February 1988

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Keywords
U.S., labor, industrial, population, employment, work, force, job, immigration, illegal, United States

Comments
Volume 3 - Paper #46

#46

Colloquia Address to The
National Aeronautics and Space Administration
Langley Research Center
Hampton, VA
February 9, 1988

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One of the more insightful explanations for economic progress in industrialized nations during the last half of the Twentieth Century has been the recognition of "human resources as the wealth of nations." The notion has long enjoyed a rhetorical appeal by politicians in democratic societies. But awareness that the principle has enormous economic implications for national and international well-being has essentially been a post-World War II phenomena. Increasingly, policymakers in industrialized nations have realized that the human resource development of their labor forces is the key to efforts to address such difficult issues as efficiency, equity, stabilization, and growth. Nations with limited physical resources, such as Japan and Germany, have sustained superior economic performances in this new post-industrial era largely because they have been forced to develop their human resources. All industrial democracies have come to appreciate the wisdom of Ray Marshall's observation that "developed, educated, motivated people are an unlimited resource...[while] underdeveloped, uneducated, unmotivated people are a monumental drag on an economy in the internationalized information era" of contemporary times.

Human resource development is a popular political theme as long as all that is required is words. But, perhaps as is also the case with NASA and the conduct of its mission, successful human resource development requires

a long term planning perspective and sustained financial support over time. Our political system has its greatest difficulties when it is confronted with long term issues. In many ways the system is better geared to responding to sudden claps of thunder that result from short run events then it is to addressing gradual barometric changes that occur overtime. It is the cumulative effect of gradual changes overtime, however, that are what are critical to the nation's welfare and survival.

Human resource development issues are also complicated by the fact that they are intangible by nature. The political system is designed to provide tangible signs of accomplishment -- post offices, highways, tanks, buildings, dams, airports, parks, military bases and so on are always popular. These tangible projects can stand as physical monuments to the politicians who fought to provide them. They remain in the political district forever -- or at least for a political lifetime. They often provide media opportunities whereby ribbons can be cut, newspaper stories can be written, TV pictures can be shown, and, if the politician is lucky enough, the project may even be named after him or her as a permanent reminder of past political accomplishments.

But human resource development requires expenditures of funds on the provision of skills, education, information, and mobility opportunities for individual people. The payoff for these investments to individual participants usually come only years later. The human beneficiaries of these efforts usually have no idea who fought to create the programs in which they participated. Moreover, in our mobile society, the persons who benefit from these endeavors often move from one place to another so that they may not have the opportunity to vote or to support the politicians who are committed to human resource issues. Thus, despite the rhetoric of support, actions

in the political arena to support a sustained commitment to human resource development in the United States are sorely lacking.

The Study of Human Resource Issues

One approach to the study of human resources is the quantitative perspective. It examines the effects that population trends and characteristics have on the size and composition of the civilian labor force that is available for employment. Another is the qualitative vantage point. It involves issues pertaining to the actual preparation of the available labor supply for employment. In the contemporary era of rapid technological change and enhanced international competition, all industrialized nations are faced with the imperative of addressing qualitative issues. But no other nation in the 1980s is simultaneously confronted with a labor force that is growing as fast and whose composition is changing as rapidly as is that of the United States. Constancy of size and homogeneity of composition are convenient labor force assumptions of standard economic theory. Neither propositions, however, are operational concepts for understanding the current challenges to labor market adjustment and public policy formulation in the United States.

The Relationship of Population to Labor Force Changes

A nation acquires its population in two ways: people are native born within its boundaries or foreign born people immigrate for permanent or temporary settlement. Alterations in the size and characteristics of the population, in turn, are transmitted to the economy through labor force participation.

Analysis of the size of the native born population that may be available for employment over time is a relatively straightforward process. As the people are already born and mortality tables are reasonably reliable, the

available statistics pertaining to their potential number and their characteristics are reasonably predictable. Accounting for the foreign born portion of the population, however, has proven to be a more difficult task.

Immigration accounts for at least one-third of the annual growth rate of the U.S. population (and probably a higher percentage of the labor force) in the 1980s. It is anticipated that the percentage will increase in the 1990s. Despite the complex and highly legalistic nature of the nation's immigration and refugee admission systems, there has been substantial illegal immigration that has circumvented these formal procedures.

Immigration flows are less predictable because immigration policy in the United States is set on purely political criteria. The economic implications of various administrative decisions, judicial rulings, and legislative changes that shape the size and composition of immigration flows are never the subject of careful prior research. Thus, the employment consequences of immigration and refugee policies cannot be adequately anticipated. The recently enacted Immigration Reform and Control Act of 1986, for instance, contained four different amnesty programs that will allow millions of illegal immigrants and others whose admission legality was previously in question to adjust their status to become permanent resident aliens. If they choose, all may eventually become naturalized citizens. In some cases, the amnesty beneficiaries will be able to have their immediate relatives (spouses, children, and adult parents) join them at once. All will be able to reunify their families eventually. The new law also greatly liberalized the provisions that allow foreign temporary workers and non-immigrant workers in the future to be employed in the United States. Hence, no one knows what the ultimate population and employment effects of this historic legislation will be other than to say that millions of people will

be involved over the next ten years.

