

**Collecting and Using Labor Force Statistics
with an Application to the Amount and Duration of Unemployment**

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Master's Paper

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1. Introduction

Uzbekistan, as an emerging country, understands that the work of gathering, compiling, analyzing and distributing prompt and accurate information about its social and economic development is a crucial factor for economic prosperity. The data quality affects the ability of officials to set public policies responsive to actual conditions and prospects as well as private businesses to gauge their market and its growth. Uzbekistan recognizes that its Statistical System requires an urgent overhaul. It no longer fully reflects the profound changes in Uzbekistan's economy nor meets the needs of those in the public and private sectors working to make economic liberalization succeed.

Acknowledging those deficiencies, this paper is aimed to contribute to the improvement of labor force statistics in the country. The first step would be to develop proper data collection procedure. Thus, an important main task of the paper is to propose the Labor Force Survey Questionnaire for Uzbekistan. It is important to develop some expertise in applying labor force statistics. In light of this need the second task of this paper is to use the United States Current Population Survey data to study two questions: 1) What factors identify the unemployed?, and 2) What factors influence the duration of unemployment?

The paper is organized as follows. First section of the paper gives the definitions of main terms used in labor force statistics. Section 2 provides the definitions need in a study of labor force statistics. Section 3 reviews current situation on collection of labor force statistics in former communist states. Then, I comment about international standards related to the issues of labor force classifications. Section 4 uses the U.S.

Current Population Survey data in address policy questions relating to unemployment. The final section provides brief concluding remarks.

2. Concepts and Definitions

The criteria used in classifying persons on the basis of their labor force activity are as follows: (See BLS,1997; Ehrenberg, 1994; President’s Committee to Appraise Employment and Unemployment Statistics, 1962.)

Employed persons. All those who, during the reference week, (1) did any work at all as paid employees, worked in their own business, profession, or on their own farm, or who worked as unpaid workers in a family-operated enterprise; and (2) all those who did not work but had jobs or businesses from which they were temporarily absent due to illness, bad weather, vacation, child-care problems, labor dispute, maternity or paternity leave, or other family or personal obligations—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, even if they hold more than one job. Multiple jobholders are counted in the job at which they worked the greatest number of hours during the reference week.

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, such as contacting employers, 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.

Duration of unemployment. This represents the length of time (through the day of the interview) that persons classified as unemployed had been continuously looking for work and thus is a measure of an in-progress spell of joblessness. For persons on layoff, duration of unemployment represents the number of full weeks since the end of their most recent period of employment. Two useful measures of the duration of unemployment are the mean and the median. Mean duration is the arithmetic average computed from single weeks of unemployment. Median duration is the midpoint of a distribution of weeks of unemployment.

Reason for unemployment. Unemployment is also categorized according to the reason that individuals were without work. The reasons for unemployment are divided into three main groups: (1) Job losers, persons, whose employment ended involuntarily and who began looking for work; (2) Job leavers, persons who quit or otherwise terminated their employment voluntarily and immediately began looking for work; (3) Persons who completed temporary or seasonal jobs, who began looking for work after the jobs ended;

Usual monthly earnings for paid employees: Data are collected on earnings before taxes and other deductions, and include any overtime pay, commissions, or tips usually received (at the main job in their case of multiple jobholders). The term “usual is as perceived by the respondent. If the respondent asks for a definition of usual, interviewers are instructed to define the term as more than half the months worked during the past 6 months.

Usual hours of work. These statistics relate to respondents’ usual hours of work(at all jobs). In this context, *full-time workers* are those who usually worked 40 hours or

more (at all jobs combined). This group will include some individuals who worked less than 40 hours in the reference week for economic and non-economic reasons and those who are temporarily absent from work. Similarly, *part-time workers* are those who usually work less than 40 hours per week (at all jobs), regardless of the number of hours worked during the reference week. This may include some individuals who actually worked more than 40 hours in the reference week, as well as those who are temporarily absent from work.

Actual hours of work: These statistics relate to the actual number of hours worked during the reference week. For example, persons who normally work 40 hours a week but were off 1 day because of vacation or illness would be reported as working 32 hours, even though they may have been paid for the day of work that they missed. For persons working in more than one job, the figures relate to the number of hours worked in all jobs during the reference week; all hours are credited to the main job.

Multiple jobholders: These are employed persons, who during the reference week, had either two or more jobs as a paid employee, or were self-employed and also worked as a paid employee, or worked as an unpaid family worker and also was employed as a paid worker.

At work part time for economic reasons: Sometimes referred to as involuntary part time, this category refers to individuals who gave an economic reason for working 1 to 39 hours during the reference week. Economic reasons include unfavorable business or economic conditions, slack work, inability to find full-time work, and temporary or seasonal work. In addition, to be classified as involuntary part time, they must indicate that they want and are available to work full time.

At work part time for non-economic reasons. This group includes those persons who usually work part time and were at work 1 to 39 hours during the reference week for a non-economic reason. Non-economic reasons include, for example: Illness or other medical limitations, child-care problems or other family or personal obligations, school or training, retirement, and being in a job where full-time work is less than 40 hours. This group also includes those who gave an economic reason for usually working 1 to 39 hours but said they do not want to work full time or were unavailable for such work.

