Historical Unemployment In Relation to Today

By N Andrews

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What is today's U-6 in comparison to the 30's, apple to apple, no birth/death, etc.? Today's social structure and economic environment are very different from what existed in the first 40 years of the 20th century in the United States. During the beginning of the 20th century, a large percentage of the work force still worked on farms, women were only a small fraction of the work force, and children as young as 14 often worked the equivalent of full time jobs. To add to the situation, no standard methodology for tracking unemployment existed until about 1940. The methods that existed during the 30's were often changed and are not easily compared directly to today's unemployment methodologies. However, data on unemployment was collected since the late 1800's and is available. The challenge is to find a way to compare potentially disparate sets of data in an approximately equivalent manner.

Despite the differences in the composition of the work forces of the early 20th century and the work forces of the early 21st century, I believe that the available data is sufficient to provide an approximate means of comparison. Throughout the comparison there are many aspects that should be considered. One such aspect is that the higher degree of agrarianism in the early 20th century may have provided a means for reducing the negative impacts of unemployment. Even if someone was unemployed in that early period it is much more likely that they were able to produce at least some portion of their own food, unlike someone in 2000 who is unemployed and unfamiliar with producing food for personal consumption even on a hobby garden scale. The structural social differences between then and now are also significant in the composition of the labor force. In the early 1900's only a small portion of women comprised the workforce in comparison to modern levels. Statistics for the same period also included workers as young as 14 years old.

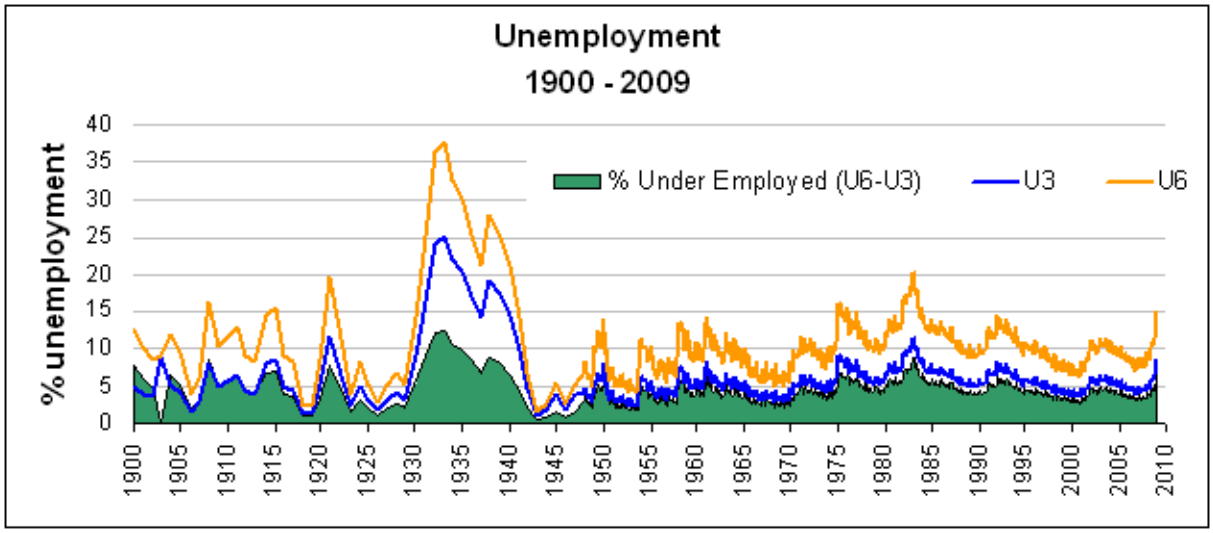
Even with these potentially significant differences in work force structure, a reasonable comparison can be made. If we assume that the existing body of individuals that comprise the total population of potential work force participants in two dissimilar periods or locations are equivalent in terms of labor supply versus labor demand, then a reasonable high level analysis over a period that includes such dissimilar groups may be made. This assumption is based on the premise that the sum of all workers in the early 20th century in the United States were participating in a labor market driven by supply and demand in the same manner as the sum of all workers in the late 20th century. In other words, even though the detailed structure of the 1900's versus the 2000's work forces may have been different, both groups were competing in a market governed by a given set of rules. Even though those rules may have changed over time, the fact remains that employed individuals were able to successfully navigate the market and locate full employment in the terms of that

individual's labor market, while unemployed (U3, U6), under employed, and disaffected workers were not able to achieve full employment in their respective labor markets.