As for the behavioral link between the population and the labor force, it too has proven difficult to anticipate. Actual labor force participation rates of sub-groups of the population vary at given points in time and have also been found to be sensitive over time to changing unemployment rates, inflation rates, fertility rates, family practices, and social attitudes. Thus, the wise aphorism--attributed to the physicist Neils Bohr--that "it is hard to predict, especially the future" applies with a vengeance to the art of forecasting actual labor force size or behavior.

Labor Force Definition

As with all economic measures, the civilian labor force has a particular statistical definition. The civilian labor force is composed of all persons in the non-institutionalized population over 16 years of age who have a job plus those who meet a specific definition as being unemployed. The unemployed are those persons in the non-institutionalized population who are 16 years of age or older and who are willing, able, available, and "actively seeking" work but who have been unable to find paid employment for one hour in the survey week each month.

The civilian labor force, however, does not include those persons who want to work but who, due to the state of the economy, have abandoned active search for a job because they feel that such efforts would be fruitless. Such potential labor force participants are called "discouraged workers". Research has shown that the more people who are unemployed at any given time, the more who tend to be discouraged (and visa versa). It also reveals that women in general as well as younger and older men are most likely to be affected by this phenomenon.

With the high aggregate unemployment levels of the mid-1980s, the number

of discouraged workers has held at the high level of about 1.2 million persons over the past three years. Because they are not "actively seeking" a job, discouraged workers are not officially counted as being unemployed and, therefore, are excluded from being counted in the civilian labor force.

On the other hand, the definition of the civilian labor force does include as being employed all persons who desire to work full-time but who can only find part-time jobs due to prevailing economic conditions. In the first quarter of 1987, the involuntarily part-time employed work force totalled a very high figure of 5.4 million workers.

Thus, the official definition of the civilian labor force has limitations. It should be no surprise, therefore, to learn that the definition of who should be included and who should not is, periodically, a heated subject of both political and professional controversy.

The Unique Experience of the United States

Since the mid-1970s, the civilian labor force of the United States has been growing at a sustained pace of about 2.2 million net additional job seekers a year (from 93 million in 1975 to 117.8 million in 1986). In terms of those actually able to find employment, their numbers also have increased significantly from 85.8 million to 109.5 million over this same time span. This growth in absolute numbers is not to be found in comparisons with any of the other major industrial powers of the free world (see Table 1). Only Canada and Japan have shown any appreciable absolute increases in the size of their respective labor forces over this period.

In two countries -- Germany and Great Britain, the number of employed persons was actually smaller in 1985 than it was in 1975 (i.e., they have sustained negative growth in employment and soaring unemployment). For France, Italy, and the Netherlands, employment changes have been barely

Table 1 International Comparison of Growth of U.S. Labor Force
With 10 Other Industrialized Nations, 1975 and 1986.

Employment Status and Year	United States	Canada	Australia	Japan	France	West Germany	Great Britain	Italy	Nether-lands	Sweden
Labor force										
1975	93,775	9,974	6,169	52,530	21,600	26,130	25,130	20,080	4,820	4,123
1986	117,834	12,870	7,562	59,410	23,480	27,280	27,460	21,990	5,710*	4,437
Absolute Growth	24,059	2,896	1,393	6,880	1,880	1,150	2,330	1,910	890	314