Unpaid family workers who prefer paid employment: These are workers who said they worked as an unpaid worker in a family-owned business, but preferred to have a paid job. They also had been available to take a paid job during the survey reference week. *Employed persons looking for new work because of low earnings:* These are paid employees who said they have actively searched for a new or additional job in the past 3 months because of low or insufficient earnings. In order to ensure that their earnings are low enough to produce hardship, the wages of these workers must fall below a pre-determined level, say, 1,500 Soms per month, for example.

Marginally attached and discouraged workers: The marginally attached are defined as persons not economically active (neither employed nor unemployed) who want and are available for a job, but are not currently looking. Those marginally attached to the labor force are divided into those not currently looking because they believe their job search would be futile and those not currently looking for other reasons. For discouraged workers, a subgroup of the marginally attached, the main reason for not recently looking for work was one of the following: Believes no work available in line of

work or area; couldn't find any work; lacks necessary schooling, training, skills or experience; employers think too young or too old; or other types of discrimination.

3. Issues in Survey Design

3.1. Collection of Statistics in Emerging Countries

The economic and political reforms in the CIS countries have made it important to introduce reforms in their statistical practices with respect to their measurement of the labor force and its components. (See Bregger, 1998; Chernyshev, 1994; Hipple, 1999; Porket, 1995.) When the revision of labor force statistics started in the CIS countries, it was suggested to restrict the collection of unemployment data to compulsory reports provided by state employment offices. However, the experience of countries with a developed market economy and the first practical steps taken by national statistical institutions in that field made clear that a large number of the unemployed did not register with employment offices. This fact stimulated introduction into statistical practice of regular household Labor Force Surveys (LFSs). Unlike employment offices, household surveys would look into employment issues that would allow more detailed analysis and forecast of unemployment changes in time and the collection of information to supplement the data reported by enterprises and organizations. Moreover, conducting LFSs to study employment and unemployment would make a definite contribution to international comparability of labor statistics in accordance with the requirements set out in the International Labor Organization (ILO) Labor Statistics convention, no. 160.

In this attempt, several seminars were conducted by CIS countries together with ILO Bureau of Statistics. In conducting the surveys, it was recommended that a single

methodology should be used, based on an agreed minimum number of statistical items, which would allow comparison between countries within the territory of the Former Soviet Union and with foreign countries. Based on the decisions of the seminars and along with the ILO's professional help, STATCOM CIS prepared a master LFS questionnaire and a set of recommendations on how to organize and monitor an LFS. The Russian Federation was the first CIS country to carry out a full-scale LFS (early November 1992).

Changes in the labor market and the economy overall made it necessary to develop *National Classifications of Status in Employment* (NCSE). As no such national classification existed in the CIS countries before, the only classification can serve as basis is the *ILO International Classification of Status in Employment* (ICSE), which currently propose the following main groups: employees, employers, own-account workers, unpaid family workers, members of producers' cooperatives, persons not classified by status. ICSE was revised by the 15th International Conference of Labor Statisticians held in January 1993 and its revised version has been cautiously studied by the CIS countries. Apparently, the CIS countries will come up against different problems in developing their NCSE but that should not be seen as a reason to discourage them from this work. Use of this classification will assist in the analysis of changes in the current social configurations in the labor force, which already fall outside the structure of the traditional Marxist subdivisions of labor into manual, non-manual, collective farm, etc.

Countries like Republic of Belarus, the Russian Federation and Ukraine have each developed their own *State Programme for the Transition to the System of Accounting and Statistics Adopted in International Practice*. The ILO, the UN Statistical Office, the

International Monetary Fund, the World Bank, the Organization for Economic Co-operation and Development (OECD) and the Statistical Office of the European Communities (EUROSTAT) are providing wide technical assist to CIS countries to implement these kind of programs.

3.2 Basic Issues in Survey design. (See Chernyshev, 1994; Norwood, 1994; Polivka, 1993.)

One of the basic issues of Survey design is the appropriate measurement of the economically active population. It is essential, that careful attention be paid in questionnaire design and interviewer instructions so as to translate the notion of economic activity into appropriate questions, since the interviewers' and respondents' own subjective understanding of economic activity may differ from the actual concept. This is very basic requirement, because it sets the frame for all subsequent information collected in the course of the interview. A misunderstanding of whether or not certain activities are to be categorized as economic may have permanent impacts on the survey results. Such problems may especially arise in situations when a substantial part of the economically active population is involved in activities other than usual full-time full-year paid employment or self-employment, such as part-time employment, casual work, work remunerated in kind, home-based work, unpaid family work and production for own consumption. In such cases, which is the case of Uzbekistan, additional inquisitive questions or an activity list may prove useful to reduce underreporting.

The 1982 international standards divided the measure of the economically active population into two different measures: the currently active population (labor force), measured based on a short reference period, for example one week or one day, and the

usually active population, measured based on a long reference period, for example a year. We restrict our discussion to the currently active population measure, as it is the most widely used measure of the economically active population.

The measurement of the currently active population is based on the labor force framework. The main feature of the labor force framework is that individuals are categorized based on their activities during a specified short period of time by using a specific set of priority rules. This would result in classification of the population into three mutually exclusive and exhaustive categories: employed, unemployed and not in the labor force (or currently active). In order to ensure that each person is classified into one and only one of the three main categories of the framework, the set of priority rules is implemented. The first step is to identify, among the persons above the specified minimum age, individuals who during the reference period, were either at work or temporarily absent from work; the further stage is to identify among the remaining persons those who were seeking and /or available for work. And the residual is categorized as individuals not in the labor force or not currently active. In this format, priority is given to employment over unemployment and to unemployment over economic inactivity. A person who is both working and seeking work is classified as employed, and a student who is attending school and seeking work is classified as unemployed. One consequence of this rule is that employment always takes superiority over other activities, despite the amount of time spent to it during the reference period, which in extreme cases may be only one hour.