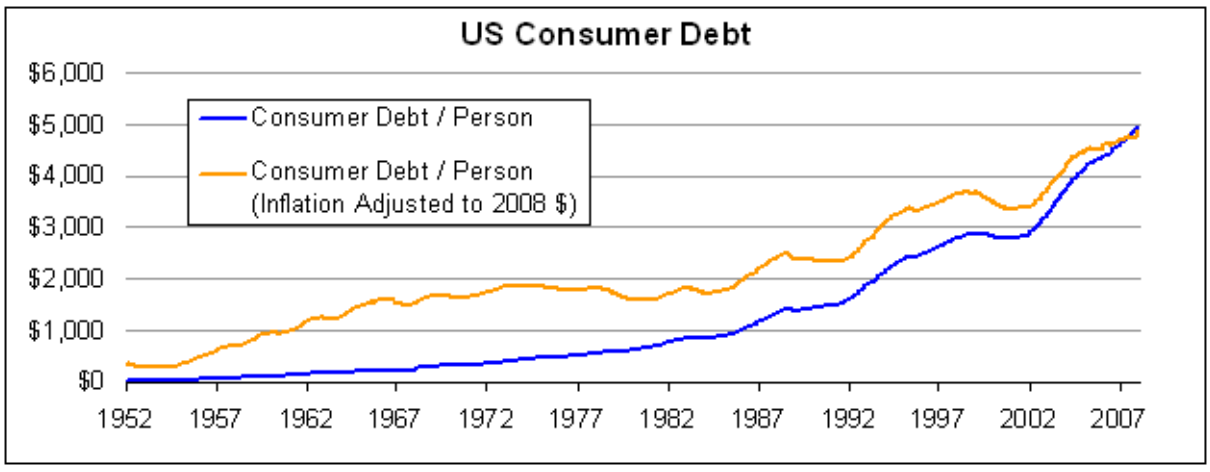
In terms of this analysis, U3 represents "base" unemployment as defined by the US Bureau of Labor Statistics and International Labor Organization (ILO) and U6 represents "total" unemployment, encompassing underemployed individuals, disaffected individuals and similar (see the definitions section for a full description of U3 and U6).

Results

Using the methodology described previously we see that peak U6 unemployment was at an all time high in 1933 at 37% (Figures F & G). The data also suggests that prior to the great depression of the 1930's and WWII that followed, the labor markets and hence unemployment was much more volatile then they have been since. One factor affecting this is likely to be the industrialization of the United States and its subsequent industrial expansion, while a second is the expansion of labor laws and enforcement of labor conditions.



Recent news portrays our current jump in unemployment as a serious event in the marketplace. But from a historical perspective unemployment, whether measured by U3 or U6, while high, is still lower then the two previous post-WWII peaks in the 70's and 80's. Another factor in the degree of harm a given level of unemployment causes in a society is to what degree the majority of the population is leveraged in the form of consumer debt.



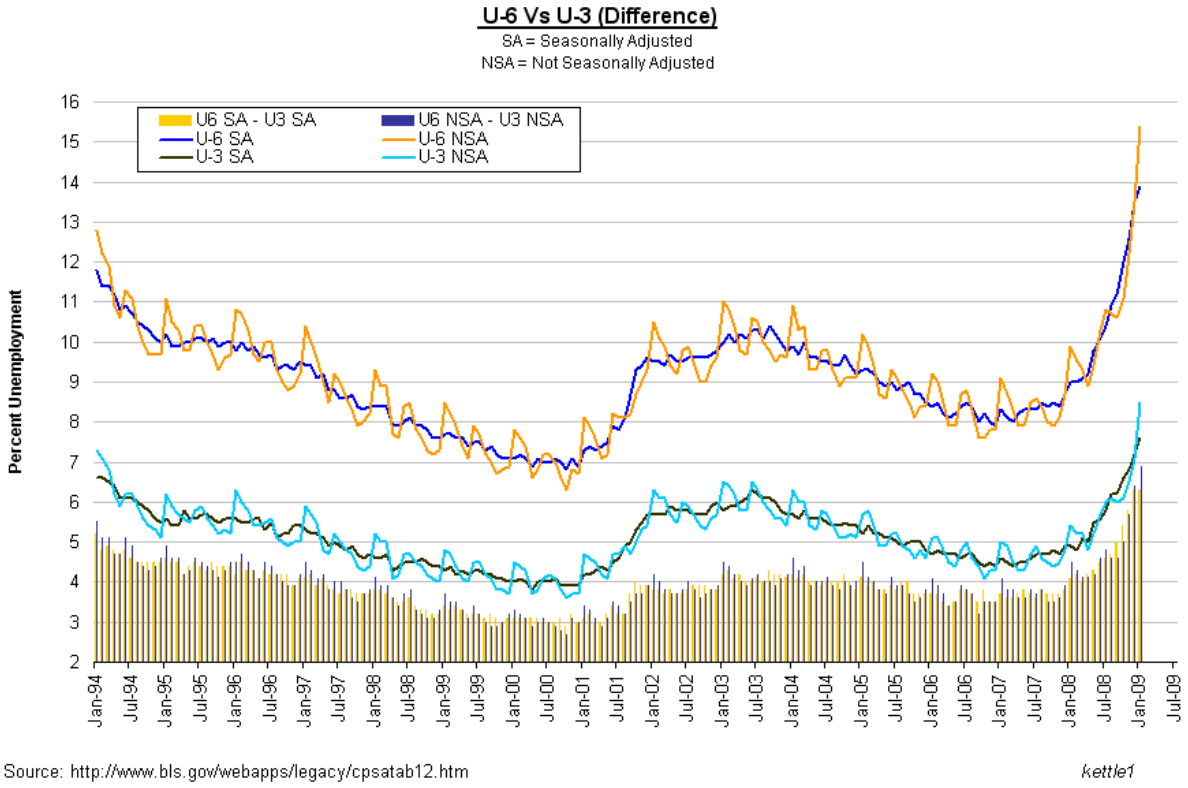
The chart showing US consumer debt shows that over the last 60 years the average American has significantly increased their debt load. Due to this, the impacts of unemployment are rapidly magnified throughout the economy. Such an effect is especially dangerous to any nation dependent on consumerism as opposed to production. While 15% U6 unemployment may not appear as bad as the U6 peaks in the 70's and 80's, the reality may be that 15% U6 unemployment in a highly leveraged consumer economy may be the equivalent of a peak higher then any seen since the 30's given the rapid debt expansion and shift to a service and consumer economy that has occurred in the United States over the last 20 years.