*Note: Data is for 1985

Source: U.S. Department of Labor

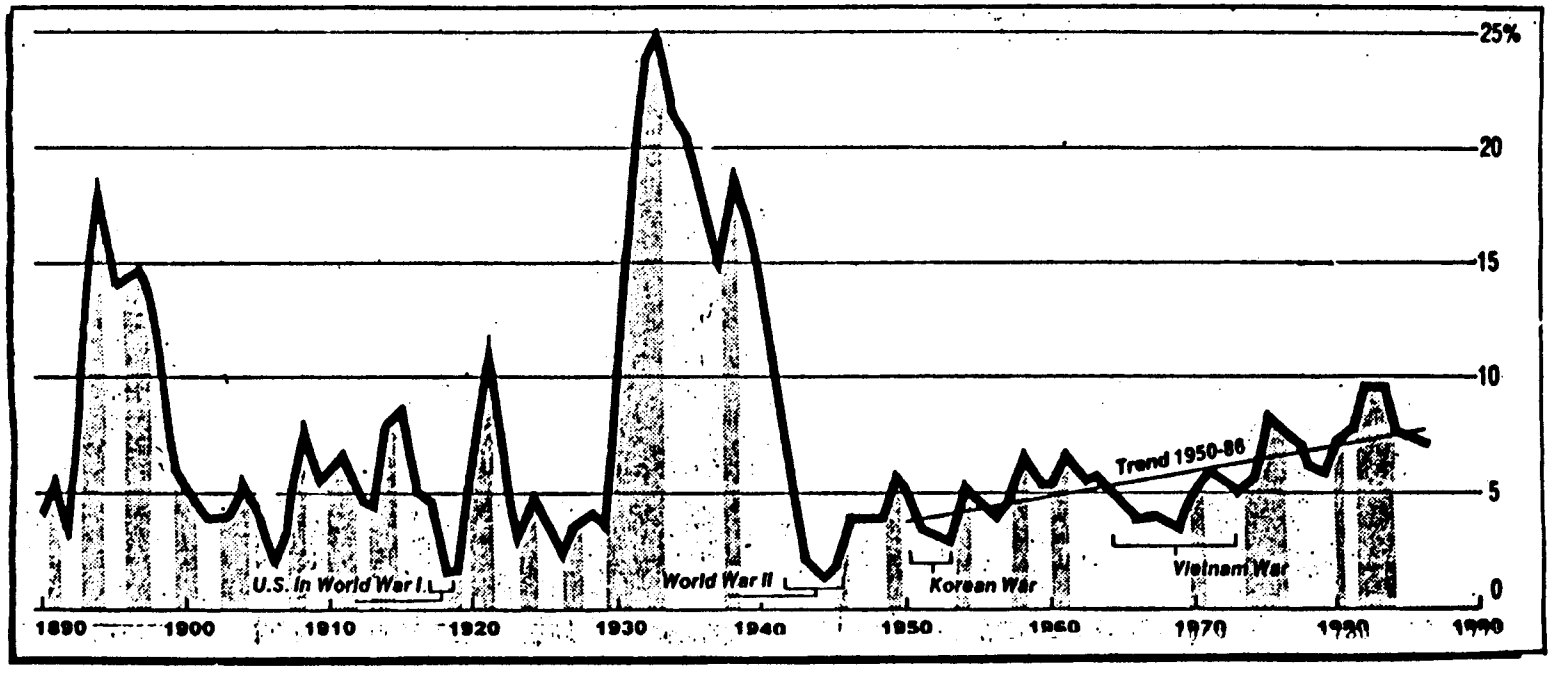
positive and the ranks of the unemployed swelled. Canada and Australia have been able to provide more jobs but not at a sufficient pace to keep their unemployment rates from significantly increasing. Even Japan and Sweden have sustained increases in unemployment but their rates still remain below what would be considered to be full employment in other countries.

While it is true that the U.S. economy has generated an enormous number of jobs over this period, it has not been able to create enough employment opportunities to keep its unemployment rate from drifting upward. Indeed, as is shown in Table 2, unemployment rates during periods of general prosperity since 1950 have tended to drift upward. Prior to World War II, the U.S. economy was subject to roller coaster-like swings in its unemployment experience. But with the advent and application of macroeconomic policies (i.e., fiscal and monetary policies) since World War II, the wild gyrations in the U.S. economy have been modulated. On the other hand, the gradual upward creep in the unemployment rate since 1950 (see trend line in Table 2) indicates that the U.S. economy is confronted with increasing labor force adjustment difficulties. Because the labor force is not homogeneous, the composition of its growth is crucial to understanding and to formulating the human resource policies needed to ease adjustment.

Explanations for U.S. Labor Force Growth

There are three major forces that have contributed to the rapid growth of the U.S. labor force over the past decade. Each of these pressures has also exerted significant influences on the gender, age, and racial composition of the labor force. They pertain to the unprecedented number of women who have sought entry into the labor market; the maturing of the post-World War II "baby boom" population cohort; and the acceleration in the number of immigrants coming to the United States. All of these factors are likely

Table 2. Annual Unemployment Rates for the United States, 1890-1986



Source: U.S. Department of Labor

Note: Shaded areas represent periods of economic recessions; unshaded areas represent periods of general economic prosperity.

to varying degrees to continue to exert considerable influence into the 1990s. Each deserves brief elaboration.

Female Workers

More women in both absolute and relative terms have been entering and staying longer in the labor force than at any previous time in the nation's history. The movement has been so abrupt and so large that it can be fairly described as being a "social revolution" in its own right. Two out of every three new labor market entrants since 1975 have been women and the same pattern is forecast to continue through 1995. The labor force participation rate of all women has risen sharply from 33.9 percent in 1950 to 54.4 percent in 1986. In total, women constituted about 45 percent of the civilian labor force in 1986 and it is projected that this percentage will increase to 47 percent by 1995.

The contributing factors for this growth rests with the rapidly increasing participation rate of married women in general and married women with children in particular. It is the labor market behavior of these particular female workers that represents the dramatic departure from the past. Single adult women were usually in the labor market. Married women and women with children were not. The participation rate of married women has risen from 23.8 percent to 54.7 percent from 1950 to 1986. The rate for women (married or not) with children under 18 years of age has grown from 45.9 percent in 1975 to 54.7 in 1986. For women with children under 3 years of age it has risen from 34.1 percent to 50.8 percent over this same span. Under these circumstances of rapid change of social behavior, no one can predict what the normal labor force participation rate for women will prove to be. It is projected, however, that the female labor force participation rate will continue to increase into the mid-1990s.