Based on the international standards for designing LFSs and direct examples of questionnaires of various countries, we developed the LFS for Uzbekistan (see appendix).

It has the following fundamental features:

PERIODICITY

The survey is to be conducted on an annual basis.

REFERENCE PERIOD

The reference period is the full calendar week (from Monday to Sunday)

COVERAGE

(a) Geographical: the whole country

(b) Persons covered: All permanent residents aged 15-72 years, including those temporarily absent.

Excluded are:

- Persons on long-term missions (six months and longer);
- Students living in hostels and schoolchildren living in boarding schools;
- Inmates of penal and mental institutions;
- Military personnel (conscripts and career) living in barracks;
- Foreign citizens

TOPICS COVERED

The survey provides information on the following topics: employment (main and secondary), unemployment, hours of works, duration of unemployment, reasons for not being employed, discouraged workers, industry, occupation and status in employment.

Information on the informal sector is provided to the extent that survey respondents report on their activities. As regards underemployment, the only data available are statistics on persons working part-time for economic and other relevant reasons.

DATA COLLECTION

Data are to be collected by interviewing all the members of the household aged 15 and over, preferably, but proxy response is to be admitted. The method to be used is that of the personal visit paid by specially trained interviewers hired part-time-teachers and college students will be particularly encouraged to apply.

Recruitment of interviewers will be performed on the basis of certificates that attest to their high-school graduation. A month before starting the field operations they are to attend a 2-3 day training course. A reference manual will also be at their disposal.

QUESTIONNAIRE DESIGN

Only persons aged 15 and over are to be asked the following set of questions, which are grouped into four modules;

- general questions, principally probing questions, acting as a filter towards one of the following modules;
- questions addressed to the employed persons;
- questions addressed to the unemployed persons;
- questions for persons not economically active;

Questions are direct and use standardized terminology for consistency. Most of them are closed, multiple choice, and pre-coded.

4. Using Labor Force Statistics: An Application to US Unemployment

We use the US Current Population Survey to address two questions: (1) who is unemployed and, (2) what determines the duration of unemployment. We divide data into four different cohorts to see how determinants vary across different sex and race. These cohorts are White Males, Non-white Males, White Females and Non-white Females. We used 1994 CPS which contains 1993 income, because the unemployment rate was the highest in 1993 for last ten years. And we think using the year with higher unemployment rate would give us better results in terms of answering the questions we intend to address in this section. We excluded from our data people aged over 55, children, armed forces and NIU.

Descriptive Statistics

Table 1 summarizes the descriptive statistics for the important variables in all four cohorts for both the employed and unemployed samples. The variables we selected for the study are based on human capital model. In 1993 the average unemployment rate was 7.4 percent. In our sample we find the following unemployment rates: white males, 6.5 percent, non-white males, 8.8 percent, white females, 4.2 percent, and non-white females, 6.0 percent. The result that female unemployment rates are less than male rates is consistent with the general trend that employment is growing in sectors such as services that employ proportionately more females, and it is falling down in manufacturing, in which proportionately more males have been historically employed. Duration of unemployment is very similar between white and non-white males (about 14.7 weeks), whereas it is higher for non-white females by more than two weeks compared to white females (13 versus 15 weeks).

Table 1 shows that employed persons, on average, have higher family income than unemployed persons in all four groups. For example, average employed non-white male has family income of \$41,442, whereas unemployed non-white male has family income of only \$29,545. The same pattern holds for the previous year's personal earnings; the employed have higher earnings last year than the unemployed.

In terms of geographic location, white males and females, both employed and unemployed, are located almost evenly across the country, while high percentage of their non-white cohorts, both employed and unemployed can be found in the South. The table also indicates that white males are more likely to be employed if they live in South and Midwest. Nonwhites both male and female are more likely to be unemployed if they live in South. White females are more likely to be unemployed if they live in West.

Employed people, on average, tend to have higher level of education than unemployed ones across all four groups. For example, employed white males have 13.4 years of education, whereas unemployed persons of the same group have only 12.3 years of education. Same trend holds for experience variable. As the table shows us, among nonwhite females, average employed person has 16.1 years of experience, while unemployed person has only 12.7 years of experience. In all groups, the unemployed are younger than the employed (e.g., white males employed 35 years old, unemployed 32 years old).

Table 1 also provides the occupational distribution across groups. Operators represent the highest percentage of white males among both employed (19 percent) and unemployed (26 percent). Comparing the two percentages implies that operators are make up a disproportionately large share of the unemployed white males. Agricultural

workers share the same fate; while agricultural workers make up only 6 percent of the white male workers, their share of the unemployed is more than twice as large (13 percent). In contrast to operators and agricultural workers are the executives and professionals who make up 25 percent of the employed but only 10 percent of the unemployed white males.

Among employed non-white males, operators share highest percentage with those who work in service jobs. Among unemployed non-white males, the highest percentage belongs to those men who were mainly involved in agriculture. Like their white male counterparts, non-white male operators and agriculture workers appear more likely to be unemployed than their share of the employed would suggest.

