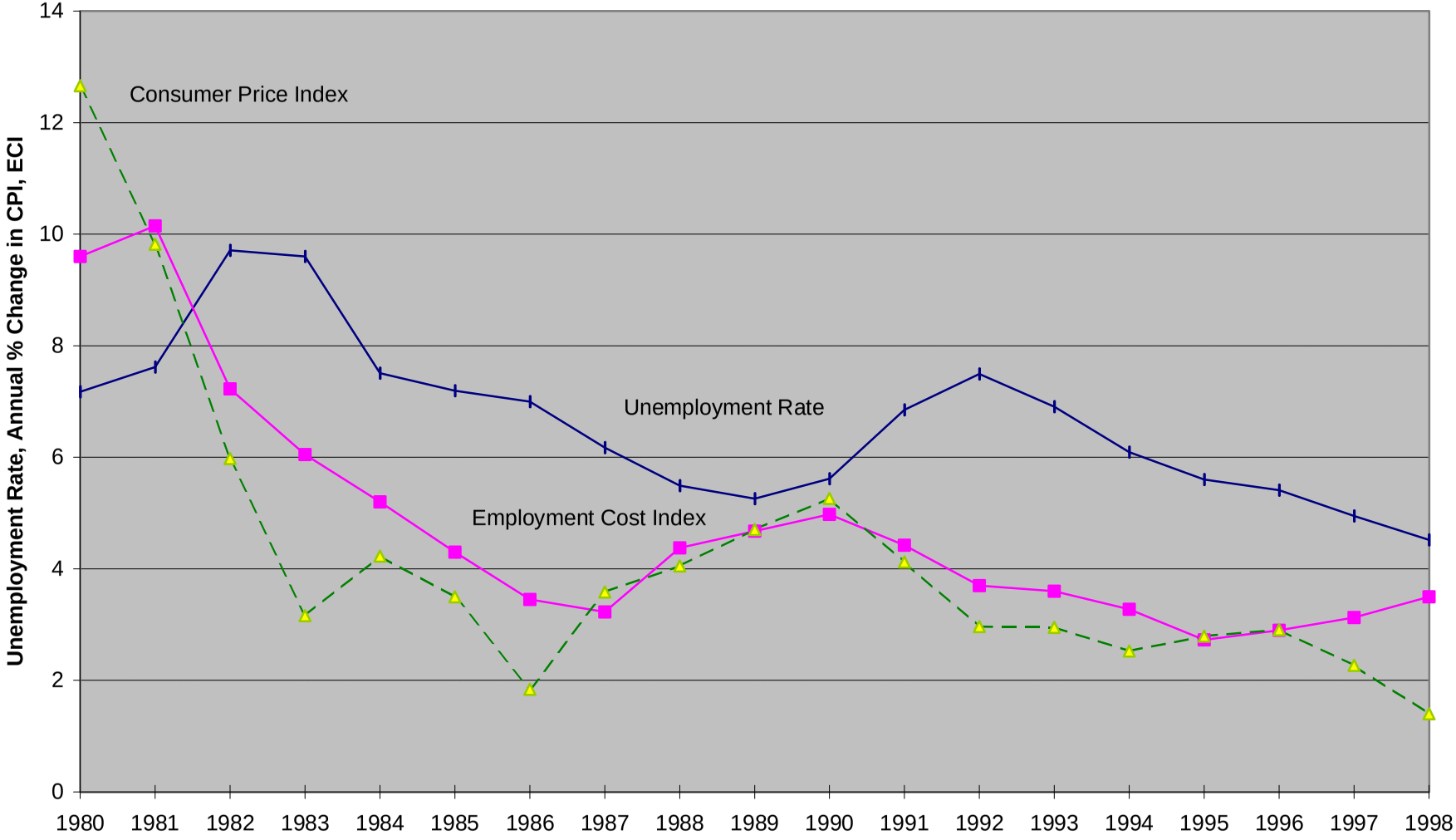
With the U.S. economy reaching the lowest unemployment rates in 30 years and the employed share of the adult population at an all-time high, today's primary concerns are labor shortages and inflationary pressures resulting from tight labor markets. According to many predictions, the 1995-1996 unemployment rates of 5.5 percent should have already led to excessive wage growth. In a recent estimate, Akerlof, Dickens, and Perry (1996) concluded that the rate of unemployment consistent with no increases in the inflation rate was in the 5.5-6.0 percent range. The U.S. experience of 1997 and 1998 cast doubt on these and similar projections. Even after reaching 4.5 percent unemployment rates, the U.S. economy has yet to experience inflationary wage pressures.

How have these pressures been averted? Are they about to arise shortly? How are employers coping with the tight job markets? Is rapid wage growth taking place in the lowest unemployment rate areas? To what extent have new workers been drawn into the job market to mitigate shortages and wage pressures? What mechanisms other than wage increases are employers using to recruit and retain workers? Are employers turning to low-turnover strategies with job ladders and extensive training? To what extent are employers able to lower their formal job qualifications in response to a shortage of workers?

The National Trends

The impact of the 1990s expansion on the labor market is unusual in two respects. First, the absence of any observable wage pressure in the context of a 4.5 percent unemployment rate is unexpected. Figure 1 graphs the trend in unemployment with the trend in the Employment Cost Index (ECI), which best captures the potential inflationary pressures emerging from the labor market, and the Consumer Price Index (CPI). Note that from 1986 to 1989, when unemployment rates fell from 7.0

Figure 1: Relationship Between Unemployment Rate, Consumer Price Index (CPI), and Employment Cost Index (ECI): 1980-98



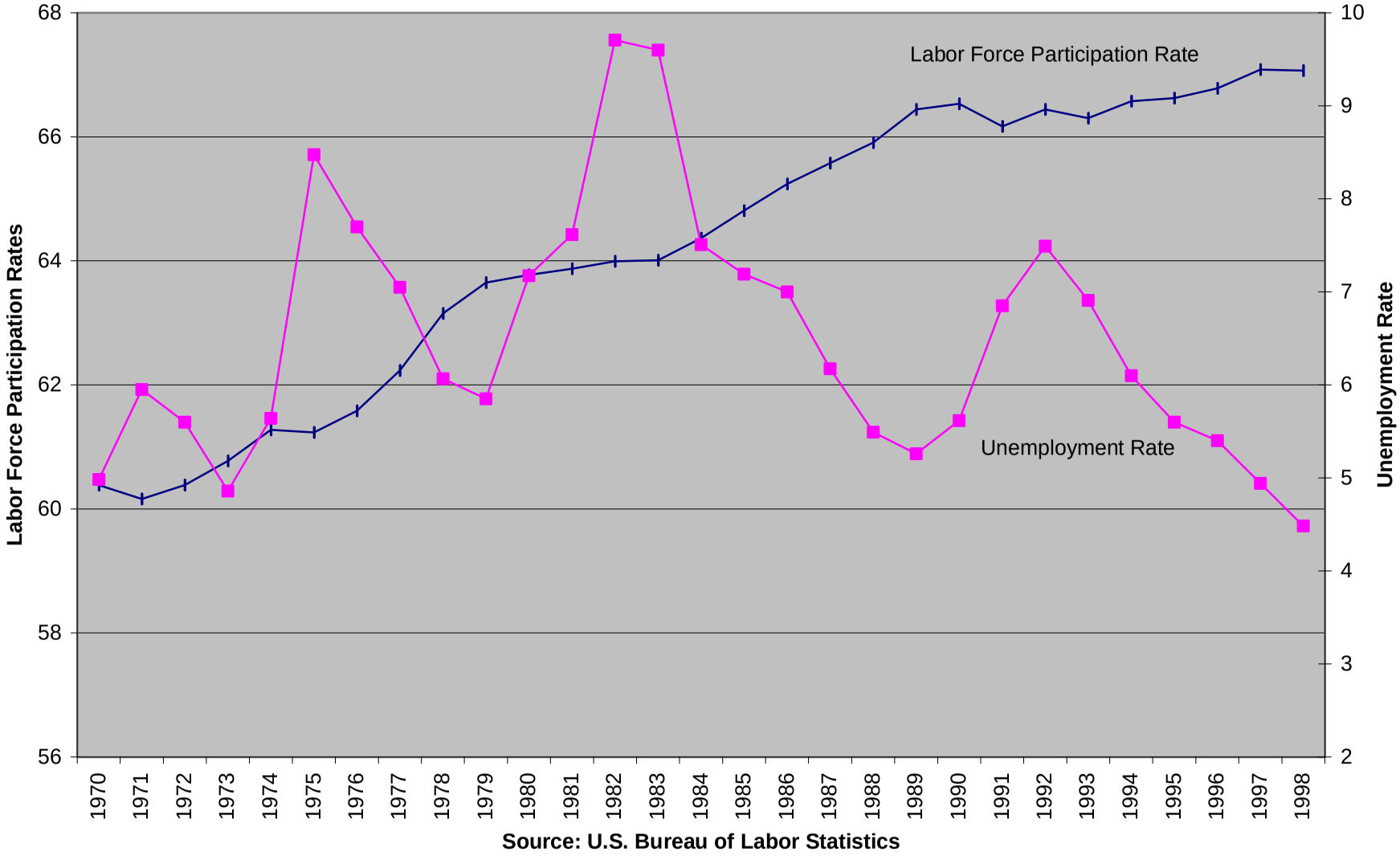
Source: U.S. Bureau of Labor Statistics.

percent to 5.3 percent, the ECI rose from a growth rate of 0.7 percent per year to 1.2 percent per year and the CPI doubled from 2 percent to 4 percent per year. Yet, in the 1990s, even larger reductions in the unemployment rate have induced no increase at all in the ECI or CPI. Second, the dramatic reduction in unemployment rates has stimulated only a modest impact on participation in the job market. Note that in Figure 2 falling unemployment in the late 1970s and mid- to late 1980s attracted many new workers into the market, raising participation rates 1.5 to 2 percentage points. In contrast, the decline in the 1990s to 4.5 percent unemployment rates has only led to a 0.7-point increase in participation. Thus, large increases in labor supply cannot explain the limited impact on wages and prices.