The reasons for the sudden acceleration of women in the labor market are still the subject of debate. The movement was completely unpredicted by both demographers and labor market forecasters. The mechanization of housekeeping tasks since the end of World War II combined with the growing acceptance of family planning and the availability of new methods to permit the timing of birth occurrences, created a window of opportunity for the social change to occur. The momentum to alter the status of women in the work place was provided in the 1960s by the civil rights movement. Women were not initially included in the Civil Rights Act of 1964. But as the result of an amendment added during the floor debates in the House of Representatives by southern politicians who sought to kill the entire bill, prohibitions against sex discrimination in employment were included in the final legislation. The moral force of the law, combined with the creation of a legal enforcement mechanism, provided the emerging feminist movement with a lever to attack barriers that had previously prevented women from fully participating in the labor market.

The momentum for change was subsequently prodded by the prolonged period of inflation that occurred during the 1970s and early 1980s. The corrosion of real family incomes forced many women to find jobs in order to maintain previous family standards of living. In the wake of these occurrences, there has also been a surge in the number of female family householders. In 1985, 16.2 percent of all families were so constituted -- up from 10.8 percent in 1970. For black families, the percentages increased from 28.3 percent in 1970 to a staggering 43.7 percent in 1985. Aside from single adult women who were usually in the labor force, widowhood, divorce, and pregnancies outside of marriage have caused an increasing number of other women to be the sole breadwinners for their families. As a consequence, many such women

have been forced to seek employment whether they actually wished to or not.

An important population corollary to the growth of female participation in the labor market is the decline in family size. The number of children per family in the United States has fallen from 3.2 in 1930 to about 1.8 in the mid-1980s. A sustained rate of 2.1 children per family is needed for population replacement. The most significant encouragement to smaller families has been provided by the aforementioned advance of married women into the labor force. It is highly unlikely that women in the future will abandon the financial and personal independence that they have come to experience. This is especially the case given the fact divorce has become so common (i.e., about half of all marriages will end up in divorce given current averages). Thus, high labor force participation by women is likely to be a permanent feature of the U.S. economy as will be the pattern of smaller families.

One consequence of these family trends has been that the number of new labor force entrants who are native born has been declining in the 1980s and will continue to do so until the mid-1990s. But, as opposed to other industrialized nations where similar declines in family size have occurred, the growth in the labor force of the United States is likely to be only marginally influenced, if at all. Immigration of foreign born persons will likely serve as a substantial offset. Moreover, the "baby boom" generation is having an echo effect (see Table 3). Due to their sheer large numbers, the members of this age group are producing a large number of children even though individual family sizes are shrinking. Between 1980 and 1986, the number of children under age 5 grew by 10.9 percent (to 18,128,000 children in 1986). It is the only age cohort under 24 years of age to show a positive rate of increase over this period (see Table 4). Hence, by the late 1990s

