



# PITTSBURGH ECONOMIC QUARTERLY

University Center for Social and Urban Research

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## Alternative Measures of Unemployment in the Pittsburgh Region

■ *By Christopher Briem*

While the Business Cycle Committee of the National Bureau of Economic Research (NBER) declared an end to the most recent recession as of June 2009, national and regional labor markets remain distressed by most measures. The national unemployment rate has remained over 9 percent since May of 2009, while the Pittsburgh regional unemployment rate has averaged just over 8.3 percent through the first 10 months of 2010. Both metrics represent multi-decade peaks respectively.

Labor markets are typically lagging indicators to the overall business cycle. Two of the most widely important measures of the state of the labor market include the official unemployment rate and the rates of job creation. We examine a number of these measures and what they imply in this article.

The official unemployment rate, reported each month in the Bureau of Labor Statistics' (BLS) "Employment Situation," is one of the most widely reported and closely watched labor

statistics. The official unemployment rate is the percentage of the civilian labor force that is not employed. While the official unemployment rate has been consistently defined for decades, it is only one possible measure of the state of the labor force.

The official civilian labor force includes those who are currently employed plus those who are not working but are able and available to work and are actively seeking work. The civilian labor force measure excludes people in the armed forces, the institutionalized population, and anyone under 16 years old. It also excludes people who are not working and remain outside the labor force voluntarily, such as many students, retirees, or those who otherwise are not seeking employment by choice.

Other sets of people in the population could potentially enter—or re-enter—the labor force, but are also not included in the official labor force definition. One group of such workers includes persons considered as 'discouraged

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## Vanpooling in Pennsylvania

■ *By Sabina Deitrick and Christopher Briem*

With gasoline on the rise again and congestion lengthening travel time, many commuters are considering alternatives to their drive-alone travel to work. One commute mode that offers ride sharing possibilities for some is vanpooling.

The Urban and Regional Analysis Program at UCSUR has recently completed a report on vanpooling for PennDOT. Results show opportunities for vanpooling in some locales in the state. The study examined the particular features important for expanding vanpooling services and conducted a survey of employers to analyze further conditions and incentives for expanding vanpooling for employees. The results are based on an employer survey in the South Central region of Pennsylvania. UCSUR's Survey Research Center and Qualitative Data Analysis Program collaborated on the project methodology.

A vanpool is a ride sharing arrangement among a group of typically 7–15 passengers who share their ride to work in a common van or small commercial vehicle. Vanpools are organized and run under several different models, and vanpool programs themselves are operated by different agencies, employers, or partnerships of interested parties. For instance, Southwestern Pennsylvania Commission (SPC),

the metropolitan planning organization of the region, operates 43 vanpool groups in its Commute Info vanpool program across the region.

Vanpooling represents a commuting option for workers who typically face longer distance, inter-county commutes on routes not serviced by other forms of transit. Vanpool commuters can save on personal automobile expenses, share a ride with others, and gain time from not driving or sitting in congestion.

Areas benefit from a reduction in commuting vehicles on regional highways, helping to reduce congestion and air contaminants. Employers can benefit from building fewer parking spaces or not expanding parking lots. Employers and workers also have a tax incentive available through the Commuter Choice program, with vanpooling, transit, and other commuting incentives established by the federal government.