Administrative, Service, and Sales employment are the most popular occupations among both white and non-white females. Among these occupations, Sales and Service workers are more disproportionately unemployed. Professionals and Executives make up 26 percent of the white females employed but only 15 percent of the white female unemployed. Similarly, these occupations make up 22 percent of non-white female employment but only 8 percent of the non-white females without jobs.

Probit Results: Who is Unemployed?

The first question that this research addresses is "Who is unemployed?" Since this is a discrete choice, employed or not, Probit is the correct statistical tool. Table 2 summarizes the main results of four Probit regressions run for each of the four groups. The dependent variable is UNEMPL, which has values only 0 (employed) and 1 (unemployed).

Examining the coefficients in Table 2 we find for white males that as the years of education increase, the probability of being unemployed decreases (education less than eight years is the omitted dummy variable). Same pattern holds for non-white males but for white females the one who has college degree are less likely to become unemployed compare to the one who has higher degree. Table 2 indicates that education appears to play no role in determining the employment status of nonwhite females. It is important to note that this is in contrast to Table 1 which suggests that non-white females are more likely to be unemployed if less educated.

As far as the effect of years of experience on probability of being unemployed, white males with five years of experience are more likely to be unemployed than those with no experience at all. A possible explanation is that those who have no experience, in quest for some experience, are willing to accept lower level jobs which are easier to get. In contrast, those who have some experience look for better jobs, which are more difficult to get. Overall, experience adds to specific human capital making you more productive, consequently, more dear to the employer. Also, unions and even firms themselves tend to honor seniority. Coefficient estimates of experience variable with more than 20 years are negative in all four groups, meaning those with more than 20 years of experience are less likely to be unemployed compare to those who have no experience. One would think that those with high experience have less problems, as well as less possibility to be fired from, in finding jobs than those who have little or no experience at all. Note that absolute value of estimates of this variable for non-white both males and females are much higher than those of white people. We note that the

Probit results for experience are consistent with our observations from the sample means given in Table 1.

North is the omitted variable among geographic location variables. For both white males and females the Midwest and South have negative coefficients at five percent significance level. This means that white people who live in Midwest and South are less likely to become unemployed than those who live in the North. One could explain this is due to fact that North has higher supply of labor force than other regions. Also, there is a trend of capital moving to Sunbelt, making the demand for labor increase in this area. Finally, we note that effect of Southern residence on non-white females. In Table 1 a disproportionate share of the unemployed lived in the South. But this result is not confirmed by Table 2, which suggests that when we control for other factors (education, experience, etc) Southern residence is not a statistically significant determinant of unemployment among nonwhite females. This finding confirms the necessity of a multivariate analysis.

In case of dummy variables for different occupations, variable for service occupations was omitted. As the table shows, the majority of coefficient estimates of these variables have negative sign in all four groups, meaning that people who are in service are more likely to be unemployed than people who are in those occupations. This fact is at least due to the relative high turnover of service employees. But the coefficient for agriculture has positive sign in all groups except non-white females. Agriculture employees are more likely to become unemployed compare to other ones because of existence of high seasonal unemployment in that sector, since demand for agricultural employees declines after the planting season and remains low until the harvest season.

Comparing the occupation results in Table 1 to those of Table 2 we find that there are discrepancies in results for non-white males. Table 1 suggests that executives and professionals are less likely to be unemployed. But when we control for other variables and analyze these variables in isolation, the results suggest that executive and professional status has no effect on probability of being unemployed (Table 2).

Regression results: How long are they unemployed?

The second question this research addresses is: "What factors affect the duration of unemployment?" To answer this question we use OLS regression with weeks unemployed being a dependent variable. The results of these regressions¹ are summarized in Table 3.

As we can see from this table and from Table 2, white males and white females groups have quite a number of significant coefficient estimates, while non-white males and females groups have only a few significant coefficients. This may mean that, human capital model does not work as well, in case of non-whites. It may be due to discrimination at present or past.

Table 3 shows that, for the whites, as years of school increase the coefficient estimates also increase. This means that whites with higher education stay unemployed longer than those who have less education. At least part of explanation could be that people with higher education tend to search for better jobs, which in turn generally requires more time to acquire. Surprisingly, there is no relationship between education and weeks unemployed for either non-white males or non-white females.

¹ An issue not explored in this paper is where there is a selection bias effect as the duration regressions contain only the unemployed.

Same pattern holds for years of experience, again with idea that more experienced people are harder to match to a job. As Table 3 suggests, for whites, the more experience they have the longer their duration of unemployment is. For non-whites, it is true only for higher years of experience. A few years of experience appears to have no effect on duration of unemployment for those cohorts.

As far as regions are concerned, all three regions (for all four groups) have negative signs, which means that people who live outside of the North have a shorter duration of unemployment than those of who live in the North. This is consistent with what we found out from Probit analysis. Here we found that people in north are more likely to be unemployed than any other region at least due to high amount of labor supply in that area. Hence, it is harder to find jobs once becoming unemployed because of increased competition which results from large labor supply.

We do not have many significant coefficient estimates for various occupations and those we have are all positive. It means that people who were in service occupations stay unemployed shorter period of time than those who are in other occupations. This is again consistent with what we found in previous regression. We said that service workers are more likely to be unemployed than those in other occupations because of high employee turnover of former. High employee turnover in this case implies that it is easy to find jobs, hence making the duration of unemployment shorter in service occupations.