Table 3

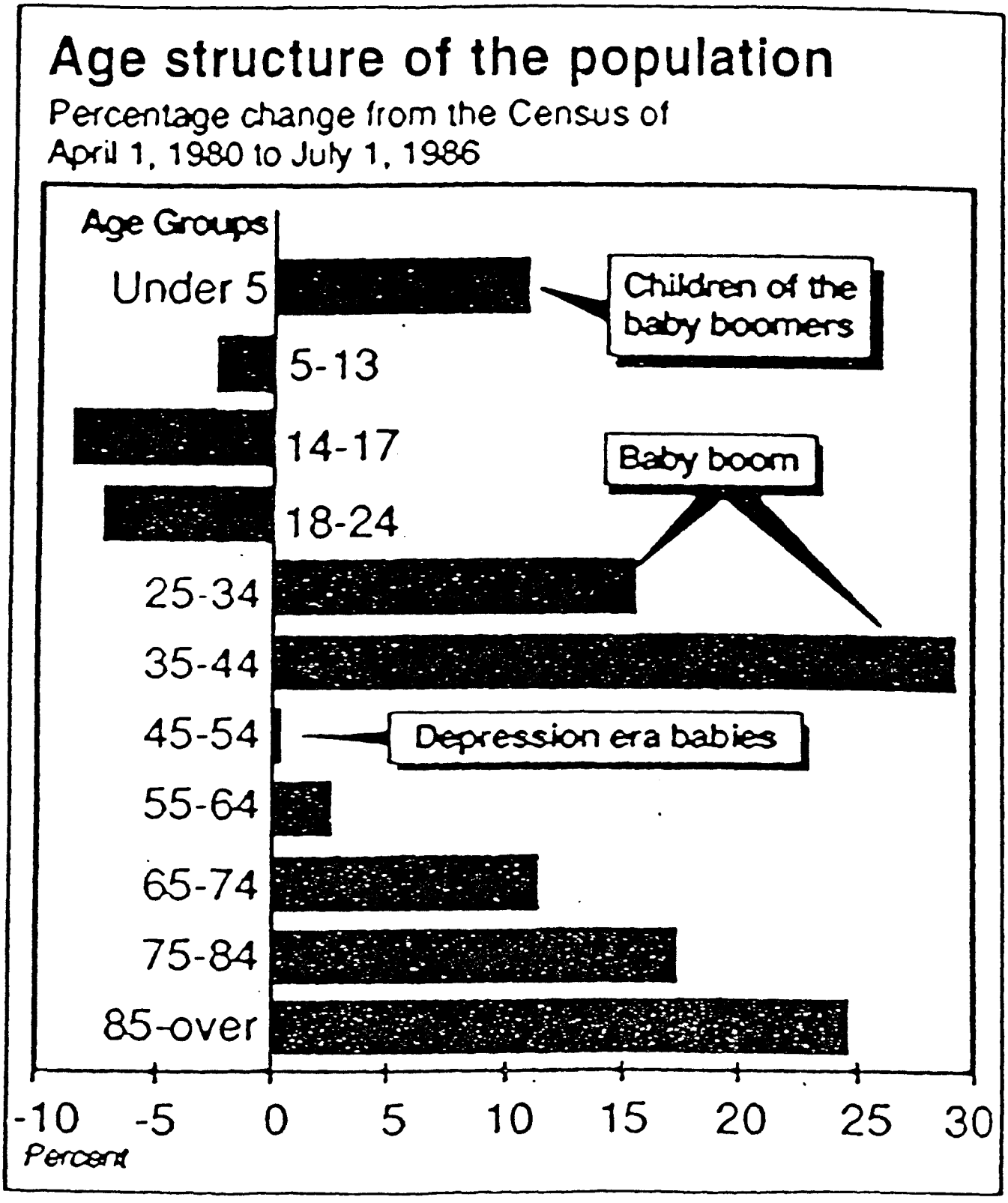

Age structure of the population
Percentage change from the Census of
April 1, 1980 to July 1, 1986
Age Groups
Under 5
5-13
14-17
18-24
25-34
35-44
45-54
55-64
65-74
75-84
85-over
Children of the baby boomers
Baby boom
Depression era babies
-10
-5
0
5
10
15
20
25
30
Percent

Table 4

Age-group changes

Here is a rundown of the estimated population totals, in thousands, by age group as of July 1, 1986, and the percentage change since 1980:

Group	Total	Change
Under age 5	18,128	10.9
5 to 13	30,346	-2.6
14 to 17	14,797	-8.9
18 to 24	27,973	-7.6
25 to 34	42,984	15.4
35 to 44	33,143	29.0
45 to 54	22,822	0.1
55 to 64	22,230	2.4
65 to 74	17,325	11.2
75 to 84	9.051	17.1
85 and over	2,796	24.8

the predicted decline in native born labor force entrants should be reversed.

The Maturing of the Population

The rapid growth of the labor force has also been significantly affected by the age distribution of the U.S. population. It currently contains a big "bulge" in the age range of between 25 and 44 years of age. Not only is it the largest cohort of the population but it is also the most rapidly growing. The bulge is a direct result of the labor force entry of the post-World War II "baby boomers" (those born between 1946 and 1964) who have now matured into prime working aged adults. Of the nation's population in 1986 of 241,596,000 people, a total of 76,127,000 were in this age cohort (or 31.5 percent of the total population) [see Table 4 again]. If this cohort is broken into its two component parts, the age 25 to 34 grouping totals 42,984,000 persons (it grew by 15.4 percent between 1980 and 1986) while the age 35 to 44 grouping contains 33,143,000 people (it grew by a whopping 29.0 percent between 1980 and 1986). Regardless of gender or race, persons in the 25 to 44 years of age cohort of the population have the highest labor force participation rates of the entire labor force. If ever a person is going to seek work, it is most probable he or she will do so between these ages. Fortune magazine has dubbed this population distribution of the 1980s as being "demography's glad tidings" for the economy because it affords the U.S. economy the potential for a significant productivity bonus. Thus, the bulge is a "good" problem to be confronted with -- especially when its implications are compared to the earlier time when this bulge was in its youth (pre-1980) or what lies ahead in the future when this cohort enters its retirement phase (post-2001).

In this regard, it is also necessary to note that the racial and ethnic composition of the "baby boom" population is also affecting the composition

of the labor force. Although family size is decreasing for all major racial and ethnic groups, the decline began earlier and has been more rapid for non-Hispanic whites than for blacks and Hispanics. As a consequence, the proportion of the labor force that is black has risen from 9.9 percent in 1975 to 10.7 percent in 1985 and the proportion that is Hispanic has grown from 5.3 percent in 1980 to 6.7 percent in 1985. The labor force growth rate of both groups has been increasing annually since 1980 at a faster rate than that of the overall labor force. Together, blacks and Hispanics accounted for 40 percent of the absolute growth in the labor force between 1980 and 1985. Data for other minority groups -- such as Asians -- are not collected on a monthly and annual basis but their numbers are also known to be growing rapidly. Thus, minority workers are becoming a larger proportion of the labor force each year and they will continue to do so for the remainder of this century.

The New Wave of Immigrants

The last factor contributing to the rapid growth of the U.S. labor force is a unique phenomenon to the experience of the U.S. economy. It is immigration. Since the mid-1960s, immigration has slowly re-emerged as a key characteristic of the U.S. population and labor force. In stark contrast to all other advanced industrial nations, the United States stands virtually alone in its willingness to admit each year hundreds of thousands of legal immigrants and refugees for permanent settlement as well as to tolerate mass abuse of its laws by an even larger annual number of illegal immigrants.