The last time the United States was highly leveraged on a personal and market level while experiencing a period of high unemployment, we were beginning the Great Depression.

Data Analysis

U3 Versus U6:
The current definitions of U3 and U6 unemployment were instituted in 1994 by the BLS. Using the available data sources we can compare U3 to U6 and see if there is any standard relation between the two factors.

Figure A (U6 Vs U3)



The chart showing U3 and U6 plotted in relation to one another would seem to suggest a correlation between the two factors (Data calculations). A comparison of the two data sets will show that (U6 = U3 * 1.77) over the entire data set for 1994 - 2009. The standard deviation of the difference between the given U6 data set

and the calculated U6 data set (U3 data set * 1.77) was 0.28. The fit of the calculated U6 (U3*1.77, where this value = $U6_C$) can be seen in the following charts:

Figure B (U6 Vs U6c SA)

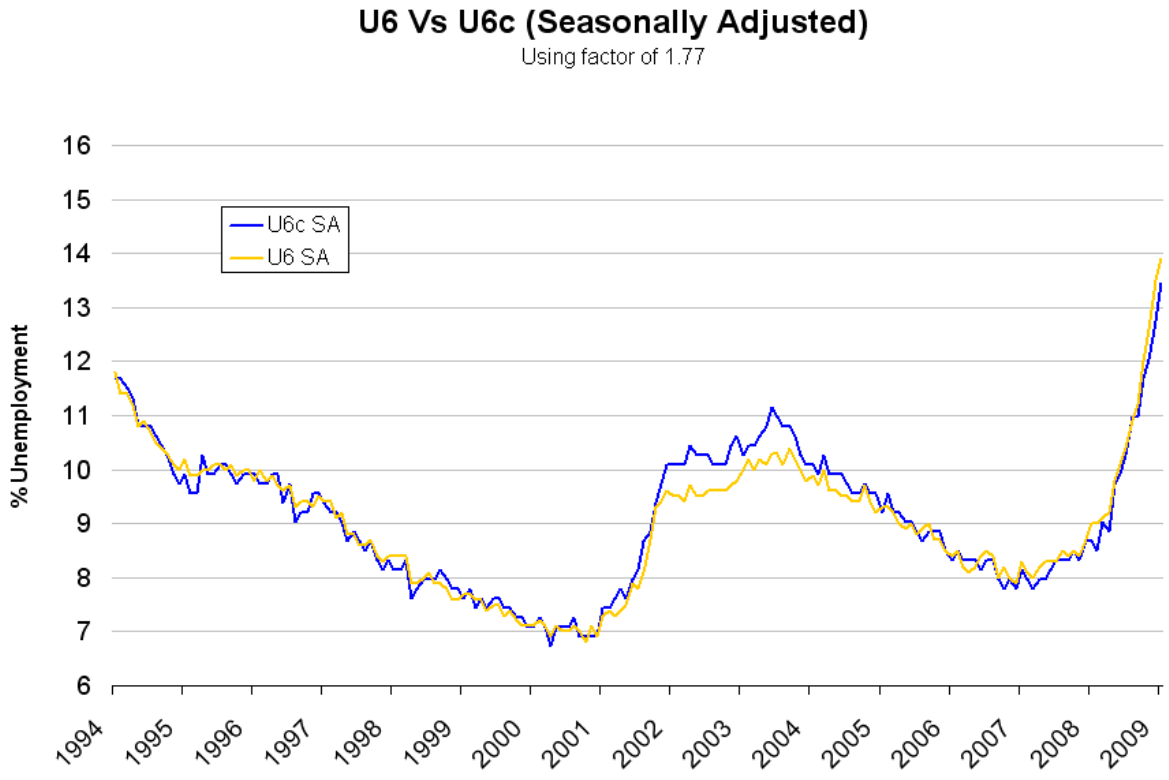
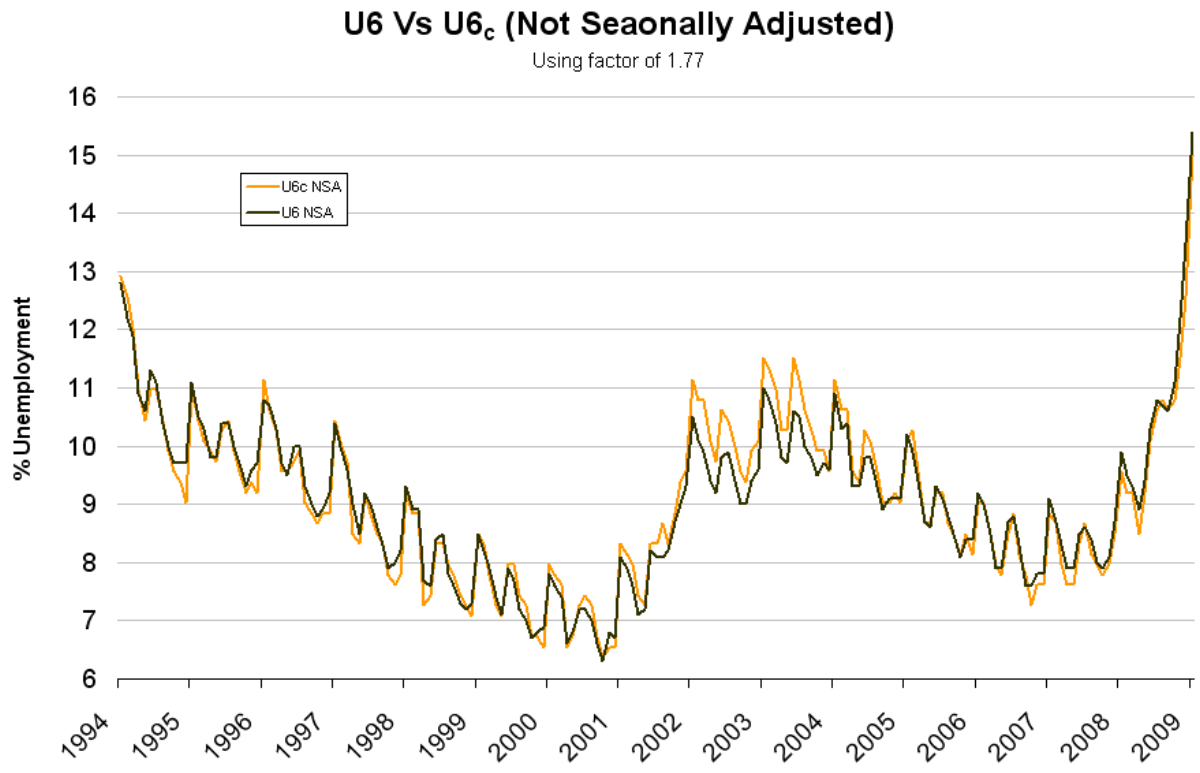