5. Concluding Remarks

The empirical part of this paper attempts to analyze who is unemployed and what determines the duration of unemployment in USA using the 1993 CPS data. Analysis of means indicates that employed persons, on average have higher personal earnings as well

as family income. It also shows that white males and females, both employed and unemployed, are distributed almost evenly across the country, while proportionately higher percentage of their non-white cohorts, both employed and unemployed can be found in the South. One of the interesting findings is that means suggests that non-white females are more likely to be unemployed if less educated. But when we hold everything constant by running probit regression, it appears that education has no role in determining the employment status of non-white females. We also found that the Probit results for experience are consistent with our observations from the sample means, which indicate people with higher years of experience are less likely to be unemployed. Another discrepancy between means and Probit is for executive and professional occupational dummies. Means suggest that executives and professionals are less likely to be unemployed in all four groups but probit says that it is not true in case of non-white males.

OLS regression suggests that human capital model may not work as well in case of non-whites. Possible explanation is that discrimination against non-whites at present or past. As far as whites are concerned, it seems like additional year of education and experience has a positive effect on duration of unemployment.

People living in North have longer durations of unemployment than those who live in other regions of the country. We also found that people in service occupations stay unemployed for shorter period of time than those who are in other occupations. We also noted that these findings were consistent with what we found in probit.

In the earlier sections of the paper we discussed collection of statistics in emerging countries. One important fact to point out is that collection of unemployment

data from reports provided by employment offices gives unemployment rates which are highly underestimated. CIS countries began taking some measures to develop more efficient method of collecting unemployment data, such as introducing regular household LFSs. LFS for Uzbekistan we developed in this paper is one those attempts. CIS countries understand that process of statistical transition along with economic one is not a short and easy one and it requires strength and patience.

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Table 1. Means of variables.

Variable name	White male N=32,618		Non-white male N=4,606		White female N=28,556		Non-white female N=4,803	
	Employed	Unempl.	Employed	Unempl.	Employed	Unempl.	Employed	Unempl.
Family income	48,503	34,929	41,442	29,545	47,321	33,908	38,009	21,839
Personal Earnings	28,173	14,354	22,525	10,995	16,958	9,321	16,739	7,871
Age	35.4	32.3	34.7	31.2	35.3	32.1	35.3	31.3
Percent unemployed	--	6.5	--	8.8	--	4.2	--	6.0
Weeks unemployed	--	14.7	--	14.7	--	13.0	--	15.0
North	0.23	0.27	0.19	0.18	0.24	0.26	0.19	0.15
Midwest	0.26	0.23	0.16	0.18	0.26	0.23	0.17	0.18
South	0.28	0.22	0.40	0.44	0.27	0.22	0.42	0.49
West	0.23	0.28	0.25	0.20	0.22	0.29	0.22	0.17
Education	13.4(2.77)	12.1(2.66)	13.2(2.69)	12.0(2.12)	13.4(2.42)	12.4(2.60)	13.2(2.39)	12.6(1.87)
Education of 16+ years	0.25	0.11	0.14	0.04	0.17	0.10	0.15	0.04
Experience	16.1(10.1 8)	14.2(10.3 8)	15.5(10.1 0)	13.2(10.8 9)	15.9(10.3 8)	13.7(10.6 4)	16.1(10.2 0)	12.6(9.90)
Experience of 5 years	0.15	0.22	0.16	0.26	0.15	0.21	0.14	0.24
Executive	0.14	0.06	0.09	0.03	0.12	0.08	0.09	0.03
Professional	0.12	0.04	0.10	0.03	0.16	0.07	0.13	0.05
Technician	0.03	0.01	0.03	0.01	0.04	0.03	0.04	0.02
Sales	0.11	0.08	0.08	0.07	0.13	0.18	0.11	0.17
Administrative	0.06	0.04	0.08	0.04	0.26	0.20	0.25	0.19
Household	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.03
Protective	0.03	0.01	0.04	0.03	0.01	0.01	0.01	0.01
Service	0.08	0.11	0.14	0.16	0.16	0.21	0.21	0.27

Craft	0.05	0.08	0.03	0.06	0.01	0.02	0.01	0.01
Operators	0.19	0.26	0.14	0.16	0.02	0.02	0.02	0.03
Transportation	0.07	0.09	0.08	0.11	0.05	0.10	0.08	0.14
Handle	0.06	0.08	0.08	0.09	0.01	0.01	0.01	0.01
Agriculture	0.06	0.13	0.08	0.19	0.02	0.04	0.02	0.02
Armed Forces	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.01

Source: CPS , 1993

Standard deviations in parenthesis

Table 2. Probit regression results for probability of being unemployed.