One feature of the current expansion that follows past patterns is that the expansion has raised employment most among the more disadvantaged groups. Table 6 reveals that the percentage-point gains in employment-population ratios and declines in unemployment rates were substantially higher among minorities, teenagers, and less-educated workers than among prime-age males. For example, the unemployment rate among black men, ages 20 and over, fell an extraordinary 7 percentage points, from almost 16 percent to about 9 percent. White men, ages 20 and over, also experienced sizable reductions in unemployment rates, but virtually no movement in employment. Similarly, the unemployment rate of college graduates declined from 3.2 percent in 1992 to 1.7 percent in 1998, while the employment-population ratio of college graduates remained constant at 78 percent.

With the economy apparently running out of skilled workers, since nearly all were already employed earlier in the business cycle, employers must turn to less-qualified workers to fill the new job. These pressures are good for the disadvantaged—firms are more willing to take inexperienced, less educated workers; to expand training; and to lower hiring standards. But shortages of high-skilled

Figure 2: Trends in Unemployment Rates and Labor Force Participation Rates: 1970-1998



Source: U.S. Bureau of Labor Statistics

Table 6: Gains in Employment-Population Ratios and Unemployment Rate Reductions by Age, Ethnicity, and Education: 1992-1998

	1992	1998 (1st Half)	Percentage Point Change	Percent Change
	Employment-Population Ratios			
White Males, 20+	73.0	74.7	1.7	2.3%
White Females, 20+	54.9	57.7	2.8	5.0%
Black Teens	22.8	29.6	6.8	26.1%
All Teens	41.7	45.3	3.6	8.3%
Black Males, 20+	64.3	67.3	3.0	4.6%
Black Females, 20+	53.6	59.4	5.8	10.3%
Hispanic Workers	59.1	63.6	4.5	7.3%
HS Dropout	36.5	39.6	3.1	8.2%
HS Graduate	61.8	62.7	0.9	1.4%
Some College	71.0	72.3	1.3	1.8%
BA or Higher Degree	78.8	78.9	0.1	0.1%
	Unemployment Rates			
White Males, 20+	6.4	3.2	-3.2	-69.3%
White Females, 20+	5.5	3.5	-2.0	-45.2%
Black Teenagers	39.8	27.5	-12.3	-37.0%
All Teenagers	20.1	14.3	-5.8	-34.0%
All Black Males	15.7	8.7	-7.0	-59.0%
All Black Females	13.2	9.4	-3.8	-34.0%
Hispanic Workers	11.6	6.9	-4.7	-51.9%
HS Dropout	11.5	7.1	-4.4	-48.2%
HS Graduate	6.8	4.0	-2.8	-53.1%
Some College	5.7	3.1	-2.6	-60.9%
BA or Higher Degree	3.2	1.8	-1.4	-57.5%

Source: U.S. Bureau of Labor Statistics, unpublished tabulations.

workers could lead to inflationary wage increases, while adding low-skilled workers could lower productivity and raise costs.

Firms might have to alter their production approaches to the extent that the mix of skills among new workers differs sharply from the mix among existing workers. Employers would seem to face serious problems integrating large numbers of less-skilled workers into their organizations, particularly at a time when the demand for skill is increasing on a long-run basis.

Surprisingly, a close look at the data provides an entirely different picture of recent job market trends. As Table 7 reveals, *fully 94 percent of the 11.7 million newly employed adult workers (ages 25 and over) had at least some college or a BA degree and over half of them came from the highest educational category*. Demographics and educational distributions by age allow us to reconcile the substantial improvement in the position of less-educated workers with the high levels of education among the newly employed. The normal tendency at peaks in the business cycle for employers to draw on less-educated workers has been offset by the long-term increase in the educational status of the population.

While the typical dropout had a much easier time finding a job in 1998 than in 1992, dropouts did not account for any of the growth in employment. The reason was that the high school dropout population declined by 2.8 million, as the number of young high school dropouts becoming adults was smaller than the number of older dropouts dying. At the same time, while the typical adult college graduate was no more likely to be employed in 1998, the population of college graduates ages 25 and over increased by about 7.5 million, or 20 percent, well above the 7 percent growth in the total adult

Table 7: Distribution of Net Employment Growth of Population, Ages 25 and Over, by Educational Status: 1992 to 1998, 1st Half

Educational Group	**1992** Employment	**1998** (1st Half) Employment	Change in Employment	Percent of Net Growth in Employment
High School Dropouts	11,845	11,754	-91	-0.8
High School Graduates, No College	35,305	36,090	785	6.7
Some College	25,523	30,480	4,957	42.5
BA or Higher	27,273	32,487	6,005	51.5
Total	99,946	111,601	11,655	100

Source: Tabulations by Urban Institute based on data from the U.S. Bureau of Labor Statistics.

population. As a result, college graduates constituted 65 percent of the 11.5 million increase in the 25-and-over population.

Thus, the striking reality is that employers have been able to draw on a growing pool of highly educated workers, even over the 1992-98 expansion. Despite the fact that nearly all college graduates looking for work had jobs in 1992, the 20 percent increase in the population of college graduates, ages 25 and over, provided a substantial pool of new educated workers. While the 25-and-over population has increased by 7 percent since 1992, the numbers with at least some college jumped by 18 percent.

These surprising figures put to rest a "worker mix" explanation for limited wage growth. Had the mix of workers become less educated, this compositional factor would have exerted a downward impact on average wages. Put another way, increased wages among existing workers could have been offset by a rising share of low-wage workers. In fact, the opposite took place. The average educational

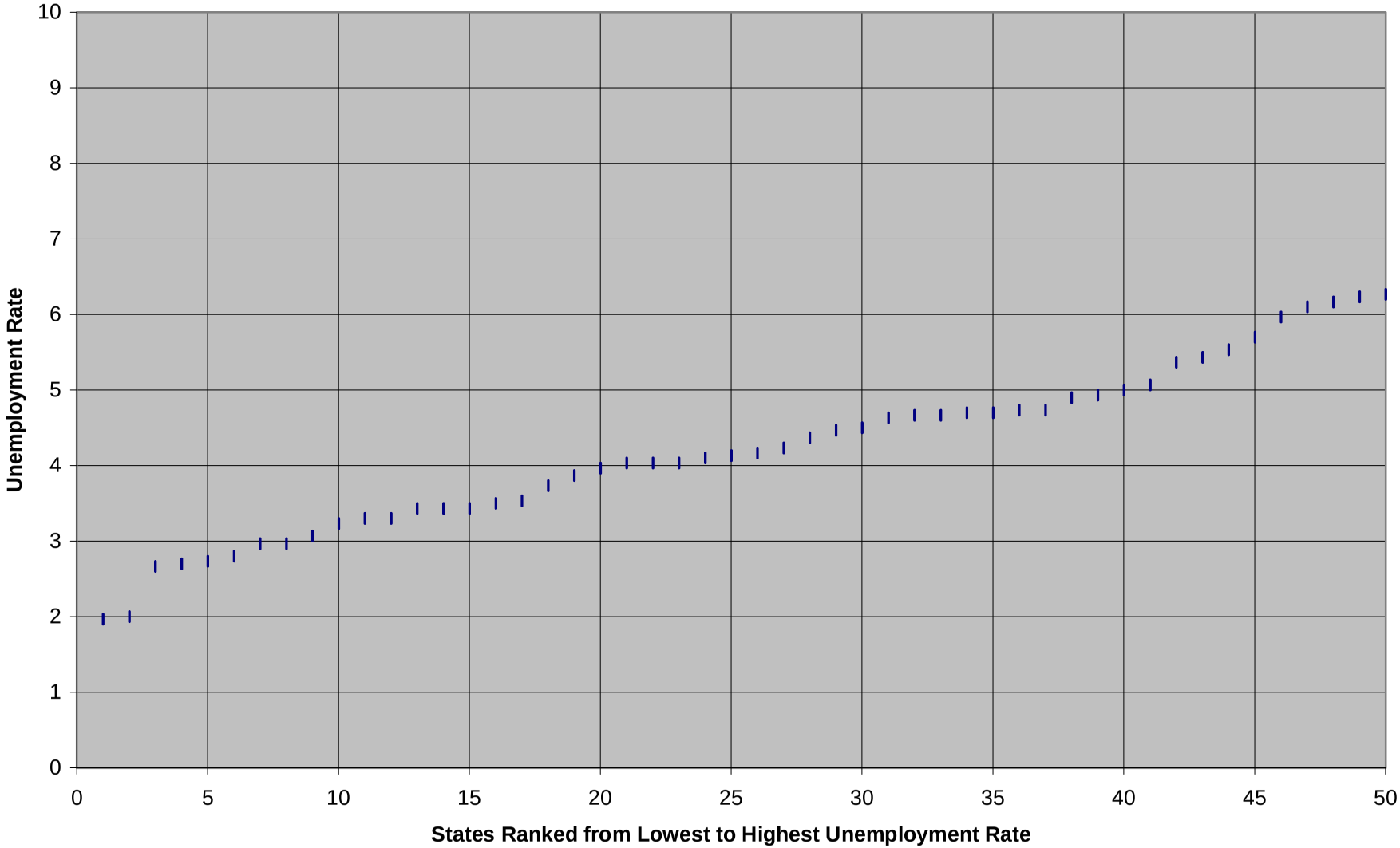
level of the workforce increased considerably over the period, thereby increasing average wage growth above the growth in wages among individual groups.

The rapid expansion in the supply of college-educated workers may explain why worker shortages have not become so widespread as to stimulate wage inflation. The long-term trend toward a rising demand for skilled and educated workers continued over the current expansion. In recent years, the structure of occupations has shifted dramatically toward high-skill positions. Professional, managerial, and technical jobs account for nearly two-thirds of the *net* growth in employment, far above the 28 percent of jobs in these occupations in 1988. Despite the shift toward high-skill occupations and the increased demand for skill within occupations, the substantial growth in the supply of the college-educated population apparently provided enough of an inflow to prevent the types of shortages one would expect at this stage of the business cycle.

Area Variation in Unemployment Rates and Wage Pressures

The national picture captures the average market conditions for the nation but does not show the variation across labor markets in the degree of tightness and any induced pressures on wages. In Figure 3, we can see the wide variation in unemployment rates, ranging from about 3 percent in the 10 states with the lowest unemployment to almost 6 percent for the 10 with the highest unemployment. Fully half (25) the states had unemployment rates at 4 percent or below and only 5 states at about 6 percent or higher. Growth in employment is a second indicator of labor market tightness in an area. Figure 3 displays percentage employment change between the first quarter of 1995 and the first quarter of 1998, when employment in the nation rose by about 5.5 percent. It is striking that high employment gains did not necessarily go with low unemployment rates. In fact, the correlation between

Figure 3: Distribution of Unemployment Rates by State: 1998:I



Source: Employment and Earnings, February-May 1998.

unemployment rates and percent growth in employment was slightly positive at .05.