Figure C (U6 Vs U6c NSA)



The multiplicative relation between U3 and U6 seems to be very tight. To get an idea of what the modern unemployment indicator U6 would have been throughout the period of 1948 - 2008 we can use the multiplicative relation during this period to back-cast U6 for the entire period. Modern U3 data is only available for the period of 1948 to present. For the period of 1900 - 1948 we must use the data from alternative sources. For the period of 1900 - 1947 we have two unemployment statistics available, Unemployed Non-Farm employees and Unemployed Civilian Workforce. These two data sets pose a challenge as they were developed during a period of ever-changing data collection methodologies. The data in the sets has been adjusted by the sources listed in *Bicentennial Edition: Historical Statistics of the United States, Colonial Times to 1970* in an attempt to sync the data sets with the methodology that was put in place as of 1940 and was the basis for methodologies since.

We can compare the two available data sets (Figure D and E) and we see that the Unemployed Non-Farm employees and Unemployed Civilian Workforce measures of unemployment appear to be a close analogue of modern U3 (Unemployed Civilian Workforce) and U6 (Non-Farm employees). The modern versions of U6 and U3 are related by a factor of approximately 1.77 and the 1900 - 1940 U3 and U6 components appear to be related by a factor of approximately 1.66. Using this correlation we can assume that U3 (Unemployed Civilian Workforce) and U6 (Non-Farm employees) are close enough to modern measures of unemployment to allow them to provide a usable data source for the period covered.

Figure F shows unemployment for the period 1900-2009 using (Unemployed Civilian Workforce) and (Non-Farm employees) data for the period 1900-1947, back-cast U6 data generated using the 1.77X correlation and the official U3 data for the period 1948-1993, and published U6 data for the period 1994 - 2009.

Figure G shows the same data as figure F with the addition of an "underemployment factor". This measure is simply U6-U3 and is meant to show an approximation of the percentage of the labor force that is under employed, employed at a level below what the individuals in this labor market segment might otherwise wish to acquire.

Figure D (1900-1947 Unemployment Measurement Comparison Data)

	Unemployment		
	Civilian Labor Force	Non-Farm Employees	(Non-Farm Employees) - (Civilian Labor Force)
1900	5.0%	12.6%	2.52
1901	4.0%	10.1%	2.53
1902	3.7%	8.6%	2.32
1903	8.9%	9.0%	1.01
1904	5.4%	12.0%	2.22
1905	4.3%	9.5%	2.21
1906	1.7%	3.9%	2.29
1907	2.8%	6.0%	2.14
1908	8.0%	16.4%	2.05
1909	5.1%	10.3%	2.02
1910	5.9%	11.6%	1.97
1911	6.7%	13.0%	1.94