As for the other industrialized nations, Japan accepts no immigrants and few refugees. In Western Europe, the major industrialized countries pursued temporary foreign worker policies in lieu of seeking permanent immigrants to meet labor shortages in the post-World War II era. Since 1973-

4, however, even these "guestworker" policies have largely been abandoned and little, if any, encouragement is now given for new immigrants. Most of these nations have also taken much stronger steps in the 1980s than the United States to discourage illegal immigration and to reduce refugee admissions. With stagnant or declining labor forces, they have elected to restrict entry and focus policy attention on the qualitative aspects of human resource development for their citizens.

The 1980 census revealed that the size of the foreign-born population of the United States had not only reversed its 50-year downward decline but it had sustained a quantum increase. As a group, the reported foreign-born population rose from 9.6 million in 1970 to 13.9 million persons in 1980 (an increase of 45 percent). No other grouping of the personal characteristics of the population increased by a larger percentage between 1970 and 1980 than did the foreign born. The 1980 Census also disclosed that one of every 10 people in the country spoke a language other than English at home. As it is certain that there was a substantial statistical undercount of the illegal immigrant population by the 1980 census, even these official findings were surely understated. Given the momentous immigration developments since 1980, it is certain that the foreign born population to be recorded by the 1990 census will show another quantum leap. For this reason, the demographer Leon Bouvier has warned that "there is a compelling argument for close coordination between the formulation of employment and immigration policy." So far, his pleas have gone unheeded.

Immigration is also contributing to dramatic changes in the racial and ethnic composition of the U.S. population and labor force. About 85 percent of the legal immigrants and refugees admitted to the United States since the mid-1970s have come from either Latin America or Asia. Over this period,

the six countries of origin that account for the largest numbers of the new legal immigrants and refugees are Mexico, Vietnam, the Philippines, Korea, China-Taiwan, and Cuba. The last time a European country appeared as a major source of new immigrants was in 1973 when Italy ranked fifth. Moreover, it is undebatable that most illegal immigrants to the United States over this same time span have also come from Latin America and Asia. Many illegal immigrants from these countries will be the beneficiaries of the new amnesty programs. Thus, the population and the labor force of the United States are both becoming more pluralistic in their ethnic and racial composition than has ever before been the case.

Indeed, it was the recognition that United States does have serious literacy and educational deficiency problems associated with its multi-racial labor force that led the Prime Minister of Japan, Yasuhiro Nakasone to make his infamous remarks in 1986 that Japan is "an intelligent society" and that the U.S. is not. While it was absolutely wrong of him to explain the difference purely in racial terms (since most educational experts explain the performance differences between the races more on environmental disadvantages that have confronted certain minority groups than on inheritable genetic traits), statistically speaking he was correct. There are marked differences in the performances of different racial groups on educational tests; in the number of school drop-outs; and in the incidence of adult illiteracy.

The Duel Impact of Immigration

Contemporary immigration to the United States seems to function like an electrical charge that generates both positive and negative effects at the same time. On the one hand, the flow of illegal immigrants, refugees, asylees, and many legal immigrants admitted only because they have relatives

already in the United States seem to be flowing disproportionately into the low wage labor markets of the United States. There they compete with the large number (almost 30 percent of the nation's labor force) of citizens workers who, unfortunately, are also seeking low paying jobs in the economy. This flow of unskilled workers is also a major contributor to the mounting need for social services in many urban areas of the nation. Immigration, for instance, is the leading cause for the alarming growth in illiteracy in the United States today. School drop out rates and high teenage pregnancy rates are also contributors. But immigration is the major factor. Thus, there is a social cost -- a heavy one -- associated with the fact that the nation's immigration policy is not held accountable for its economic effects; is governed largely by political objectives; and has yet to prove that it is capable of combating the massive abuse of the system by illegal immigration.

On the other hand, it is also the case that the pool or highly skilled and educated workers in the United States is disproportionately composed of foreign born persons and every indication is that it is going to become more dependent upon them. In 1986, almost a quarter of the new Ph.D. recipients in the United States were awarded to persons holding permanent or temporary visas (see Table 5). In sciences and engineering the percentages are far higher (almost 32 percent). In the physical sciences, almost one-third of the Ph.D.'s awarded in 1986 were granted to persons holding permanent or temporary visas; in engineering the percentage is over half; and in the life sciences it was almost one-fifth. It is also the case that an increasing percentage of those persons receiving Ph.D.'s who hold temporary visas are electing to seek employment in the United States (see Table 6). The percentage holding permanent visas who find employment in the U.S. is quite

TABLE 5. Percentage Distribution of Doctorate Recipients, by Citizenship and Broad Field, 1962-1986*