The wide variations across states might provide indications as to whether inflationary wage pressures are finally emerging from tight labor markets. After all, 15 states now are experiencing unemployment rates at about 3.5 percent or below. If migration is limited, one would expect to observe faster wage growth in these low unemployment rate areas than in high unemployment areas.

To test this possibility, we compiled data on nominal wage growth between 1995:I and 1998:I by state and calculated growth in average weekly and average hourly wages and salaries from the outgoing rotation samples of the relevant Current Population Surveys. Next we tabulated growth in earnings by states ranked on the basis of 1998 unemployment rates, 1995-1998 percentage change in employment, and 1995-1998 percentage change in unemployment rates. The calculations grouped areas by quartiles of each labor market indicator. The unemployment rate groupings were those at 3.7 percent or below, 3.7 to 4.7 percent, 4.7 to 5.1 percent, and over 5.1 percent.

The well-known Phillips curve relates wage growth to levels of unemployment rates. Looking at this relationship across areas, one finds that wage growth was no higher in the lowest unemployment areas than in other areas. The numbers in Table 8 show no apparent relationship between rates of wage growth and area employment conditions. For example, the mean wage rates and mean weekly earnings were virtually identical across all four quartiles of unemployment rates.

Employer Responses to Tight Job Markets

How have employers kept wages in check in the face of these extremely tight labor markets? The answer is unclear. However, two sets of strategies appear to have emerged. The

Table 8: Relationship Between Changes in Wage Rates and Weekly Earnings and State Labor Market Conditions: 1995:I to 1998:I

	Quartiles of Unemployment Rates, 1998:I			
Wage Levels	**Below 3.7%**	**3.7% to 4.7%**	**4.7% to 5.1%**	**Above 5.1%**
	Percent Change in Hourly Wage Rates: 1995:I-1998:I			
Mean	7	8	7	7
Median	13	13	13	9
25th percentile	10	8	8	8
75th percentile	8	8	8	8
	Percent Change in Weekly Earnings: 1995:I-1998:I			
Mean	11	11	12	11
Median	11	13	11	7
25th percentile	8	13	15	9
75th percentile	11	9	9	8
	Quartiles of Percentage Change in Employment: 1995:I-1998:I			
	Above 7%	**5% to 7%**	**4% to 5%**	**Less than 4%**
	Percent Change in Hourly Wage Rates: 1995:I-1998:I			
Mean	10	8	5	8
Median	13	13	9	11
25th percentile	8	11	8	13
75th percentile	9	8	6	7
	Percent Change in Weekly Earnings: 1995:I-1998:I			
Mean	11	12	7	14
Median	10	10	6	14
25th percentile	10	13	11	15
75th percentile	12	5	5	13

Source: Urban Institute tabulations from Current Population Surveys, January-March 1995 and January-March 1998.

first is common to expansions and involves widening recruitment, expanding training, upgrading existing workers, and/or lowering normal hiring standards. The second involves the use of signing bonuses, stock options, profit-sharing, and other forms of non-wage compensation.

Types of Employer Responses

Employers engage in a number of strategies in response to a shortage of workers. Among the most common are:

- To increase recruiting, by advertising more, turning more to employment agencies, reaching a wider geographic area, and even paying recruiting bonuses to employees;
- To increase overtime work and turn part-time positions into full-time jobs;
- To reduce education and other requirements for new hires;
- To restructure work in ways that adapt to the available workforce;
- To substitute capital for labor;
- To expand the supply of qualified workers by conducting additional training;
- To improve working conditions;
- To offer bonuses, stock options, and other forms of non-wage compensation to new and/or existing employees; and
- To improve wages and fringe benefits.

Although employers generally turn to increases in wages and fringe benefits only as a last resort, a significant impact on wages usually emerges by this point in the business cycle. A natural explanation is that employers are choosing to emphasize responses other than wage increases over the current expansion. While the evidence concerning non-wage responses is spotty, individual cases and limited

data suggest employers are indeed adopting the strategy of emphasizing non-wage approaches.

Training

Employers are apparently increasing their training in a number of ways. Unfortunately, there are few consistent data sets documenting training practices over time. The 1994 National Employer Survey (NES) of over 4,000 employers, conducted by the U.S. Bureau of the Census on behalf of the National Center on the Educational Quality of the Workforce, University of Pennsylvania, gives a detailed picture of training patterns and expectations for growth over time. One striking finding is that over two-thirds of employers reported that the skills required to perform production or support jobs increased over the prior three years. Over three out of four employers said they had increased training outlays over the prior three years, while only about 3 percent or less had decreased their amounts of training. Employers reporting rising skill requirements on production and support jobs were especially likely to have increased training; 85 percent of this group increased training compared to 58 percent of employers who said skill requirements had not increased. In addition, the majority of employers projected a further increase in training.

Of the employers reporting an increase in training, over 80 percent cited changes in the work process, such as changes in technology or changes in the structure of work. Over 60 percent attributed the increases to product changes, and 90 percent saw expanded training as a way of upgrading quality. In addition, nearly two-thirds of employers indicated that increased training was motivated by the fact that new hires did not have the necessary skills.

The 1994 NES reveals that several types of training are offered by large proportions of employers (see Table 6). Note that over three in four employers reimburse workers for tuition at

colleges and training institutes and that over 70 percent provide training in production equipment, computer literacy, cross training, and teamwork. Most of these training areas are expected to grow over the next three years.

A Department of Labor survey (Frazis et al., 1998) undertaken in 1995 showed that 70 percent of workers received some formal training in 1995 and virtually all (96 percent) spent time in informal training. Formal training is training that is planned in advance and has a structured format and a defined curriculum. Much of the formal, employer-sponsored training involved only a modest number of hours.[1] Employees reported averaging only about 13 hours of formal training during a six-month period and about 31 hours of informal training. Reports by employers showed an even lower number of hours. Still, the costs of training, counting wages and salaries paid to trainees, tuition reimbursements, wages of trainers, and payments to outside trainers, amounted to over $50 billion per year. The youngest (under age 25) and oldest (over age 54) workers experienced the least amount of training. Smaller firms provided somewhat less training, though few differences were observed between medium-size establishments (100-499 employees) and large establishments (500 and over employees). Firms implementing four or more new workplace practices, such as pay for skills, employee involvement in technology decisions, job redesign, quality circles, and self-directed work teams, reported almost twice as much formal training as other firms. Formal training varies significantly among types of workers. More training reaches the high-paid, well-educated, full-time workers, workers in establishments with medium

1. Relative to workers in other OECD countries, workers in the U.S. are more likely to obtain job-related training, but average fewer hours per trainee. As a result, the average amount of training hours per worker is similar to the average for other OECD countries.

or low turnover, and workers with long tenure at the firm. For example, 90 percent of workers with a BA or more received formal training, but only 60 percent of those with a high school degree or less did so. At the same time, average hours of training were higher among workers in the production, construction, and material handling occupations than among managers.

These BLS data contrast sharply with data reported by the OECD from the International Literacy Survey. Their report suggests only about 23 percent of workers received any job- or career-related training paid for by employers.

In any event, there is little indication that firms are providing depth in their formal training sufficient to raise significantly the capacities of less-skilled workers. Formal training averages less than one week per year. Despite these limitations, some firms are increasingly emphasizing training, not only to improve the productivity of existing employees but also to increase the supply of qualified workers in various fields.

Many companies have begun working with high schools to develop a new workforce. Charles Schwab is a good example of a company making an effort to shift from recruiting only workers with a BA degree to developing its own workforce through a combination of work-based learning, work experience, and school-based learning. CISCO Systems is working with high schools to help young people qualify for jobs as computer network administrators. The auto industry has promoted a variety of programs to upgrade the quality of training for future auto mechanics. Other industries are working closely with career academies, which focus on industry or occupational fields in such areas as finance, travel, health, and computers.

Apparently, the involvement of employers goes beyond a few individual cases. According to the

1997 follow-up of the National Employer Survey of about 7,000 employers, an extraordinary 74 percent said they were participating in school-to-work partnerships and nearly 24 percent reported providing internships.

It will take time before many of these initiatives generate a substantial increase in the labor supply of skilled workers. However, in the interim, hiring and training young people as low-wage interns may allow many firms to limit the costs of expanding their workforce.

Several important questions arise about training responses. First, to what extent do firms perceive special barriers that limit the amounts of training they sponsor? Some firms may hold back on extensive training efforts because of their concern that workers will leave the firm once they undergo training. Second, can we learn anything about the nature of worker shortages from the training undertaken by firms?

Non-Wage Forms of Compensation

Employers are apparently expanding their use of special forms of compensation that do not involve direct salary increases. Despite the thriving economy, firms see themselves in a highly competitive environment, one in which raising prices can mean large losses of sales.

Anecdotal evidence suggests firms are turning to bonuses and variable compensation as a way of attracting workers in today's tight labor market. According to Louis Uchitelle (1998), signing bonuses are proliferating and reaching well beyond upper-level managers and skilled technicians. He cites examples such as the Labor Department's offer of a $4,000 bonus to attract young economists and Price Waterhouse's hiring bonus of $10,000 provided to newly hired management. Reportedly, the 1998 class of Cornell MBAs received an average bonus of $17,500, nearly double the 1996 average of

$9,400. Increasingly, employers are willing to extend signing bonuses to other college graduates, including public school teachers.

A second expanding source of compensation is employee stock ownership and stock options. According to the 1994 National Employer Survey, 35 percent of employers were offering stock options to their workers. By 1999, the figure is no doubt considerably higher. The National Center for Employee Ownership estimates that nearly 8 million workers participate in employee stock ownership plans or stock bonus plans and at least 6 million are in broad stock option plans. Changes over time in the compensation provided through these and other stock option or stock purchase plans are unknown. The Bureau of Labor Statistics does not try to measure the implicit income provided to workers who receive stock options.

One related trend in compensation is the area of nonproduction bonuses. According to Schwenk (1997a,b), the proportion of compensation going to nonproduction bonuses nearly doubled, rising from about 0.7 percent in 1986 to 1.3 percent in 1996. As expected, year-to-year percentage changes in nonproduction bonuses are highly variable and presumably highly sensitive to the profits of firms paying such bonuses (Walker and Bergman, 1998). For example, since the 1991-92 period, percent changes in bonuses were 16 percent, 21 percent, 7 percent, 14 percent, and 5 percent.