1912	4.6%	9.0%	1.96
1913	4.0%	8.2%	2.05
1914	7.9%	14.7%	1.86
1915	8.5%	15.6%	1.84
1916	5.1%	9.1%	1.78
1917	4.6%	8.2%	1.78
1918	1.4%	2.4%	1.71
1919	1.4%	2.4%	1.71
1920	5.2%	8.6%	1.65
1921	11.7%	19.5%	1.67
1922	6.7%	11.4%	1.70
1923	2.4%	4.1%	1.71
1924	5.0%	8.3%	1.66
1925	3.2%	5.4%	1.69
1926	1.8%	2.9%	1.61
1927	3.3%	5.4%	1.64
1928	4.2%	6.9%	1.64
1929	3.2%	5.3%	1.66
1930	8.9%	14.2%	1.60
1931	16.3%	25.2%	1.55
1932	24.1%	36.3%	1.51
1933	25.2%	37.6%	1.49
1934	22.0%	32.6%	1.48
1935	20.3%	30.2%	1.49
1936	17.0%	25.4%	1.49
1937	14.3%	21.3%	1.49
1938	19.1%	27.9%	1.46
1939	17.2%	25.2%	1.47
1940	14.6%	21.3%	1.46
1941	9.9%	14.4%	1.45
1942	4.7%	6.8%	1.45
1944	1.1%	1.7%	1.55
1945	1.9%	2.7%	1.42
1946	3.9%	5.5%	1.41
1946	1.9%	2.7%	1.42
1947	3.9%	5.4%	1.38
		Average	1.73
		Median	1.66
		Stdev	0.32

Figure E (1900-1947 Unemployment Measurement Comparison)

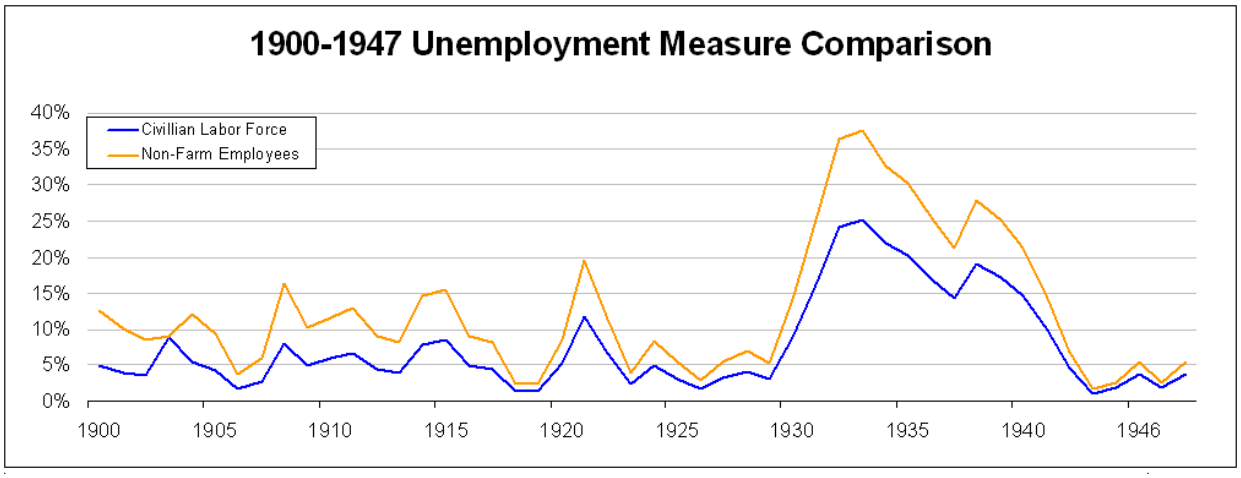


Figure F (U3 and U6 Unemployment 1900 - 2009)