Field	Year of Doctorate						
	1962	1966	1970	1974	1978	1982	1986
Total, All Fields							
U.S. Citizens	85.6	83.4	84.5	79.7	81.9	78.4	72.3
Permanent Visas	2.4	3.5	5.3	5.5	4.4	3.9	4.5
Temporary Visas	10.8	10.6	8.7	10.2	11.1	13.5	16.6
Physical Sciences							
U.S. Citizens	84.8	82.0	82.2	73.8	76.3	72.7	62.5
Permanent Visas	2.2	3.4	6.3	7.5	6.1	4.7	5.0
Temporary Visas	11.9	11.9	10.1	14.8	15.4	19.5	26.2
Engineering							
U.S. Citizens	76.5	73.4	73.2	55.7	52.0	44.2	40.8
Permanent Visas	4.9	6.3	12.5	16.4	13.4	11.2	10.2
Temporary Visas	17.9	16.7	13.7	22.4	31.7	38.9	40.6
Life Sciences							
U.S. Citizens	79.8	77.3	80.2	74.3	79.9	80.8	75.9
Permanent Visas	2.7	3.3	5.2	6.4	4.3	3.2	3.6
Temporary Visas	16.7	18.0	13.9	14.7	13.3	13.1	15.2
Social Sciences							
U.S. Citizens	85.4	83.4	85.1	82.7	84.8	82.2	77.9
Permanent Visas	2.1	3.7	4.9	3.6	3.5	3.4	3.8
Temporary Visas	10.5	10.2	8.7	8.8	8.1	9.2	11.5
Humanities							
U.S. Citizens	90.7	88.3	89.6	87.4	89.3	84.9	78.8
Permanent Visas	2.4	4.3	4.7	4.3	3.3	3.9	4.4
Temporary Visas	4.6	4.5	3.8	4.2	4.7	6.4	9.3
Education							
U.S. Citizens	94.5	94.6	94.6	90.6	90.3	86.6	84.7
Permanent Visas	0.8	1.0	1.2	1.4	1.8	2.0	2.5
Temporary Visas	4.3	3.5	3.4	4.2	5.7	7.9	7.1
Professional and Other							
U.S. Citizens	82.5	81.9	78.2	80.3	80.0	76.5	70.8
Permanent Visas	2.2	3.9	5.5	4.8	3.9	3.7	4.8
Temporary Visas	13.3	9.6	12.7	9.5	13.7	14.0	15.6

*Details do not add to 100 percent where citizenship is unknown.

Source: National Academy of Science

Table 6. Percentage of Doctorate Recipients with Employment Commitments in the U.S., by Citizenship and Broad Field, 1977 and 1986*

Field	U.S. Citizen 1977	U.S. Citizen 1986	Permanent Visa 1977	Permanent Visa 1986	Temporary Visa 1977	Temporary Visa 1986
Total, All Fields	94.9	92.4	85.4	74.5	23.7	35.6
Physical Sciences	97.1	96.0	84.0	80.9	25.5	49.6
Engineering	96.3	95.3	94.1	84.3	48.6	53.7
Life Sciences	94.1	93.9	75.4	56.1	9.2	13.1
Social Sciences	94.3	92.6	85.1	74.7	21.6	28.2
Humanities	92.7	89.6	87.3	74.2	21.1	27.1
Education	95.2	90.8	62.2	52.8	8.1	8.2
Professional Fields	95.5	92.8	85.4	80.0	21.4	48.4

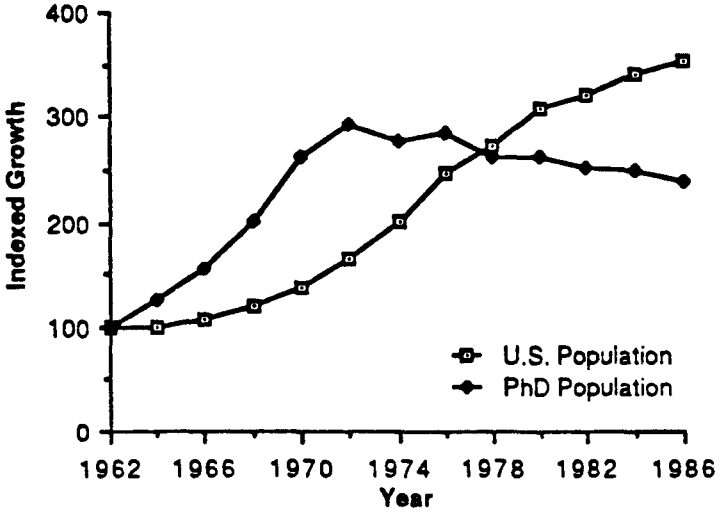
* Percentage based on total reporting definite postgraduation plans (17,215 doctorate recipients in 1977 and 15,981 in 1986).

high but there is some signs that the trend is falling (from 85.4 percent in 1977 to 74.5 percent in 1986). There is always the chance that non citizens with advanced training and education will elect to return to their homelands. Thus, there is a danger for the nation in becoming too dependent on the foreign born as a source of highly trained personnel. It is also a sorry comment on the nation's own educational system that it cannot prepare a sufficient number of citizens to fill these highly paid and relatively job secure occupations. Relatedly, there is also concern being raised that the nation is subsidizing the training of technical human resources for competitor nations. John Diebold, an internationally known business consultant, has seriously suggested that the United States should charge a fee (he suggests $50,000 for every foreign born scientist and engineer who is trained in the United States who returns to his or her homeland to work if they come from industrialized nations such as Japan, Britain, and West Germany).