The share of wages and salaries in total compensation seems to have declined only slightly, from 73 percent in 1986 to 71.9 percent in 1996, if we take account of bonuses and benefit costs, including paid vacations, sick leave, health insurance, retirement plans, and social security and workers' compensation. However, these data ignore the value of stock options and possibly other types of special payments.

Whatever the facts, should policymakers promote compensation schemes linked to a firm's performance? Might the apparent increases in bonuses and stock options help firms remain cost-conscious in today's highly competitive environment? In the early 1980s, Martin Weitzman (1984) proposed "the share economy," one in which compensation would be based less on fixed-wage contracts and based more on arrangements in which what workers received depended on the firm's revenues or profits. Through the 1990s, Weitzman has continued to make the case for moving away from fixed wages, and his work has stimulated a lively debate in the economics profession. The debate deals with issues involving microeconomics (relating to the impact on individual firm hiring and performance) and macroeconomics (relating to aggregate unemployment and inflation).

Research on the role of pay incentives in firm performance certainly predates the work by Weitzman. A substantial literature has developed around these issues, and many of the findings suggest positive impacts on productivity and profitability from shifting compensation away from fixed-wage contracts.

The focus here is on whether variable pay helps firms respond to booming macroeconomic conditions. Although Weitzman's primary argument was that variable pay could induce hiring and reduce the 1980s problem of stagflation, he (1988) subsequently argued that the shift to variable pay could lower NAIRU, the unemployment rate consistent with non-increasing inflation. Two key elements of the argument are 1) that incentive pay arrangements encourage firms to increase hiring, and 2) that increased flexibility in pay will permit reduced variability in employment. In the case of pure wage contracts, firms hire to the point where the marginal cost (the wage) of the extra worker is equal to the marginal revenue obtained from the extra worker's contribution to sales. In this case, if sales or prices

fall and thus reduce marginal revenue below the wage costs, then the profit-making firm is likely to lay off workers until it reaches a new equilibrium. On the other hand, if workers were to receive a percentage of sales, then the firm would have no incentive to lay off marginal workers so long as they contributed some amount to revenues (even if it were less than the wage or the average revenue per worker).

Overall revenue to the firm would have declined but the firm would continue to offer employment to existing workers, since the revenues generated by the marginal workers would benefit the firm. However, average pay to the remaining workers would be lower with a no-layoff policy than with the types of layoffs arising in firms with wage contracts.

One obvious implication is that workers might be able to gain increased employment stability but at the cost of increased variability of compensation. Workers confident in their ability to keep a job might well choose to avoid the risks of variable pay. On the other hand, workers vulnerable to layoff and workers optimistic about their firm's future are likely to prefer compensation linked to their firm's performance.

Notwithstanding the logic of the share economy, the advantages of an increased emphasis on profit-sharing or revenue-sharing might be illusory (John, 1991). In a profit-sharing firm, adverse shocks reduce profits and thus lower compensation per worker. Although firms have no direct incentive to lay off workers in this situation, they may be reluctant to allow average worker compensation to fall significantly. They may lose their best workers to competitors or may find that their jobs do not pay enough to deter workers from shirking. To avoid this scenario, firms may lay off workers even though the marginal workers do not generate any direct costs. Another possibility is that reduced compensation

will lower the supply of labor and again induce reductions in employment in response to the shock to profits. Thus, while some labor market conditions suggest little gain from the shift away from fixed-wage contracts, other scenarios indicate more employment stability.

In today's context, the more important question may well be the impact of profit-sharing schemes on NAIRU. Here, Weitzman (1988) sees some potential gains for the share economy but concedes that some causes of a high natural rate of unemployment would apply as much in a profit-sharing context as in a fixed-wage context. Neither would have any advantage if high NAIRUs resulted from high social benefits, excessive bargaining power by unions, or efficiency wages. However, if the problem was that firm insiders were so powerful that external unemployment did little to affect wages, then bias toward expanding employment in profit-sharing firms would help speed up reductions in unemployment when the economy expanded. A world emphasizing profit-sharing might also reduce frictional and structural unemployment.

Surprisingly, Weitzman says little about the potential impact on inflation or on how uncertainty on the part of the firm will affect employment and prices in a low-unemployment economy. Firms concerned about raising prices and uncertain about future sales may wish to avoid building high wages into their permanent cost structure. At the same time, they must recruit workers in the context of a tight labor market. The response by many firms is to try to make one-time payments, especially to newly hired workers, and to offer stock options and bonuses that will ultimately be linked to profits. To the extent firms can attract and retain the same quality of workers using these compensation schemes—perhaps because good workers are willing to take risks in return for high potential rewards—the package may make financial sense as a hedge for firms. Since payments to workers will be directly

correlated with the firm's performance, the losses due to weak firm performance will be mitigated by the lower compensation to workers, while gains due to strong firm performance will be moderated by the higher compensation going to workers.

Already, the government encourages profit-sharing in a number of ways. There are special rules that provide tax advantages to workers and firms who create Employee Stock Ownership Plans (ESOPs). The tax treatment of stock options is also favorable. A worker receiving an option to buy his company's stock at the current market price obtains something of value even when the option price is the current market price. Modern financial economics can place a value on these options. Yet, workers will not pay any tax on the options until and unless they exercise the options and sell the stock at a price higher than the option price.

A key question is whether the government should do more to encourage these and other profit-sharing arrangements.

VI. Globalization

The expansion of world trade, communication, immigration, capital flows, and multinational business activity has generated a great deal of political controversy in recent years. The campaigns of Ross Perot and of Patrick Buchanan provided the most-publicized outcries against globalization of trade and investment flows, and opposition to trade agreements. But similar concerns are voiced in writings by political commentators (Kuttner, 1997; Wolman and Colamosca, 1997; Greider, 1997) and by some economists (e.g. Freeman, 1995; Wood, 1995). The title of a 1995 article by Richard Freeman put the matter bluntly: "Are Your Wages Set in Beijing?"

During the early postwar period, at least through the late 1960s, a broad consensus in the U.S. favored liberal international trade policies. The U.S. took a leading role in promoting the opening of world markets, in sharp contrast to its protectionist periods in the 19th century and the 1930s (DeLong, 1998). In the financial arena, the U.S. decision to allow the value of the dollar to be determined in the free market played a role in the globalization of currency markets and ultimately other financial markets. By the 1990s, however, in the aftermath of post-1973 weak productivity growth, slow wage growth, and increasing inequality, the optimistic picture of globalization has been challenged. While economic theory continues to predict aggregate gains from trade, some see the net gains as too limited to offset large losses experienced by less-advantaged citizens, many of whom are said to lose from globalization.

The globalization debate raises several important questions about future workforce trends and public policy responses:

1) What is the impact of globalization on productivity and on the real wages and real incomes of workers as a whole?
2) How does globalization affect the demand for various groups of workers as well as the distribution of real wages and incomes?
3) To what extent does globalization limit the ability of governments to take constructive actions on behalf of the workforce and disadvantaged groups?
4) What policies can permit the country to take advantage of the gains from globalization while minimizing its costs?

The literature on each of these questions is far too extensive to review in this paper. However, we provide some basic facts and draw on a range of analyses to clarify the various positions on these questions. The first step is to clarify the meaning of globalization. In addition to international trade,

globalization embodies foreign direct investment, international financial flows, international migration, and cultural interactions.