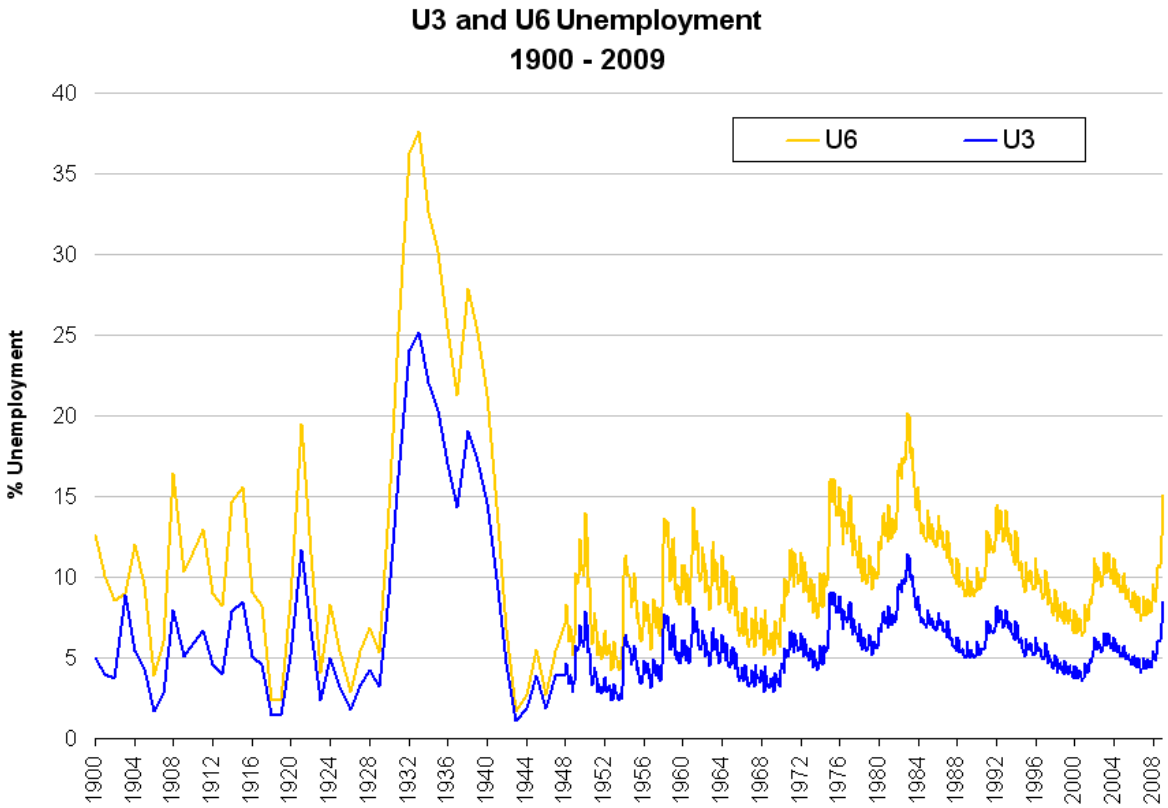


Figure G (U3 and U6 Unemployment 1900 - 2009)

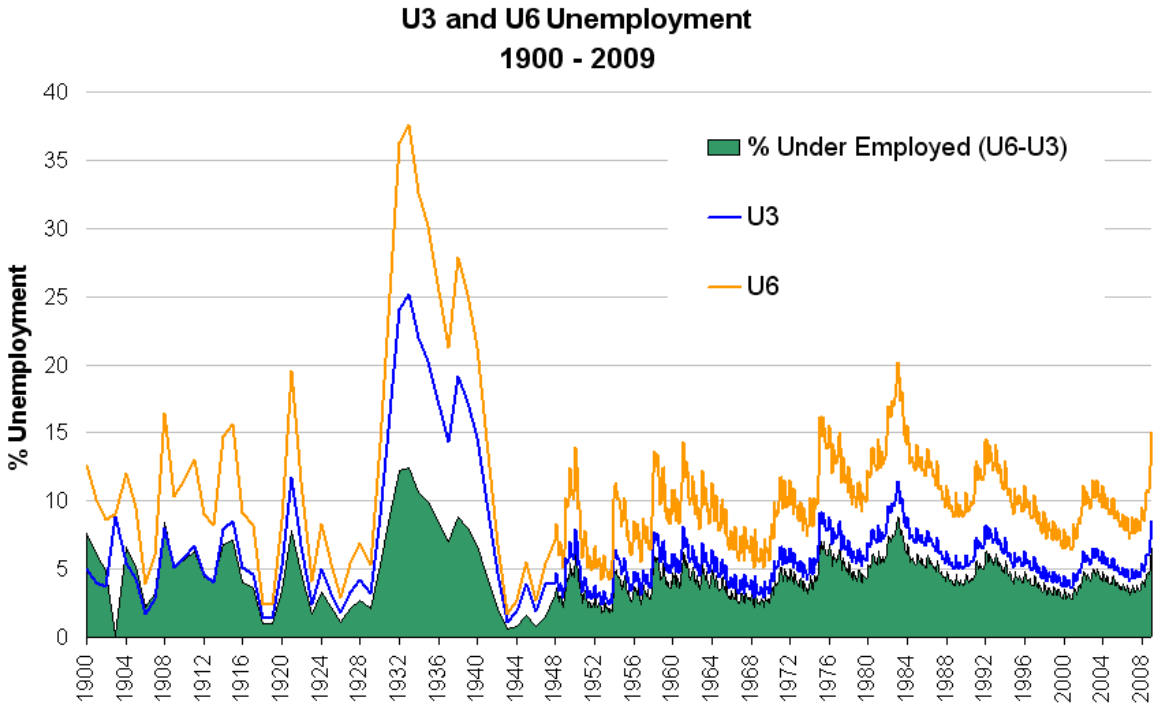
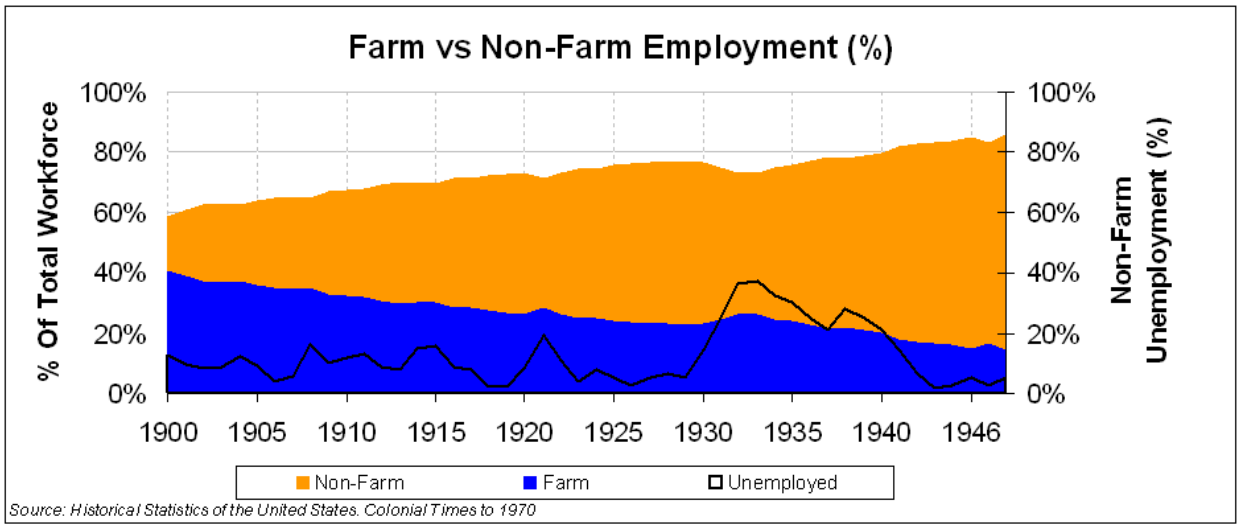