Variable name	White male N=32,618	Non-white male N=4,606	White female N=28,556	Non-white female N=4,803
Intercept	-1.14**	-1.08**	-1.20**	-1.91**
8 years of education	0.04	0.29	0.08	0.28
11 years of education	0.06	0.10	-0.06	0.65
12 years of education	-0.15**	0.06	-0.27**	0.64
15 years of education	-0.27**	-0.11	-0.41**	0.52
16 years of education	-0.37**	-0.53**	-0.47**	0.15
18 years of education	-0.42**	-0.81**	-0.42**	0.35
5 years of experience	0.15**	0.04	0.04	0.04
10 years of experience	0.05	-0.16	-0.01	-0.07
20 years of experience	-0.03	-0.30**	-0.15**	-0.18
21 years of experience	-0.12**	-0.37**	-0.24**	-0.40**
Midwest	-0.18**	0.02	-0.12**	0.11
South	-0.24**	-0.03	-0.16**	0.11
West	-0.02	-0.08	0.06*	0.00
Executive	-0.28**	-0.22	-0.11**	-0.37**
Professional	-0.40**	-0.09	-0.32**	-0.29**
Technician	-0.35**	-0.12	-0.15*	-0.19
Administrative	-0.22**	-0.29**	-0.12**	-0.21**
Sales person	-0.20**	-0.03	0.04	0.05
Household	0.15	0.34	-0.03	0.14
Protective	-0.44**	-0.07	0.12	0.05
Craft	0.08	0.21	0.11	-0.20
Operators	0.09**	0.10	0.05	0.02
Transportation	0.03	0.11	0.19**	0.14
Handle	0.08	0.04	0.18	0.10
Agriculture	0.20**	0.36**	0.22**	-0.20
Armed forces	-0.91**	-0.47*	-0.16	0.75*
Log Likelihood	-7,434.31	-1,273.41	-4,773.39	-1,029.07

1= unemployed; 0= employed.

Note: **-significant at 5 % level; *-significant at 10% level. Source: CPS, 1993.

Omitted region: North; Omitted occupation: Service

Table 3. OLS regression results for duration of unemployment.

Variable name	White male N=2,129	Non-white male N=403	White female N=1,200	Non-white female N=287
Intercept	5.83**	11.32*	3.68	19.81
8 years of education	3.73	-1.74	0.69	-14.80
11 years of education	3.93**	-0.74	1.83	-12.78
12 years of education	4.45**	3.33	2.71	-7.36
15 years of education	5.14**	0.27	4.47*	-6.11
16 years of education	6.12**	-0.48	5.02*	-11.75
18 years of education	7.27**	-0.98	10.82**	2.51
5 years of experience	1.86	5.23	3.13*	-1.39
10 years of experience	4.81**	6.22	5.17**	-2.53
20 years of experience	7.35**	6.97*	7.65**	2.89
21 years of experience	8.94**	9.71**	9.94**	8.85**
Midwest	-2.64**	-3.16	-3.15**	-5.42*
South	-3.91**	-4.88**	-3.37**	-1.05
West	-1.74**	-5.71**	-1.66	-2.14
Executive	1.42	4.51	2.73	7.29
Professional	0.04	-3.96	-2.29	0.60
Technician	-0.07	4.08	1.85	13.47**
Administrative	6.36**	0.85	4.18**	4.81*
Sales person	1.89	3.75	0.32	4.50
Household	-8.58	-10.93	-0.40	-0.53
Protective	0.82	-2.64	-1.47	10.42
Craft	0.96	1.38	3.77	13.86
Operators	-0.36	-2.10	5.52**	4.02
Transportation	0.63	-3.29	3.48**	2.70
Handle	-2.00	-2.53	1.42	0.26
Agriculture	0.97	0.22	1.56	-5.20
Armed forces	-8.92	-0.70	7.51	0.01
R ²	0.06	0.07	0.10	0.15

Note: **-significant at 5% level; *-significant at 10% level. Source: CPS, 1993.
Omitted region: North; Omitted occupation: Service

Appendix

Labor Force Questionnaire

Q1. In the LAST SEVEN DAYS, did you do ANY work for pay or profit, even if only for one hour?

- Yes (go to Q5)
- No (Go to Q2)

Objective: This question is intended to measure work-or lack of it-in the survey. Emphasis is on the words “any” and “pay or profit,” with the meaning that, as long as a person worked a few hours during the reference week, this person is to be counted as “employed”.

Q2. In the LAST SEVEN DAYS, did you have a job or business from which you were absent on a short-term basis because of illness, vacation, or some other short-term reason?

- Yes (Go to Q5)
- No (Go to Q3)

Objective: This question is intended to determine if persons who did not work any hours on a job may still be included among the employed. In other words, this question is meant to determine if the person held a job but was temporarily absent due to reasons such as illness or vacation, for example.

Q3. In the LAST SEVEN DAYS, did you do any unpaid work in a family business or farm?

- Yes(Go to Q6)
- No (Go to Q4)

Objective: This question is intended to determine whether person did any unpaid work in a business or a farm owned by a family member. If so, they would be included among the employed.

Q4. In the LAST SEVEN DAYS, did you do any of the following activities?

- a) Any work on your own or the family plot, food garden, or livestock post?
 - b) Any construction or major repair work on your own business, or family plot, or livestock post?
 - c) Any other work for commission or payment in kind, such as piece work for pay, work in exchange for food or housing?
- Yes (Go to Q6)
 - No (Go to Q21)

Objective: This question is intended to elucidate responses on economic activity that may have go unreported in Q1 and Q3 due to a different understanding of the meaning of “work” by the respondent.

Employment-related questions

Q5. I am going to read three work status categories. Which of these three best describes your status on the job?