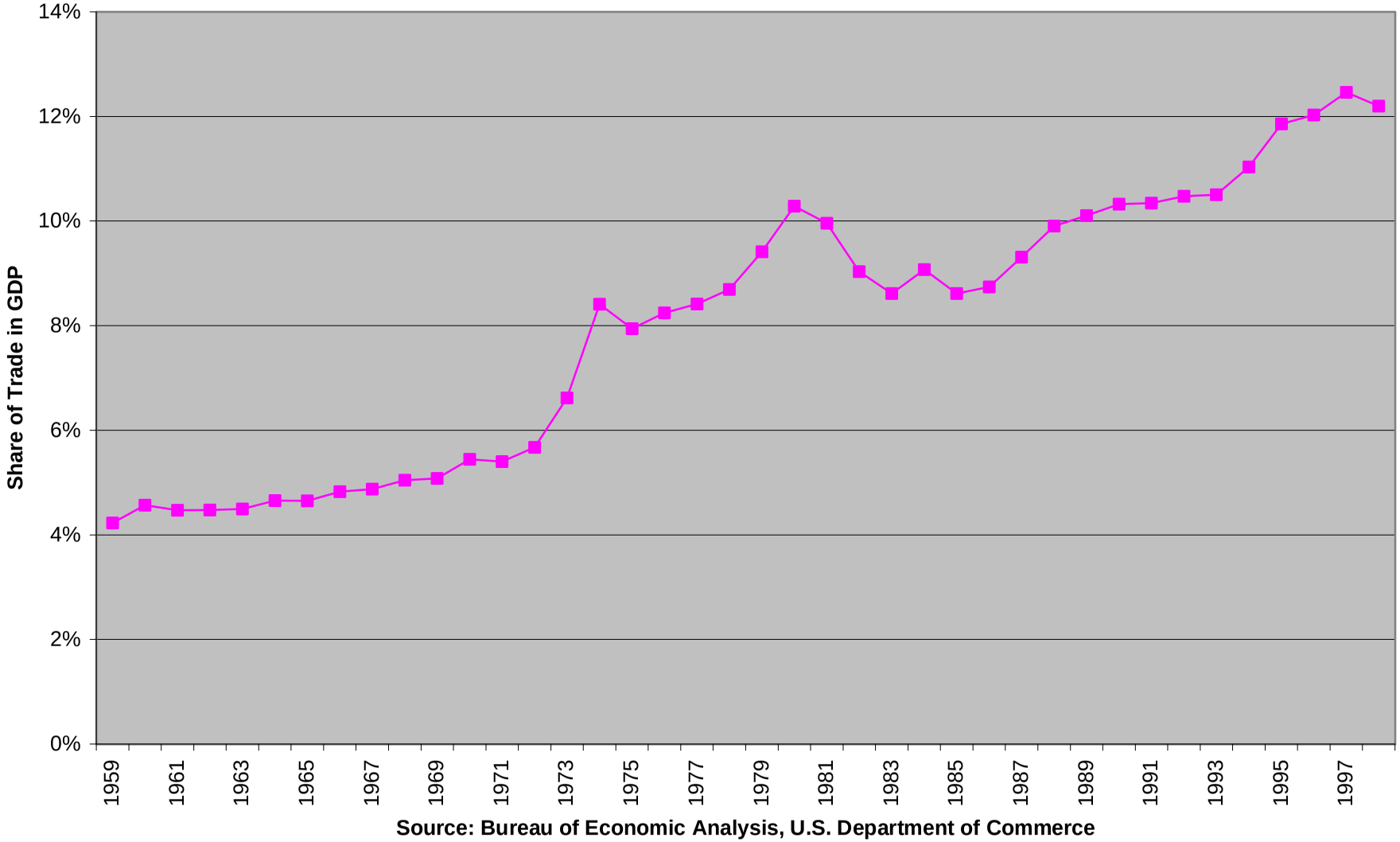
Globalization: Trends and Patterns

Trade is clearly expanding throughout the world and strikingly so in the U.S. World merchandise exports increased over the postwar period, from 7 percent of world GDP in 1950 to 17.1 percent in 1993 (Krugman, 1995). Dramatic reductions in transportation and communication costs have certainly played a major role (Cooper, 1995; Council of Economic Advisers, 1997). Ocean freight per ton declined from $95 in 1920 to $29 in 1990 (1990 dollars); air transport per passenger mile fell from 68 cents in 1930 to 11 cents in 1990. By 1993, 29 percent of the value added of U.S. exports traveled by air. Policy developments leading to the opening of formerly closed markets have also played a major role in the expansion of postwar trade (Krugman, 1995).

For the U.S., we can see in Figure 4 the trend in the average of exports and imports as a proportion of the Gross Domestic Product. Note the two large jumps in the trade shares. Between the first oil shock in the early 1970s and the oil shock in 1979-1980, the trade share rose from under 6 percent in 1973 to over 10 percent in 1980. When oil prices fell in the mid-1980s, the trade share fell back somewhat to about 8.5 percent before returning to the 10 percent level in the early 1990s and reaching 12 percent by the late 1990s.

Trade takes place mostly between industrial countries, but the U.S. share of imports from less-developed countries has increased. In 1972, U.S. exports of manufactured goods to less-developed, non-OPEC countries were 1.2 percent of GDP, while imports to the U.S. of manufactured goods from these countries stood at about 0.9 percent of GDP. By 1993, imports from these less-developed

Figure 4: Average of Exports Plus Imports as Share of Gross Domestic Product: 1959-98



Source: Bureau of Economic Analysis, U.S. Department of Commerce

countries tripled to 2.7 percent of GDP while US exports to these countries doubled to 2.4 percent of GDP (Lawrence, 1996). By 1995, the percentage of manufacturing imports coming from developing countries had risen to 33.6 percent, up from 18 percent in 1973 (Collins, 1998). These imports were about 16 percent of value added in all of U.S. manufacturing. Exports to less-developed countries also increased substantially. The non-oil-developing countries took 39 percent of U.S. exports in 1995, well above the 24 percent figure for 1970. Often left out of these calculations is the fact that wages have been rising, even in countries considered less-developed. As Collins (1998) points out, the average wage paid to manufacturing workers in countries trading with the U.S. increased from 38 percent of U.S. wages in 1960 to 85 percent in 1992. This striking evidence demonstrates that the U.S. is *not* trading more with countries paying relatively low wages.

Expanding trade is only one dimension of globalization. Another major indicator is foreign investment, including direct investment by U.S. companies abroad and by foreign companies in the U.S. as well as financial investments by foreign citizens or companies in domestic stock, bond, or money markets. When foreign companies invest in the U.S. and U.S. companies invest abroad, economies generally become more integrated with the rest of the world.

The overwhelming amount of business investment and financial investment takes place between industrial countries. Nearly $80 billion of the $90 billion invested in the U.S. from abroad in 1997 came from Europe, Canada, and Japan. About $72 billion of the $114 billion 1997 foreign investment by U.S. companies went to Europe, Canada, and Japan. In recent years, direct investment in less-developed countries has expanded significantly, doubling between 1990 and 1995, while total U.S.

direct investment abroad rose by 65 percent. The trend continued through 1997, as foreign direct investment in Latin America rose significantly.

Note that the difference in direct foreign investment amounted to about $24 billion, or less than 2 percent of gross investment in the U.S. Further, the payments from abroad to U.S. investors virtually match the payments to foreigners for their assets. In 1997, the U.S. paid about $257 billion to all foreign factors of production (mostly returns on capital), while U.S. residents and companies received almost the same amount, about $245 billion. On this measure, the rise of globalization has largely yielded outflows and inflows of similar magnitudes.

The similarity in returns masks much larger differences in the market value of assets. As of 1996, foreigners held about $5.1 trillion in assets, while the public and private sectors of the U.S. owned about $4.3 trillion. Since foreign-held assets in the U.S. rose more rapidly than U.S.-owned assets in other countries, foreigners were actually investing more in the U.S. than U.S. individuals and companies were investing abroad.

Another dimension of globalization is the growth of the international capital market. Financial flows across countries now dwarf the levels of only 10 years ago. Specialized markets, companies, and individuals have created the means by which organizations can manage risks (particularly foreign currency and interest rate risks) and make speculative investments. The international financial markets expanded in part with the growth in foreign trade and investment. But some are concerned that international financial markets take too much power away from national policymakers by constraining their ability to take various kinds of macroeconomic decisions and also to tax, to raise government spending, and to set labor standards.

Immigration to the U.S. has been expanding along with the growth of trade and financial flows. The share of net annual U.S. population growth accounted for by immigrants has reached about one-third, which equals its previous historical peak. About 1.1 million legal and illegal immigrants enter the U.S. each year and are concentrated in specific regions of the country. Moreover, immigrants are increasingly likely to come from less-developed countries. Between the 1950s and the early 1990s, the share of immigrants coming from Europe and Canada fell from about 67 percent to 21 percent, while the proportion from Asian and Latin American less-developed countries rose from 30 percent to 75 percent. Since today's immigrants are somewhat less educated than native-born Americans, many worry about competition between immigrant workers and less-skilled native-born workers.

Selected Evidence About Globalization's Impact on the U.S. Labor Market Effects on Overall Incomes and Wages

Economists generally favor free trade as a method for raising real incomes. When individuals, firms, and/or countries specialize in production for which they have a comparative advantage, the benefits accrue to all of the trading partners. In one sense, free trade and investment flows at the international level are a broadening of competition at the individual country level. Extending competition to the international sphere broadens the scope for increasing allocative efficiency. It could even raise efficiency in a dynamic setting, since broader competition may stimulate innovation. Reduced barriers to trade can broaden export markets and thereby allow U.S. companies to reap larger returns on their innovations (Lawrence and Litan, 1998), can raise productivity by increasing competitive pressure on firms and by allowing U.S. firms to draw on the capital equipment and knowledge produced in other countries, can widen the variety of goods and services available to consumers, and can lower world

prices. Lawrence and Litan cite World Bank estimates that consumers will gain between $100 and $200 billion per year simply as a result of one international trade agreement. Further substantial gains are expected to flow from the expanded international competition in telecommunications.

Nevertheless, some groups may lose from trade and may receive little or no compensation from the winners. The losses occur as some firms face lower prices and some workers must accept lower wages in the face of added competition. Were factors of production entirely mobile, firms and workers experiencing losses could shift away from their existing sectors toward more financially rewarding ones. But, given immobile capital and specific skills, changes in trade flows can impose capital losses. (Of course, other external forces—including changes in weather, technology, or government regulations—can create similar losses.) In addition, trade may add more competitive pressure to one factor of production (say, unskilled labor) than to another factor (say, skilled labor).

The theoretical impact of immigration is less clear. If immigrants simply expanded all segments of the nation's labor force and capital stock in the same proportions, rising immigration need not lower the incomes of non-immigrants (Card, 1996). In fact, given economies of scale, immigration could actually raise incomes of non-immigrants. On the other hand, if the immigrant inflow was concentrated among low-skill workers and was not matched by added capital, then immigrants could gain at the expense of native-born workers. Immigration directly increases the supply of labor and thus could lower average wages as well as affect the distribution of wages. Given that immigration is concentrated in a small number of places within the U.S., any negative effects of immigration on wages should take place primarily in these locations. Yet, according to David Card (1996), effects on wages are difficult to

observe. Most studies of the impact of immigration focus on its role in increasing earnings inequality, not on its effect on average incomes. We take up these issues in the next section.

The impact of foreign investment flows on workers is uncertain as well. In principle, the free flow of capital should raise the productivity of investments and certainly benefit owners of capital. One might think workers would lose if fellow citizens who own capital can invest their funds outside the country. If investments abroad substitute for investments in the home country, workers will work with less capital and find themselves producing less and earning less. But foreign investments might not substitute for local investments for two reasons: first, because a low expected return locally might cause capital owners not to make direct investments at all and second, because foreign investments may complement local investments, as when a company becomes more efficient by building low value-added parts in a less-developed country and high value-added components in its home country. Moreover, capital flows into as well as out of the country. If outflows ultimately lower the wages of workers, inflows may raise wages.

Several questions immediately arise from this textbook formulation. First, how large are the gains from globalization? Second, how are the benefits from globalization distributed? In particular, do some workers lose in absolute terms as well as relative to others in their societies?

Perhaps because of the complexity of the problem, few have attempted to estimate the overall income gains (or losses) from globalization. Even the effects of trade alone on national income are unclear. DeLong (1998) presents a figure of .3 to .7 percent of national income as the short-run costs to national income from protectionism over the 1800-1940 period in the U.S. However, he also points out that the long-run costs may have been much greater, since tariffs raised the prices of imported capital

goods and led to a lower-investment, lower-wage economy. One respondent to the DeLong paper (Eichengreen, 1998) agreed that protectionism did not assist U.S. growth, while another (Temin, 1998) argued that early tariffs helped stimulate U.S. manufacturing and ultimately increased economic growth. Another ongoing debate is over the value of trade barriers in stimulating growth in Asian economies, particularly Japan and South Korea. While economists cannot agree on the impact of trade barriers on national incomes in the past, most favor open trade regimes, even those who strongly favor policies to compensate those negatively affected by trade.