Figure H (Farm vs Non-Farm Employment, 1900-1947)



Definitions

- **U-1** Persons unemployed 15 weeks or longer, as a percent of the civilian labor force
- **U-2** Job losers and persons who completed temporary jobs, as a percent of the civilian labor force
- **U-3** Total unemployed, as a percent of the civilian labor force (official unemployment rate)
    - Unemployed persons. All persons who had no employment during the reference week, were available for work, except for temporary illness, and had made specific efforts to find employment sometime during the 4-week period ending with the reference week. Persons who were waiting to be recalled to a job from which they had been laid off need not have been looking for work to be classified as unemployed.
- **U-4** Total unemployed plus discouraged workers, as a percent of the civilian labor force plus discouraged workers
- **U-5** Total unemployed, plus discouraged workers, plus all other marginally attached workers, as a percent of the civilian labor force plus all marginally attached workers
- **U-6** Total unemployed, plus all marginally attached workers, plus total employed part time for economic reasons, as a percent of the civilian labor force plus all marginally attached workers
- **Marginally attached workers**: Persons who currently are neither working nor looking for work but indicate that they want and are available for a job and have looked for work sometime in the recent past. Discouraged workers, a subset of the marginally attached, have given a job-market related reason for not currently looking for a job. Persons employed part time for economic reasons are those who want and are available for full-time work but have had to settle for a part-time schedule. For further information, see "BLS introduces new range of alternative unemployment measures," in the October 1995 issue of the Monthly Labor Review.

Data Sources and Quality:

1 The 2009 Statistical Abstract
(http://www.census.gov/compendia/statab/)

2 Bicentennial Edition: Historical Statistics of the United States, Colonial Times to 1970
(http://www.census.gov/prod/www/abs/statab.html)

3 BLS introduces new range of alternative unemployment measures

(http://www.bls.gov/opub/mlr/1995/10/art3abs.htm)

From 1940 to 1994 the official unemployment statistics that were generated through a direct statistical survey generally used the following principle for determining unemployment:

As measured via the CL'S, the employment status of individuals is determined solely by their work-related and job- search activities during a specific reference week. In essence, persons who did any work at all during the reference week are counted as employed, while those who did no work, but who searched for ajob (sometime in the 4 weeks prior to the survey) and were currently available to take one had it been offered, are classified as unemployed. Those who met neither test are "not in the labor force." **3**

From: Bicentennial Edition: Historical Statistics of the United States, Colonial Times to 1970 in regards to data sources used.

Chapter D
Labor

Labor Force (Series D 1-682)

*D **1—74.** General note.*
The conceptual structure and techniques for measurement of current labor force data were developed during the late 1930's by the Work Projects Administration (see John N. Webb, "Concepts Used in Unemployment Surveys," Journal of the American Statistical Association, March 1939). However, prior to 1940, especially during the 1930's, the economically active sector was differentiated on the basis of its ability and willingness to work. Thus, most surveys during the 1930's counted as unemployed those persons not working but "willing and able to work." Willingness and ability, however, turned out to be extremely subjective in practice, and since these concepts were dependent on the attitudes of the persons involved, it was difficult to compile data on a comparable basis from place to place and from time to time.
The estimates shown here, prior to 1940, were prepared on as comparable a basis as possible with the concepts used since 1940. For the techniques used in preparing these data, see their source. In contrast, the decennial census data shown here are not directly comparable with annual data because of differences in collection techniques, time reference, and other factors.
For another set of labor force estimates, 1890—1950, see Clarence D. Long, The Labor Force Under Changing Income and Employment, National Bureau of Economic Research, New York, 1958, appendix tables A-4, A-6, and A-20.
The concepts and procedures used since 1940 are based principally upon an individual's actual activity, that is, whether he was working, looking for work, or doing something else during the time reference of the survey. Instead of questions about a person's attitudes with respect to his labor market status (e.g., "Are you able to work?" or "Are you willing to work?" or "Do you want work?"), the present concept makes labor market participation depend on the more overt test of working or actively seeking work.
Current labor force data are collected for the week containing the 12th of each month f or the Bureau of Labor Statistics by the Bureau of the Census as a part of the latter's Current Population Survey. The Survey is based on a scientifically designed sample of households in 461 areas (1966—1970), with coverage in every State and the District of Columbia. From May 1956 through December 1966, the sample covered 330 areas, all of which were continued in the new and expanded sample. From January 1954 through April 1956, the sam- pie covered 230 areas and, prior to 1954, the interviewed households were concentrated in 68 sample areas. The number of households interviewed totaled about 35,000 from May 1956 until January 1967, when it was raised to about 47,000. Before May 1956, a total of about 21,000 household interviews were conducted monthly.
The household interview method (population approach) involves direct enumeration and interrogation of individuals to obtain information on employment activity from workers or members of workers' households. This approach encompasses direct enumeration of all employed and unemployed persons including the self-employed, unpaid family workers, domestic servants, and others who do not ordinarily appear on the