- Paid employee
- Employer
- Self-employed (All go to Q6)

Objective: This question is intended to determine a person’s work status (or in the US, the person’s “class of worker”). A *paid employee* works for a wage or for a salary. These workers may be considered to be a “hired employee” who is paid to provide labor services to an establishment, enterprise, organization, or even an individual. An *employer*

is a person who is the manager of his or her own business and employs one or more employees. They are very similar to the self-employed who employ other persons to work in their businesses for pay. The *self-employed* are workers who operate shops, businesses, or farms on their own with the goal of purpose of making a profit from the enterprise. These individuals do not hire any workers for pay, but may use family members to work in their businesses without pay.

Q6. In the past week, did you have more than one job, or business, including evening or weekend work?

- Yes
- No (Both go to Interviewer check 1)

Objective: This question is intended to determine if the person had more than one job during the past week (also referred to as “multiple jobholders”).

Interviewer check 1: if answer to Q6 is “no”, ask Q7a; if answer to Q6 is “yes”, ask Q7b.

Q7a. How many hours do you USUALLY work at your job each week?

_____hours (go to Q8)

Objective: This question is directed at those who hold one job and is intended to determine a worker’s usual hours. The term “usual” means more than half the weeks over the past 4 or 5 months.

Q7b. How many hours do you USUALLY work at your MAIN job each week?

(By main job we mean the one at which you worked the most hours.)

_____hours (Go to Q7c)

Objective: This question is designed to obtain usual hours from multiple jobholders on their main job.

Q7c. How many hours do you USUALLY work at your other jobs each week?

_____hours (Go to Q8)

Objective: This question is intended to obtain usual hours from multiple jobholders on their other jobs.

Q8. How many hours did you ACTUALLY work at all jobs in the past week?

_____hours (Go to Interviewer check 2)

Objective: This question is intended to determine the actual number of hours worked in the previous week. This hours figure takes into account whether the respondent missed any work or worked extra hours during the previous week.

Interviewer check 2: if answer to Q8 is less than 40 hours, ask Q9. If weekly hours are 40 hours or more, go to interviewer check 3.

Q9. What is the MAIN reason you worked less than 40 hours during the past week? (DO NOT READ RESPONSES)

(PROBE IF NECESSARY: During the past week, what is your MAIN reason for working less than 40 hours instead of more than 40 hours?)

1. Own illness, injury
2. Vacation/holiday
3. In school/training
4. Did not want more work
5. Strike/labor dispute
6. Job started and ended within past week
7. Business or economic problems
8. Could not find more work

9. Temporary/seasonal work

10. Other reason, specify_____

(Responses 1-6 and 10 go to Interview check 3; responses 7-9 go to Q10)

Objective: This question is intended to determine the reason the respondent worked less than 40 hours during the past week. (full time is defined here as 40 or more hours a week.) Persons who give one of the responses between 7 to 9 (i.e. “Business or economic problems,” “Could not find more work,” or “Temporary or seasonal work”) are then asked if they wanted to work 40 or more hours during the past week. Responses 7 to 9 are considered to be economic-related reasons.

Q10. During the past week, did you want to work a workweek of 40 hours or more?

- Yes (Go to Q11)
- No (Go to Interviewer check 3)

Objective: This question is intended to determine whether respondents who gave an economic-related reason in Q9 wanted to work 40 hours or more during the past week.

Q11. In the past week, could you have worked more than 40 hours if the hours had been offered?

- Yes
- No (Both go to Interviewer check 3)

Objective: This question is intended to determine whether respondents who said “yes” to Q10 were available to work 40 hours or more during the past week.

Interviewer check 3: if answer to Q5 is “paid employee”, ask Q12. All others go to Interviewer check 4.

Q12. In the past 3 months, have you been ACTIVELY looking for other employment?

- Yes (Go to Q13)
- No (Go to Interviewer check 4)

Objective: This question is intended to determine if paid employees have been actively looking for other employment within the past 3months.

Q13. Have you been looking for a new job or an additional job?

- New job
- Additional job (Both go to Q14)

Objective: This question is intended to determine whether a paid employee is looking for either a new or an additional job.

Q14. What is the MAIN reason you have been looking for a new or additional job? (DO NOT READ RESPONSES)

- Do not like job
- Not enough pay/insufficient earnings
- Poor benefits
- Poor working conditions
- Transportation problems
- Too few or too many hours
- Other, specify_____

(All responses go to Q17-Lead in)

Objective: This question is designed to determine the main reason that paid employees have been searching for a new or additional job within the past 3 months.

Interviewer check 4: if answer to Q5 is “unpaid family worker”, ask Q15. All others go to Q17-Lead in.

Q15. Do you want a job that paid you a wage or salary?

- Yes (Go to Q16)
- No (Go to Q17-Lead in)

Objective: This question is intended to determine whether unpaid family workers want a job that paid them either a wage or a salary.

Q16. In the past week could you have started a job that paid you a wage or salary?

- Yes
- No (Both go to Q17-Lead in)

Objective: This question is intended to determine if unpaid family workers could have taken a job as a paid employee during the previous week.

Q17-Lead in. Now I have a few questions about your MAIN job.

Objective: This lead in is to instruct multiple jobholders to report on their MAIN job, that is, the job at which they work the most hours.

Q17. What is the name of the establishment where you are currently employed?

Enter name _____ (Go to Q18)

Objective: The purpose of this question is to obtain the name of the establishment where the respondent is currently employed. This information helps to determine the industry of the worker.

Q18. What kind of work do you do? That is, what is your occupation?

Enter response _____ (Go to Q19)

Objective: This question is intended to obtain the occupation of the respondent.

Q19. What are your usual activities or duties at this job?