If effects on overall incomes are difficult to estimate, what about the impact on average real wages? Lawrence (1996) is content to argue that the expansion of trade could not have done much to *reduce* average wages in the U.S. His focus is on manufacturing, since it is this sector where the growth in imports from less-developed countries has taken place. After accounting for the wage premium paid in manufacturing, for the increase in manufacturing imports, and for the possibility that the threat of imports forced unionized manufacturing workers to accept lower rates of wage growth, Lawrence concludes that expanded trade could only have lowered wages by far less than one percent (0.1 to 0.3 percent) between 1978 and 1989.

A recent report by Scott, Lee, and Schmitt (1997) projects larger negative impacts on wages of U.S. workers. They attribute U.S. job losses of about 2.4 million in 1994 to the nearly $100 billion increase in the trade deficit in goods and services that took place between 1979 and 1994. As the authors themselves state, it may be inappropriate to attribute the job loss figure to trade instead of to broader macroeconomic factors. They still contend that trade has a negative impact on U.S. workers because of the induced shift in the composition of jobs. Their empirical results are far from conclusive in

indicating a negative trade effect on average wages, since they suggest that imports tend to reduce jobs requiring less education than the economy-wide average while exports tend to increase jobs among highly educated workers.

An alternative perspective emphasizes the potential positive impact of openness on productivity and, ultimately, wage growth. A set of case studies conducted by McKinsey Global Institute (Lewis et al., 1992; Bailey and Gersbach, 1995) estimates how productivity differs between the U.S., Germany, and Japan in a range of specific manufacturing and service industries and explores the reasons for cross-country differences. The findings for manufacturing suggest that the more exposed a country's industry is to global competition, the higher the productivity. Companies forced to compete with the best internal and external producers must achieve high productivity and quality or risk losing sales, profits, and even staying in business. The McKinsey studies of selected service industries yielded similarly positive effects on productivity from the competitiveness of the environment. The authors concluded that managers in industries facing an intensely competitive environment are forced to concentrate on their company's economic well-being, an emphasis that ultimately leads to higher productivity. The McKinsey case studies cast doubt on the idea (Piore, 1998) that companies succeed internationally by pursuing a low road of low wages, while accepting low productivity. However, since the McKinsey analyses deal only with selected industries, they may miss the experience of industries following the low-road model.

One topic that has attracted little or no attention in the literature is the impact of trade on the economy's ability to reach low unemployment rates with minimal inflation. Certainly, pushing unemployment rates to 4.5 percent and sustaining the current expansion are important for U.S. workers, especially the less advantaged groups. Trade flows and the threat of foreign competition may well serve

as a brake on price increases that otherwise might emerge in a more closed economy. On the other hand, open economies may be more unstable, both because of the larger potential impact of exchange rate shocks, supply shocks, and demand shocks. At this point, macroeconomists are still trying to understand why the U.S. economy has managed to maintain low unemployment rates without generating inflation. If a more open economy is one of the reasons, then policymakers will rightly be wary of actions that restrict trade.

Foreign investment is another element of globalization that could affect average U.S. wages. Some writers cite foreign investments or the threat of foreign investments by U.S. companies as weakening the power of workers and ultimately lowering their wages. The problem extends to the well-educated, according to Wolman and Colamosca (1997), who point to foreign investments by Citibank and Hewlett-Packard in Asia as "only the beginning of the trend toward corporate 'outsourcing'…of highly skilled labor." In 1995-1996, affiliates of non-bank U.S. companies operating abroad (BEA, 1998) employed about seven million workers, or about 5 percent of the U.S. workforce. However, foreign affiliates operating in the U.S. employed about 5 million workers in the U.S.. Thus, taking account of all direct foreign investment, there are about 2 million jobs fleeing abroad not offset by jobs coming into the country. This figure constitutes about 1.5 percent of the U.S. workforce. Moreover, these data do not take account of the higher investment in the U.S. resulting from the fact that the U.S. attracts more inflows of capital than U.S. companies and individuals spend on foreign investments. One study (Wade, 1996) suggests that even multinational enterprises generally move only their most routinized operations abroad and that such changes as "just-in-time" inventory management and

increased specialization weaken the incentives to disperse production globally and encourage locations near final markets.

Effects on the Distribution of Wages and Incomes

The primary concern about globalization is its impact on the distribution of wages and incomes in developed countries, including the U.S. One indicator of this concern is the vast literature on trade's distributional effects that emerged in the 1990s. Moreover, political movements opposing expanded trade emphasize trade's supposedly devastating effects on less-skilled or middle-skilled workers.

The underlying reason globalization is said to harm low-skilled U.S. workers is that the rest of the world has abundant low-skilled workers who are paid a small fraction of the wages paid to comparable U.S. workers. Once foreign less-skilled workers are allowed to compete with less-skilled U.S. workers, the wages of the two groups will converge, lowering U.S. wages toward those paid in other countries. The added competition could come via trade (where less-skilled work becomes embodied in goods) or immigration (where less-skilled workers directly raise U.S. labor supplies).

Other explanations based on economic theory account for all changes in price, production, and consumption, but use a variety of simplifying assumptions about technologies and mobility (Cline, 1997). According to a commonly cited theory (Stolper-Samuelson), increased trade in goods produced with relatively high proportions of a particular factor (say, unskilled labor) will cause a reduction in the price of that factor and an increase in its use. Applied to the debate over trade to the U.S., this theory offers a mechanism by which the expanded trade from less-developed countries could lower the wages of the less-skilled and increase wage inequality.

Before discussing some of the empirical work aimed at isolating the impact of globalization on wage inequality, it is useful to distinguish among measures of wage inequality. Trade could affect the price (wage rate) and/or quantity (number of workers) of each category of labor. Wage rates alone may not capture a reduced demand for less-skilled U.S. workers, since minimum wages or other wage rigidities could prevent wages from falling and lead to large employment reductions. Thus, for example, European trade with less-developed countries could be affecting European labor markets via increased unemployment of the less-skilled but still not generate increased wage rate differences between skilled and less-skilled workers.

Most studies examine the effect of trade on the wage rate differentials between two categories of workers. Some authors use the wage differential by education, such as the percentage wage gap between workers with a BA degree and workers with only a high school diploma or between the college-educated and non-college workers (Baldwin and Cain, 1994). Others focus on the wage differential between production and non-production workers (Bernard and Jensen, 1994; Leamer, 1998; and Sachs and Shatz, 1998). The choice matters because the wage gap by educational category rose much more dramatically than the wage gap between production and non-production workers. More importantly, analyses of fixed categories of labor may yield misleading results even about group wage differentials because they ignore changes in the composition of the categories.

A good example is the wage gap by education. The median earnings of college graduates grew from 1.3 to 1.7 times the earnings of high school graduates between 1979 and 1995. But, because of substantial increases in educational attainment, the groups did not represent the same proportions of the labor force. In 1979, the average high school graduate with no college ranked at the 40th percentile of

the educational distribution of the U.S. labor force; by 1993, the ranking of the average high school graduate had dropped to the 28th percentile. The decline in average ranking of college graduates was much smaller, declining from the 90th percentile in 1979 to the 87th in 1995. If the quality of the worker depends partly on native ability that is correlated with educational attainment, then some of the widening gap in wage differentials by educational category may simply be due to the changing average abilities of the two groups. A higher wage gap between 87th and 28th percentiles in the ability distribution than between the 90th and 40th percentiles is hardly surprising nor an indicator of rising inequality. Similar compositional changes may well explain some, if not all, of the increased differentials between non-production and production worker wages.

The compositional problem takes on added force since studies of trade impacts on age differentials between categories generally ignore distributional changes within categories. Another problem is that, when examining the effects of trade on the prices of particular industries, analysts measure the skill intensity of industries by fixed categories, by education or production-nonproduction workers.

While measuring impacts on *wage differentials* between groups simplifies the analysis, the approach does not directly address trends in *wage inequality*, a broad concept that incorporates all workers. Nevertheless, authors of some trade studies label their findings as examining impacts on wage inequality when they are actually measuring trends in wage differentials between fixed categories of workers. The distinction is important because it is clearly possible for wage differentials by education to widen at the same time that overall wage inequality does not change at all (Lerman, 1997a). Further, one recent analysis (Lerman, 1997b) found that the inequality of wage rates across all hours worked in

the U.S. economy was essentially constant between the mid-1980s and the mid-1990s, the period when expanded trade flows was said to have increased inequality significantly.

Despite these and other limitations, a large number of studies have yielded estimates of trade's impact on wage differentials. The studies are far too numerous to review in this paper. Yet even a cursory review of the findings reveals a wide divergence across studies in the proportion of the increased differential attributed to the growth in trade. Examples of studies concluding that trade exerted at most a minor (zero to 10-20 percent) impact on wage differentials include Lawrence (1996), Baldwin and Cain (1997), and Krugman (1995), while Wood (1994, 1995), Leamer (1998), and Sachs and Shatz (1998) argue for substantial (over 20 percent) impacts from trade alone. This strikingly wide variation comes from differences in methodology, in time periods, and in measures of wage differentials. One methodology involves measuring the factor content of imports and exports to determine the impact of trade on the implicit supply of less-skilled workers. An alternative is to examine the impact of trade on prices in trade-sensitive industries, especially those trade-sensitive industries that employ large numbers of less-skilled workers. Price reductions in these sectors would be indicative of trade's impact on wage differentials.

The work by Cline (1997) takes a distinctive tack by examining trade's impact on both the net changes in wage differentials and the gross changes in wage differentials. He points out that the net impact on wage differentials was the sum of several gross disequalizing components minus such equalizing components as the rising supply of skilled workers throughout the world. Thus, the factors contributing to rising differentials together add up to more than 100 percent of the net changes. On the basis of Cline's (1997) elaborate simulation analysis, trade effects represent a high share (33 percent) of

the *net* changes in wage differentials, but less than 10 percent of the gross changes. He clearly regards the smaller figure as the most appropriate.

Cline's simulation yields projections of the impact of trade expansions on the absolute as well as the relative position of the unskilled. Freezing existing trade protection levels at their 1993 levels and ruling out additional free trade agreements would do little to boost wages of the unskilled. Relative wages of the unskilled would fall substantially if trade encompassed the entire U.S. economy, including the sectors now producing nontraded goods and services. However, unskilled workers would still gain in absolute terms because of the efficiency gains linked to trade.