payrolls of any establishment. For a more detailed description of the concepts, techniques, estimation procedures, and adequacy and reliability of these data, see Bureau of the Census, Current Population Reports, series P-23, No. 22.
Labor force data have also been collected in the decennial censuses

of population. The sample size for labor force data has varied from census to census (e.g., 20-percent sample in 1970, 25-percent sample in 1960). Also, the concepts have changed over time in a manner corresponding to the Current Population Survey. (See the Decennial Census reports cited for series D 11—25.)
In the surveys and censuses conducted by the Bureau of the Census, persons are currently classified with regard to employment status by the following criteria.
Employed persons comprise: (a) All those who, during the survey week, worked at all as paid employees, in their own business or profession or on their own farm, or who worked 15 hours or more as unpaid workers in an enterprise operated by a family member; and (b) all those who were not working but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, labor-management dispute, or personal reasons, whether or not they were paid by their employers for the time off, and whether or not they were seeking other jobs.
Each employed person is counted only once. Those who hold more than one job are counted in the job at which they worked the greatest number of hours during the survey week. Included are employed citizens of foreign countries, temporarily in the United States, but not living on the premises of an Embassy. Excluded are persons whose only activity consisted of work around the house (such as own home housework and painting or repairing own home) or volunteer work for religious, charitable, and similar organizations.
Unemployed persons comprise all persons who did not work during the survey week, who made specific efforts to find a job within the past 4 weeks, and who were available for work during the survey week except for temporary illness. Also included as unemployed are those who did not work at all, were available for work, and (a) were waiting to be called back to a job from which they had been laid off; (b) were waiting to report to a new wage or salary job within 30 days.
The civilian labor force (persons 14 years old and over through 1966 and to persons 16 years old and over thereafter) is the sum of the employed and the unemployed. Data on the size of the Armed Forces (except for decennial data) is obtained from the Defense Department and added to the civilian labor force to provide the total labor force figures.
Persons not in the labor force include all persons 14 years old and over (or 16 years old and over) not classified as employed, unemployed, or in the Armed Forces.
The foregoing criteria or concepts of measuring employment and unemployment include several revisions made in January 1967 by the President's Committee to Appraise Employment and Unemployment Statistics. The principal revisions are as follows:
a. A specific jobseeking activity within the past 4 weeks must be reported in order to have a person counted as unemployed. Previously, the household interview questionnaire was ambiguous as to the time period for jobseeking, and there was no specific question concerning methods of seeking work.
b. A person must be currently available f or work in order to be counted as unemployed. This revision in concept primarily affects the classification of students, who, for example, begin to look for work in the spring when they may not be available until June. They were previously counted as unemployed but are now classified as not in the labor force.

c. Persons with a job are classified as employed, even though they were absent from their jobs in the survey week and were looking for other jobs. Previously, persons absent from their jobs because of strikes, bad weather, etc., who were looking for other jobs were classified as unemployed.
d. The new definition of unemployment excludes those who would have been looking for work except for the belief that no work was available (theoretically counted in the past, but without explicit questions).

Historical data have not been revised to take account of these changes because the differences between the old and the new series are relatively small. For most analytical purposes, the data may be regarded as reasonably comparable. The table below presents comparisons for employment status in 1966, by sex and age. Additional tables comparing the published figures for 1966 on an annual average basis with the

estimates derived from the new definitions and procedures appear in Bureau of Labor Statistics Employment and Earnings and Monthly

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P **1—10.** Labor force and its components, 1900—1947.

Source: Stanley Lebergott, *Manpower in Economic Growth: The American Record Since 1800,* table A-S. (Copyright 1964; used with permission of McGraw-Hill Book Co., New York.)

Lebergott's estimates are designed to be comparable with those of the Current Population Survey. That survey, conducted by the Census Bureau, with its labor-force data presented by the Bureau of Labor Statistics (BLS) provides the continuing official source of reliable data on these subjects. Hence, Lebergott seeks to link to the levels it provides for the years since 1940, when it began. However, the Survey estimates are not wholly consistent with the decennial census levels for 1940. Lebergott's estimates, in consequence, will be at variance with studies tied to decennial census figures. Because the Survey estimates are not consistent with the farm-employment series of the Department of Agriculture, nor with the employees in nonagricultural establishment series of the Department of Labor, Lebergott's series will also not be consistent with them. See source pp. 355—420. Lebergott's methods may be briefly described as follows: Preliminary annual labor force and employment estimates were derived by interpolating between detailed worker rates in the census years, and applying the resultant series to un-