(For example: typing, cleaning houses, filing, selling cars, operating a computer, laying brick)

Enter response _____ (Go to Interviewer check 5)

Objective: This question is intended to obtain more information about the respondent's duties on the job which will help verify the occupation given in Q18.

Interviewer check 5: if answer to Q5 is "paid employee", ask Q20.

All others go to end.

Q20. How much do you USUALLY earn per month at your MAIN job before deductions? Include any overtime pay, commissions, or tips usually received?

_____Soms

Objective: This question is intended to obtain earnings data for paid employees. The term "usual" means more than half the months over the past 6 months.

Go to end

Unemployment-related questions

Q21. Were you looking for work during the past 4 weeks?

- Yes (Go to Q22)
- No (Go to Q31)

Objective: This is the key question used to determine if a person is unemployed. The 4-week reference period is used to take into account, for instance, the delay in turnover of job applications.

Q22. What are all the things you have done to find work during the past 4 weeks?

(ASK FOR AND RECORD ALL METHODS THAT APPLY)

ACTIVE

PASSIVE

Contacted:

- | | |
|--|--|
| 1. employer directly/interview | 10. Looked at ads |
| 2. public employment agency | 11. Attended job training programs/courses |
| 3. private employment agency | 12. Other passive |
| 4. friends or relatives | 13. Nothing |
| 5. school/university employment center | |
-
6. Sent out resume/filled out applications
 7. Checked union/professional registers
 8. Placed or answered ads
 9. Other active

(Responses 1 to 9 go to Q23; responses 10-13 go to Q31)

Objective: This question is intended to determine which job search methods were used to find employment. In order to be counted as unemployed, respondents must report at least one active job search method (any response from 1 to 9).

Q23. During the past week, could you have started a job if one had been offered?

- Yes (Go to Q25)
- No (Go to Q24)

Objective: This question is the so-called “availability test”, and is a requirement for a person to be counted as unemployed.

Q24. Why is that?

- Waiting for a new job to begin (Go to Q25)
- Own temporary illness (Go to Q25)
- Going to school (Go to Q31)

- Other/Specify_____ (Go to Q31)

Objective: This question is intended to determine why a person could not take a job in the past week. Persons who give a response of “Waiting for a new job to begin” or “own temporary illness” are to be counted as unemployed. All other responses are skipped to the questions for those “not economically active”.

Q25. Have you ever been employed before?

- Yes
- No (Both go to Q26)

Objective: This question is intended to determine whether an unemployed person had ever worked in the past.

Q26. As of today, how long have you been looking for work?

Weeks_____

Months_____

Years_____ (Go to Q27)

Objective: This question is intended to determine the length of time unemployed persons had been looking for work.

Q27. What is the main reason you are without work?

1. Was dismissed by firm or business, that is, lost job
2. Quit last job voluntarily
3. Temporary or seasonal job ended
4. 4. Could not get job following completion of school
5. other, specify_____

(Responses 1-3 go to Q28. All others go to end.)

Objective: This question is intended to determine the main reason an unemployed person was without work. Only persons who give a response of 1 to 3 are asked follow-up questions concerning the last job they had held.

Q28. What was the name of the establishment where you were last employed?

Enter name_____ (Go to Q29)

Objective: This question is intended to obtain the name of the establishment where the respondent was last employed. This information helps to determine the industry of the person's last job.

Q29. What kind of work did you do? That is, what was the occupation of your last job?

Enter response_____ (Go to Q30)

Objective: This question is intended to obtain the occupation of the respondent's last job.

Q30. What were your usual activities or duties at this job?

(For example: typing, cleaning houses, filing, selling cars, operating a computer, laying brick)

Enter response_____

Objective: This question is intended to obtain more information about the respondent's duties on their last job which will help verify the occupation given in Q29.

Go to end.

Questions for Persons Not Economically Active

Q31. Do you currently want a job?

- Yes (Go to Q32)
- No (Go to Q34)

Objective: This question is intended to determine whether persons, who do not meet the requirement to be classified as employed or unemployed, currently want a job.

Q32. What is the MAIN reason you were not looking for work during the last 4 weeks?

(DO NOT READ LIST)

1. Believes no work available in line of work or area
2. Couldn't find any work
3. Lacks necessary schooling, training, or skills
4. Employers think too young or too old
5. Other type of discrimination
6. Child care problems
7. Family responsibilities
8. In school or other training
9. Ill health, physical disability
10. Transportation problems
11. Other, specify _____ (All go to Q33)

Objective: This question is asked of persons who currently want a job. The question determines the reason the person did not look for work in the past 4 weeks.

Q33. In the PAST WEEK, could you have started a job if one had been offered?

- Yes
- No (Both go to Q34)

Objective: This question is the so-called "availability test". Persons who responded "yes" to Q33 are considered to be "marginally attached" to the labor force; a subgroup of the marginally attached are classified as "discouraged workers" (those who gave one of the response options numbered 1 to 5 in Q32).

I am going to read some categories of labor market INACTIVITY. When I have completed the list, please tell me the category that MOST applies to you as of the past week.

- Student
- Retired from work or career
- Disabled/unable to work
- Taking care of the family or household
- Housewife
- Do not need and/or want a job?

Or, is there some other category? Specify_____

Objective: This question is used to determine which category of labor market inactivity applies to those not economically active. Note that the entire list must be read by the interviewer.

END