Only a few studies provide a combined estimate of the effects of trade and migration on wage differentials. The effects of migration have proved surprisingly difficult to identify. As Card (1996) notes, while one would expect migration to exert its largest impact on areas in which migrants concentrate, studies of even sudden inflows of foreign immigrants reveal little or no impact. Nevertheless, in a recent study, Borjas, Freeman, and Katz (1997) find that the high inflow of immigrants with no high school education accounted for up to half of the increase in wage differentials between high school graduates and dropouts. At the same time, these authors find that the combined impact of immigration and trade from less-developed countries explains no more than 10 percent of the widening wage gap between college graduates and high school graduates.

Overall, the evidence for large impacts of globalization on wage differentials and wage inequality is limited. Susan Collins, editor of the most recent collection of articles on the subject, concludes that the "available evidence suggests that globalization (including trade and immigration) may explain 1 to 2 percentage points of the 18 percentage point overall change in the wages for high school-educated

workers relative to those who are college educated." However, Collins points out that analyses to date have not taken account of several indirect effects of globalization and that future work may reveal a considerably larger role for the integration of the world economy.

Whatever the effect of trade and immigration on skilled-unskilled wage differentials, these two forces exerted a smaller impact on family income inequality. One reason is that since the mid-1980s overall inequality increased much less than wage differentials by education and skill. In fact, according to some comprehensive measures of inequality of wage rates across all hours worked, wage rate inequality has not risen since the mid-1980s (Lerman, 1997b). Although the role of changes within the top 3 to 5 percent of the wage distribution is in dispute (Lerman, 1997b; Bernstein and Mishel, 1997), wage inequality across the bottom 95 percent of hours worked was flat. Moreover, inequality of annual earned income among 25- to 54-year-olds actually declined between 1986 and 1995.

A second reason is that family income inequality depends not only on wage inequality but also on the number of earners per family, the composition of families, and the correlation between earnings of various family members (Burtless, 1998b). According to Burtless's calculations, only about one-third of the rise in family income inequality arises from increases in wage inequality. Thus, even if trade and immigration accounted for as much as one-third of the growth in wage inequality (a high estimate in the literature), trade would have contributed less than 10 percent of the rise in family income inequality.

One apparent omission from this literature is the effect of trade on the relative *prices* paid by skilled and unskilled workers and by low- and high-income households. Much of the concern about wage inequality effects arises from surging imports from less-developed countries. Since the goods produced by these countries are generally at the low end of the quality spectrum and include essentials

(especially clothing), it may well be that the benefit of lower prices for these commodities due to trade are disproportionately large among low-income individuals. If so, analyses of trade would have to take account of this relative consumption price effect as well as the relative wage effect. Of course, a full analysis of this issue might not yield any differences across groups in the direct gains from price changes.

Globalization's Impact on Progressive Government Policies

By limiting the autonomy of national governments to conduct economic policy, globalization could either harm or help workers. According to Robert Kuttner (1997), worries about the reaction by global capital markets force governments to adopt contractionary economic policies. Competition to retain and expand business investment might discourage governments from imposing corporate taxes. Spending and tax limitations might force a cutback in social welfare spending. And global market pressures could pressure governments to deregulate labor and product markets.

Judging the impact of globalization on macroeconomic policy and macroeconomic outcomes is difficult. Integration into the world economy or closer integration into regional alliances (as in the European Union) appears to discourage countries from running large fiscal deficits and permitting high rates of inflation. But in some cases, as in Japan today, it is pressures from abroad that are encouraging policymakers to pursue expansionary policies. Even when the short-run effect of globalization causes governments to emphasize contractionary macroeconomic policies, the long-run impacts are certainly as likely to yield positive as negative outcomes. Tight fiscal policies, by drawing investments, can lower interest rates, thereby promoting economic activity.

In the case of the U.S., the key question is whether price competition resulting from open trade improves the economy's ability to sustain very low unemployment rates without inducing additional

inflation. To the extent that trade exerts this impact, the gains are likely to be largest among the less-skilled, since their employment is most responsive to reductions in the aggregate unemployment rate. In the recent expansion, from 1992 to the first half of 1998, for example, the employment-population ratio of high school dropouts rose by over 10 percent while the employment-population ratio of college graduates remained constant.

Economic integration need not weaken national authorities' ability to set high labor standards for two important reasons. First, such policies as mandated benefits may not raise the costs of production to the extent that the payroll taxes are borne by the workers in the form of lower pay. Second, the gains in higher productivity from labor standards may outweigh any impact on costs.

So far, evidence is scanty that globalization is generating irresistible pressures toward the convergence of policy regimes, according to Eddy Lee (1997) of the International Labor Organization. Lee cites the wide and continuing differences in labor market institutions in Japan, Germany, and the U.S. as indicative of the ability of countries to pursue different national approaches while remaining integrated in the world economy.

Financial destabilization resulting from globalization is another worry. There is little doubt that some financial crises have been exacerbated by the scale of foreign liquid investments. Certainly, the current run from Asian currencies has complicated Asia's ability to recover from the recent shocks. However, when countries experience a financial crisis, a non-market dimension of globalization—institutions such as the International Monetary Fund and the World Bank—can provide liquidity and credibility that prevent even greater outflows of currency. On the other hand, the measures proposed by the IMF for some of the Asian countries may be overly restrictive and contractionary.

Ironically, globalization effects on financial stability might well lead to even larger inflows of foreign capital into the U.S. Thus, while the U.S. might lose sales because of the weaknesses of foreign economies, the capital inflow might raise investment in the U.S.

Overall, globalization's effects on economic policy have been more a matter for speculation than for rigorous research. Only a modest amount of research is available on the questions of 1) the impact of globalization on policy; and 2) the effects of any globalization-induced policies on country outcomes.

Policy Implications of Globalization Trends

Surprisingly, disagreements over the impact of globalization are more common among economists than are differences over policy. Even those who estimate negative effects of trade on unskilled U.S. workers continue to favor free trade and open markets. Economists who believe trade's negative impact is minimal nevertheless favor training and other policies to help low-skill workers.

Policy responses generally fall into three main categories: 1) support for additional training; 2) wage subsidies for low-wage workers; and 3) special assistance for workers displaced because of increased imports. Other proposals include raising the minimum wage, encouraging unionization, and requiring labor standards in other countries.

If the impact of trade is to reduce the demand for less-skilled workers relative to high-skilled workers, the natural response is to train less-skilled workers to attain higher skills. By reducing the supply of less-skilled workers and increasing the supply of skilled workers, improved education and training increases average wages while narrowing the gap between low-skilled and skilled workers. Trade-induced declines in the relative demand for the less-skilled could be fully offset by training-

induced reductions in the relative supply of the less-skilled. If so, we would not expect any change in relative wages.

The nation's capacity for training and retraining in response to trade would be enhanced with improved systems for identifying sectoral skill demands, successful training models, and certification for occupational skills. In many fields, limited information about training and certification may slow the adjustment to changing demands. Incentives for continuing and even lifelong learning could also smooth the adjustments to trade-induced shifts in demand. Were U.S. workers engaging in training on an ongoing basis, they could react more easily to all sources of restructuring, including not only trade but also technological change. Finally, improving the nation's school-to-career systems, especially with youth apprenticeship, would provide another vehicle for matching skills demanded by employers with the mix of training obtained by students and workers. Employers are likely to offer places only in apprenticeship fields for which they anticipate strong demand. Instead of having the mix of training places determined by external programs, apprenticeship and similar approaches directly transmit employer demands to potential trainees.

Since expanded education and training may not spur enough of a shift out of the unskilled categories, many favor helping low-wage workers by providing wage subsidies. One such policy is the 1993 expansion of the Earned Income Tax Credit, implemented in 1996, which provides a 40 percent subsidy to earnings to families with two or more children on earnings up to about $9,000.

Some policies to compensate the workers displaced by trade have been enacted, but their effect has been small. Trade Adjustment Assistance was criticized for serving primarily to extend unemployment benefits and not retraining workers. The special NAFTA program requires recipients to

take up training, but some are wary of accepting benefits because workers obtaining benefits cannot take an alternative job.

One approach, suggested by Lawrence and Litan (1997), is to complement training programs with some explicit compensation for the loss of a trade-related job. To compensate workers for their actual losses—as indicated by the difference between what workers earn in their new jobs and what they earned previously—they propose wage insurance. Under their scheme, dislocated workers who were in their job for some minimum period (say, two years) would qualify for half the loss of earnings they may experience after gaining a new job. Compensation would last for a limited period of two to three years.

This plan raises a number of questions. Would the subsidy extend to workers with high levels of earnings, say $60,000 before displacement and $40,000 after displacement? If so and if the percentage of earnings reductions in postdisplacement jobs does not vary with the initial wage level, then the size of the subsidy would increase, the higher was the worker's former earnings. Perhaps more troubling is the recognition that low-wage workers indirectly affected by trade might obtain little or no benefits while middle- and upper-wage workers gain substantial amounts.

Immigration policy is another tool for affecting the relative scarcity of unskilled workers. Currently, migrants average only slightly less education than native-born workers. However, they are concentrated at the bottom and the top of the educational distribution. Estimates of their impact on wage differentials suggest that immigrant inflows are much more important than trade in lowering the relative wages of high school dropouts. If these estimates are accurate, then lowering inflows of low-skilled immigrants might improve the relative market position of residents who did not complete high school.

Globalization is only one factor influencing the low-skilled labor market. In order to examine policies for assisting low-skill workers, we must take a close look at the market for their services.

VII. The Low-Skilled Labor Market

The low-skilled labor market has changed markedly in the last decades. The returns to education and other measures of skill grew rapidly between the early 1970s and the early 1990s; the returns to skill have stabilized since then. The rising return to education has induced two important supply responses. First, young people have enrolled in college and completed college degrees at much higher rates. Second, young unskilled men, particularly black men, have decreased their labor force participation and their hours of work.

While inequality has increased among education groups, it has declined between men and women and blacks and whites. While evidence of labor market discrimination still exists, much of the remaining gap in black and white men's wages can be attributed to their level of skills before they enter the labor market.

Welfare reform and an expanding economy have pushed 1 million women on TANF into the labor market; the vast majority of former TANF recipients are low-skilled and have entered low-wage jobs. In addition, many unskilled immigrants have joined the labor force in several large American cities.