Thus, immigration is having a dual impact on the labor force of the U.S. At one end of the spectrum it is pouring in persons with little skill or education for whom it is doubtful that there is much need and for whom there is likely to be a high cost. At the other end of the spectrum, the nation is becoming heavily dependent on the foreign born to fill many of its most skilled and technical occupations and from whom the country is clearly benefitting.

At this point in time, the decline in the number of U.S. citizens earning doctorates cannot be attributed to demography (see Table 7). As the National Academy of Sciences has noted, the population pool (i.e., the age cohort for 24 to 35 years of age) has been increasing dramatically over the past twenty years. Hence, the explanation for the decline is tied to the absence

Table 7. Trends In The Number of U.S. and Permanent-resident Ph.D.s and in The Comparable U.S. Population, 1962-1986.



NOTES: Index year = 1962. Comparable U.S. population = 25- to 34-year-olds having 16 or more years of education.
SOURCES: National Research Council and U.S. Department of Commerce, Bureau of the Census.

of a comprehensive national human resource development policy.

The Overall Picture

As a result of the aforementioned developments, the overall labor force participation for the U.S. population reached an all time high of 65.3 percent in 1986. The comparable rate for 1950 was 59.7 percent; for 1960 it was 60.0 percent; for 1970 it was 61.0 percent; and for 1980 it was 64.1 percent.

Never in the country's history have so many persons -- in both percentage and absolute terms -- sought to work. It is likely that both figures will continue to rise for the aforementioned reasons in the decade ahead. As a consequence, the economy of the United States will continue to be under relentless pressure to create sufficient job opportunities for the burgeoning number of job seekers.

The Worrisome Exception

There is, however, one disturbing counter-trend that is buried in the euphoria over the rising labor force participation rate of the overall U.S. population. It has been the persistently lower labor force participation rate of black males relative to white males. Historically through the 1940s, the black male labor force participation rate consistently exceeded that of white males. But since the 1950s, the white male rate has passed the black rate and the gap between the two has widened considerably. By 1986, the white male rate exceeded the black male rate by 5.7 percentage points (76.9 percent to 71.2 percent). The wide gap exists for every age grouping. Indicative of the significance of this decline in black male participation is the fact that the absolute number of black men in the labor force just barely exceeds that of black women (6.3 million black males to 6.2 million black females in the labor force in 1986).

All things being equal, there is no reason why white males should have

significantly higher participation rate for every age cohort than do black males or should have a considerably higher overall rate. But, of course, all things have not been equal. Blacks are clustered disproportionately in the inner cities of 12 major cities plus being scattered over the large geographic area of the rural South. Jobs in these locations are frequently scarce. But jobs are especially hard to find if one has few skills and little education and if there are limited opportunities to acquire or to develop latent abilities. Qualifying for the jobs is made more difficult if there are lingering practices of racial discrimination. It is also likely that the new wave of immigrants -- especially illegal immigrants -- who have also disproportionately settled in inner city areas have increased the competition for jobs at the entry level. Under these conditions, an inordinate number of black males apparently have despaired from seeking work in the regular economy.

There is, of course, an ominous societal implication to these low black male participation rates. If adult black males are not at work, or in school, or in the military, what are they doing to survive? It seems that an urban sub-class of adult black males who function outside the normal labor market has formed and institutionalized its existence through irregular activities such as crime, alcoholism, and drug addiction. Salvaging those black male adults who can be re-attracted into the regular labor market and preventing many black male youths of the present generation from succumbing to a similar fate represents one of the major policy challenges of contemporary times.

Final Thoughts

The continuing growth of the civilian labor has placed the U.S. economy under severe strain to provide a sufficient number of jobs for those who seek them. Moreover, matching job seekers with available jobs is not always

automatic. The rapidly changing composition of the civilian labor force has complicated the matching process. It is anticipated that 80 percent of the labor force entrants for the remainder of this century will be composed of women, minorities, and immigrants. For a number of historical and institutional reasons, members of these groups have usually had difficulty securing the necessary job preparations and receiving fair opportunities to compete for the jobs that are available. Hence, these changes in the size and composition of the labor force dictate that qualitative human resource policies -- such as education, training, retraining, labor information, and labor mobility programs -- become integral components of national economic policy. The traditional reliance on fiscal and monetary policies that focus only on the demand for labor are unlikely to assure satisfactory labor force adjustment. Human resource policies specifically designed to enhance the job qualifications of the emerging supply of labor will be more necessary than ever before. If such policy endeavors are undertaken on an enlarged scale from what currently exists and if they are combined with rigid enforcement of the nation's equal employment opportunity and immigration laws, the prospects for full employment, general prosperity, and domestic tranquility are hopeful. If such steps are not taken and if human resource policies are not given high and immediate priority, the logical consequences are reasons for concern and, possibly, alarm.