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**Methodologies for Defining and Measuring the
Disabled Population and Their Employment
Status in the U.S.: Uses of the American
Community Surveys Data on the Disabled
Population**

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Introduction

In September of 2009, Vocational Econometrics, Inc. requested the Center for Labor Market Studies of Northeastern University to replicate the employment/population ratios of working age adults that are used to derive the Gamboa-Gibson Worklife Expectancy Tables. The Center for Labor Market Studies performed this replication with its own computer code using the 2005-2007 public use microdata sample (PUMS) files from the American Community Survey. The methodologies and data sources used to estimate the numbers, characteristics, and employment status of the nation's disabled working-age population are described in this paper.

To generate labor market outcomes for adults ages 16 and older by their disability status, we first defined the disabled population based on the U.S. Census Bureau's official definition and Vocational Econometrics, Inc's definition of the disabled. According to this definition, an individual will be classified as "disabled" if he or she meets any one of the following five criteria.¹ The information is based on the self-reports of respondents to the American Community Surveys (ACS) and is not tied to the receipt of any cash assistance for the disabled or their participation in any vocational or physical/mental rehabilitation program.

- Person has any of the following long lasting conditions: blindness, deafness, or a severe vision or hearing problem
- Person has a long lasting condition that "substantially limits one or more basic physical activities," such as walking, climbing stairs
- Because of a physical, mental, or emotional condition lasting 6 months or more, this person has difficulty "learning, remembering, or concentrating"
- Because of a physical, mental, or emotional condition lasting 6 months or more, this person has difficulty "dressing, bathing, or getting around inside the home"
- Because of a physical, mental, or emotional condition lasting 6 months or more, this person has difficulty "going outside the home alone to shop or visit a doctor's office"

¹ There is also another category of disability known as "work-related disability". Vocational Econometrics, Inc. does not consider this category of disability while generating labor market outcomes for adults with a disability using the ACS survey.

Individual respondents were allowed to check more than one disability type. There is a fairly high degree of overlap among these disability categories. The estimates of the size and characteristics of the disabled population in the U.S. are based on the findings of the American Community Surveys (ACS) for calendar year 2005, 2006, and 2007. The ACS survey is a national household survey that has been conducted annually by the U.S. Census Bureau since 2000.² The national ACS surveys in 2005, 2006, and 2007 combined completed interviews with nearly 9 million households across the country.

The questionnaire that is used in conducting the ACS survey is quite similar in format to the long form questionnaire that was developed by the U.S. Census Bureau in administering the 2000 Census of Population and Housing. The questionnaire collects detailed information on the demographic and socioeconomic characteristics of each household member (age, gender, race-ethnic group, marital status, educational attainment, school enrollment status, household living arrangements), their labor force status at the time of the survey and their labor market experiences in the prior calendar year, including weeks and hours of employment, their annual earnings from employment, their personal and household income, the sources of their personal and household income, and their poverty/near poverty status.

The findings for the sample of respondents on the ACS questionnaires were converted to population estimates by multiplying each sample member by their sample weight. The U.S. Census Bureau assigns weights to each respondent to allow the sample results to be converted to independent estimates of the size of the population by age, gender, and race-ethnic group.³ The availability of these demographic, socio-economic, and employment data for individual respondents allows us to paint a comprehensive, statistical portrait of the disabled population, to cross-tabulate their characteristics to examine how the incidence of disability problems varies across age and gender/ educational attainment subgroups, and to identify the labor market status of various subgroups of the working-age disabled population at the time of the survey.

We define disabled persons as those who met any of the five above mentioned disability criteria by responding ‘yes’ to one or more of the above questions in the ACS survey. The

² For a more detailed review of the design features and purposes of the American Community Survey, See: U.S. Census Bureau, *Accuracy of the ACS Data (2007)*, web site, www.census.gov/acs.

³ These sample weights also take into account the effects of non-responses to the survey by age, gender, and race-ethnic group.

estimates are restricted to those persons who were 18 to 89 years old and not living in group quarters such as college dormitories, nursing homes, hospices, jails, prisons. We also defined other two disabled sub-groups- the physically disabled and the cognitive disabled. The physically disabled are those who cited having only a physical disability, but none of the other disabilities. The “cognitive disabled” are those who cited having difficulty learning, remembering, or concentrating but none of the other disabilities. Table 1 displays the definition of disability by their types. (See Appendix A for listing of variables used to generate employment estimates for 16-89). The combined three years ACS non-institutionalized persons sample size for 16-89 years old was 6.759 million and those for disabled was 1.102 million. (See Appendix B).

Table 1:
Definition of Disability Used to Generate Labor Market Outcomes for Persons 16-89 in
the U.S. During the 2005-2007 Period

Constructed Variable	ACS Variable Name	Definition
Disabled	ddrs	difficulty dressing (1 =yes)
	deye	vision or hearing difficulty (1 =yes)
	dout	difficulty going out (1 =yes)
	dphy	physical disability (1 =yes)
	drem	difficulty remembering (1 =yes)
Physical Disabled		A physical disability, but not any other types of disability
Severe Physical Disabled		A physical disability and difficulty dressing or difficulty going out
Cognitive Disabled		Difficulty remembering, but no other type of disability
Severe Cognitive Disabled		Difficulty remembering and difficulty dressing or difficulty going out

Respondents (16 years and older) were also asked to identify their labor force activities at the time of the survey. We defined employed persons as those who were, (a) employed, at work, and (b) employed, with a job but not at work due to a temporary illness, vacation, or weather related reasons.

We estimated the employment status of 16-89 years old by their disability status for all, for men and women separately and for each of the following fourteen educational attainment

group. Each person is assigned to the category representing their highest level of educational attainment at the time of the survey:

- Less than 9th grade
- Some high school, but no diploma or GED certificate
- Less than high school
- High school graduates, including GED holders
- Some college, no degree
- Associate's degree
- College less than bachelor's degree
- Bachelor's or higher degree
- Bachelor's degree
- Masters or higher degree
- Master's degree
- Professional or doctorate degree
- Professional school degree
- Doctorate degree

An “employment rate” is calculated for each group by dividing the number of employed by their population size at the time of the survey. The employment rate estimates for the above groups of adults, men, and women were generated for the following fifteen age groups:

- 16-19
- 20-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50-54
- 55-59
- 60-64
- 65-69
- 70-74
- 75-79
- 80-84
- 85-89

A list of the variables used in the extraction of data from the ACS survey and the sample sizes of the three-year file appear in the following brief appendices. If you have any questions regarding this analysis, please contact the Center for Labor Market Studies at 617-373-2242.

**Appendix A: Listing of ACS Public Use Data Variables for Estimating Employment Rates
of 16-89 Year Old By Their Disability Status**

Variable	Variable Definition
PWGTP	Person's weight
REL	Relationship
AGEP	Person's age
SEX	Gender
SCHL	Educational attainment
ESR	Employment status recode
DDRS	Difficulty dressing
DEYE	Vision or hearing difficulty
DOUT	Difficulty going out
DPHY	Physical difficulty
DREM	Difficulty remembering

Appendix B: Combined Sample Size of 16-89 Year Old Persons in 2005, 2006, and 2007

American Community Survey Public Use Files By Disability Status

Group	Person Sample Size*
All Persons (16-89)	6,759,570
Disabled	1,101,822

Note: * Includes only civilian, non-institutionalized persons