Despite rising levels of formal education, many adults lack the basic math and reading skills, work habits, and interpersonal skills that most employers require. Increasingly, those individuals have become disenfranchised from the market economy.

The future prospects of unskilled workers will depend largely on the education system and on the willingness of federal and state governments to provide income supplementation in sensible ways to low-skill workers and their families. Policymakers should focus on preparing young adults to enter the labor market. Reducing the flow into the low-skilled market both improves the job opportunities of young, better-trained workers and lowers the overall supply of low-skilled workers, which makes low-skilled adults more scarce. Clearly, the K-12 education system needs reform if more high school graduates are to obtain the basic math, reading, and communication skills required by most employers. Given that government training programs have limited success in increasing basic skills, public policy for adults older than age 25 should focus on making work pay through wage subsidies or decreases in employment taxes.

The Supply of Low-Skilled Workers: Educational Attainment

One measure of skill is educational attainment. By that measure, the supply of low-skilled workers has declined since the early 1970s. Typically, analysts categorize high school dropouts and individuals with a high school diploma and no college as low-skilled or medium-skilled workers.

The most rapid increase in educational attainment in the past 25 years has come from individuals who attended college but did not complete a degree. In 1971, 44 percent of 25- to 29-year-olds had completed some college; in 1995, 62 percent had. College graduation rates also rose over the same period, from 22 percent to 28 percent. High school graduation rates, which were already quite high, increased modestly from 83 to 85 percent of 18- to 24-year olds.

Levels of formal schooling differ widely among ethnic groups. Blacks and Hispanics lag well behind whites in their levels of college attendance and graduation. In 1995, 65 percent of whites, 52

percent of blacks, and 50 percent of Hispanics had completed some college. In the same year, 28 percent of whites, 18 percent of blacks, and 16 percent of Hispanics had completed a four-year college degree.

The black high school graduation rate is only slightly lower than the white rate; in 1995, 85 percent of black youths and 90 percent of white youths had graduated from high school. The Hispanic high school graduation rate, 63 percent, was much lower than the black or white rates.

Trends in Other Measures of Skill

Formal education is an imperfect measure of skill because individuals with the same level of formal schooling show vastly different levels of skill on standardized tests (Kilburn and Lillard, 1997).

Only one time series measure of the skill level of the adult population exists. The General Social Survey has administered a 10-question vocabulary quiz to its respondents since the early 1970s. Judged on the basis of GSS scores, the vocabulary capabilities of the adult population have declined over time. While this trend portrays a pessimistic view, the short vocabulary test provides only limited information on one dimension of skill.

Time series data have been collected on high school students' performance on two standardized tests, the SAT and National Assessment of Education Progress (NAEP). Average student performance on both tests has changed little over the last 20 years. The average SAT math score dipped slightly in the mid-1970s, but has returned to its early 1970s levels. The average math score was 509 in 1972 and 511 in 1997. Average SAT verbal scores declined from 530 in 1972 to 509 in 1976, but have remained roughly constant since. In 1997, the average SAT verbal score was 505 (College Board, 1997).

The NAEP has been administered to a random sample of 17-year-olds enrolled in high school since 1970. Average NAEP science and math scores declined slightly in the late 1970s and early 1980s, but have since returned to their early 1970s levels. Reading scores have remained roughly constant since 1971, but writing scores have declined slightly, but not significantly, since 1984 (National Center for Education Statistics, 1997).

Because the population of students taking the SAT and NAEP has become more ethnically and economically diverse, the lack of a trend in test scores can be interpreted as a sign of modest progress. High schools have succeeded in holding achievement constant while educating a more diverse group of students. When they complete high school, youths have roughly the same skills they did 20 years ago. But because college attendance is rising, the average youth today likely enters the labor market with more skills than youths did in the 1970s.

The 1992 National Adult Literacy Survey provides a snapshot of the math and reading skills of the U.S. adult population in 1992. The survey found that a substantial minority of adults have limited basic skills. The survey found that 21 percent of the adult population had only rudimentary reading, writing, and math skills. Such individuals could not locate an intersection on a street map or total the costs of a purchase from an order form. Another 25 percent of the population had the second-lowest level of reading, writing, and math skills; they could not calculate a 10 percent discount from a bill using a calculator or use a bus schedule (National Center for Education Statistics, 1998). Individuals at the lowest two levels of literacy do not have the skills required by most employers; 66 percent of all jobs require more than the lowest two levels of literacy (Levenson, Reardon, and Schmidt, 1999).

The Demand for Skills

Most analysts agree that today's employers demand more skills than they did in the past. Several factors have contributed to the rising demand for skills in the labor market: technological and organizational change, trade, deregulation of key industries, and the decline of unions. Three types of empirical evidence support the hypothesis that the demand for skills has risen: estimates of the returns to skill, time series data on the content of a representative sample of jobs, and evidence from case studies of individual firms or industries.

A large literature has documented that the returns to education have increased at the same time that the supply of college-educated workers has increased. The data are consistent with an upward shift in the demand for skill. Since 1973, the average hourly earnings for workers with a high school degree or less have declined in real terms; male high school dropouts' wages declined by 2 percent, and male high school graduates' wages declined by 1.2 percent. At the same time, male college graduates' wages have remained roughly constant in real terms, and men with graduate degrees experienced a 0.7-percentage-point increase in hourly earnings (Burtless, 1998a).

There is also evidence consistent with an increase in the returns to cognitive skills. Murnane, Willett, and Levy (1995) compare the returns to mathematics, reading, and vocabulary skills across two cohorts of young workers. The first cohort graduated from high school in 1972 and the second cohort graduated in 1980. They find that the returns to cognitive skills were higher when the 1980 cohort entered the labor market than when the 1972 cohort did.

Individual-level data on workers and their jobs provide direct evidence that workers use more skills than they did in the past. Using representative samples of workers, Howell and Wolff (1991) show

that between 1960 and 1985 the changing occupational and industrial structure of the economy has led to a rising demand for cognitive and interpersonal skills and a decline in the demand for motor skills. Using data from 94 job titles in 93 manufacturing establishments, Cappelli (1993) finds that manufacturing occupations substantially upgraded their skill requirements between 1978 and 1986. Clerical jobs showed an even split between jobs that were upskilled and those that were deskilled; the jobs that were deskilled appear to be associated with the development of new office equipment. As noted above, in the 1994 National Employer Survey of establishments, three-fourths of employers reported the skills required to perform production and support jobs had increased over the prior three years.

Most case studies of particular firms or industries have shown an increase in the skills used by most workers. However, the differences between industries, occupations, or firms within a particular industry are substantial.

Evidence from a cross-sectional survey of firms in four large metropolitan areas suggests there is a substantial gap between the skills that employers require and those that disadvantaged workers possess. Among jobs that did not require a college education, 70 percent required that workers deal with customers, 61 percent required that workers read or write paragraphs, 65 percent required arithmetic, and 51 percent required the use of computers. In addition, 71 percent required a high school diploma and 61 percent required specific vocational experience. Holzer (1998) finds that 42 percent of black and Hispanic high school dropouts, 24 percent of white high school dropouts, and 21 percent of female welfare recipients would face very limited job availability in their cities.

Declining Male-Female and Black-White Wage Gap

While wage inequality has grown among education groups, wage differentials have narrowed between men and women as well as between whites and blacks. Overall, the male-female wage gap declined from 37.1 percent in 1984 to 23.8 percent in 1995. Over the same period, the wage differential between white and black men declined from 26.7 percent to 18.0 percent, and the wage differential between white and black women declined from 8.7 percent to 6.0 percent (Lerman, 1997a).

Much of the remaining difference in hourly earnings for white and black men can be explained by differences in their level of skills before they enter the labor market (Neal and Johnson, 1997). U.S. schools tend to be segregated by race, and the schools that black students attend are worse quality than those that white students attend. In addition, black and other minority students face discrimination by their teachers in terms of placement into academic courses. Black and other minority students who do well on standardized tests are much less likely to be placed in academic high school courses than white students with comparable test scores. Students placed in a non-academic track have less access to college prep math, science, and English courses that teach the skills demanded by most employers and most colleges.

Changes in Labor Force Participation of Unskilled Men and Women

In response to the declining real wages, unskilled men have witnessed a marked decline in labor force participation in the last 20 years. Between 1982-1983 and 1987-1989, the labor force participation rate of men in the first quintile of the wage distribution declined 4 percentage points, while the labor force participation rate declined 1 percentage point for men in the second quintile of the wage distribution (Juhn, Murphy, and Topel, 1991). The remainder of the male wage distribution had virtually

no change in their labor force participation rates. Conditional on working, high school dropouts and high school graduate men are working fewer hours than they did in the past (Coleman and Pencavel, 1994).

The fact that many unskilled men have withdrawn from the labor force may have affected the composition of families, although causation may run from weak family structure to reduced labor force activity. In any event, marriage rates are much lower among labor force non-participants than among other men. Only 46.7 percent of men who are long-term non-participants in the labor force live with their wives. In contrast, 86.1 percent of men who work full-year live with their wives.

While unskilled men have decreased their labor force participation, unskilled women have gradually increased their labor force participation since the early 1970s. Within the last four years, one group of low-skilled women—unmarried mothers—has raised dramatically their participation in the labor market and the trend is likely to continue. As noted above in the work and family section, the increase in single mothers' labor market participation was due in part to a 1996 federal law that placed a lifetime limit on the number of years a family could receive AFDC benefits.

Welfare reform will play an important role in the future of the unskilled labor market. Many analysts think that the influx of welfare mothers into the labor market will crowd out men and immigrants. Others argue that the labor market will be able to absorb welfare mothers by creating new jobs; studies show that large groups of unskilled immigrants have been fully absorbed by the labor market with minimal displacement of native-born workers.

Within the last four to six years, low-skilled workers, including high school dropouts, have raised their employment levels substantially. In part, the gains for low-skilled workers are the result of an economic expansion that has brought unemployment rates to 4.5 percent, a 30-year low. Another likely

reason is that the number of dropouts entering the labor force has been entirely offset by high school dropouts leaving the market as older, less-educated workers retire. As noted above, of the 11.7 million net increase in employment of workers 25 and over, over 90 percent have attended college and over 50 percent have BA degrees. With fewer competitors, more low-skilled workers have managed to find jobs. In the coming decade, the demographic shifts will be less favorable for low-skilled workers.

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