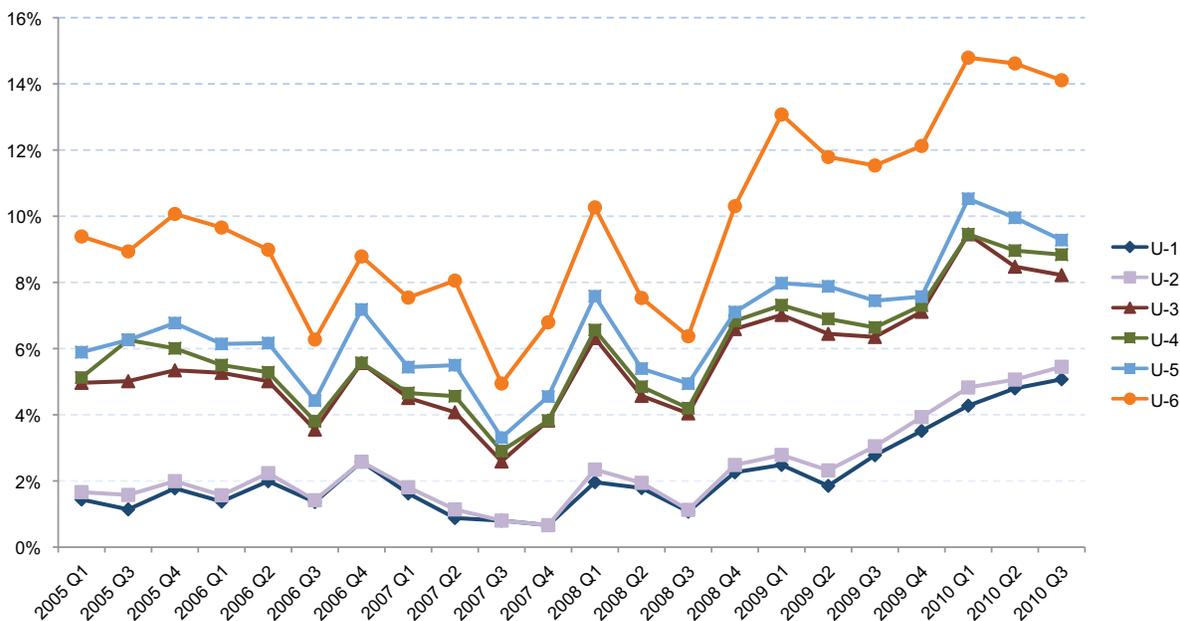
### Vanpooling—Why and When?

Vanpooling expanded quickly in the United States in the 1970s, with rising gasoline prices from the oil embargo creating incentives for increased ride sharing. By the early

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**Figure 1. Alternative Measures of Labor Unemployment by Quarter  
Pittsburgh MSA 2006 Q1 through 2010 Q3**



workers’—individuals who may be available for work, but have ceased looking for employment. Because they are not actively seeking jobs, they are not considered to be part of the labor force as defined for calculation of the unemployment rate.

Other workers excluded from the calculation of the official unemployment rate include marginally-attached workers. These workers are also available for work and would take a job if offered, but have not been looking within the time frame for calculating the labor force as defined above. Another group includes involuntary part-time workers—those workers who would prefer to work full-time, but are instead stuck working part-time.

The BLS, which produces the monthly unemployment rate statistic, has produced alternative measures of unemployment in addition to the official rate each month. The alternatives range from much narrower to much broader definitions of labor force underutilization compared to the official unemployment rate.

There are currently six alternative measures of labor force underutilization, ranging from U-1 through U-6. The specific definitions used for these six measures are shown in Table 1. U-3 is the definition used for the calculation

of the official unemployment rate. U-1 and U-2 are narrower measures of unemployment: U-1 only measures workers who have been out of work for 15 weeks or longer and thus can be considered long-term unemployed while U-2 makes a distinction between those who lost their jobs involuntarily and those who may have quit their most recent job.

The distinction is made between U-1, U-2, and the official unemployment rate because the long-term unemployed and those who lost their jobs involuntarily can be considered to suffer greater economic hardship than those unemployed for shorter periods or those who may have left their previous employment voluntarily.

Broader than the official unemployment rate, U-4 expands the unemployed to include discouraged workers, those workers who report they are able to and desire to work, but who have given up searching for jobs because they believe none are available.

U-5 adds all marginally-attached workers, or those who recently have given up the job search for a range of reasons extending beyond discouragement. These reasons, for example, could include lack of child care or transportation.

The broadest measure of labor underutilization, U-6, includes people working part-time

who would really like to have full-time jobs. These “underemployed” workers may have had their hours cut back by employers, or perhaps they were looking for full-time work and had to settle for part-time.

BLS calculates these alternative unemployment measures quarterly for all states. Comparable regional level measurements are not regularly published by BLS.

However, here we have used data from the Current Population Survey (CPS) to calculate comparable measurements of U-1 through U-6 for the Pittsburgh Metropolitan Statistical Area (MSA). The CPS is a monthly survey of about 50,000 households conducted by the Census Bureau for the Bureau of Labor Statistics. The CPS is the same source used for calculation of official unemployment rate statistics in the U.S.

Figure 1 shows the recent trends for all six alternative unemployment measures for the Pittsburgh region. The increase in the long term unemployed in the region is evident through the latest quarters displayed.

We then compare these various unemployment measures for the full year running from the fourth quarter of 2009 through the third quarter of 2010 for the Pittsburgh MSA to Pennsylvania and the national average (as shown in Table 1).

As with the official unemployment rate, all six alternative unemployment measures are lower for the Pittsburgh region compared to the nation and the state. U-1, the long term unemployed, measured 4.2 percent in the Pittsburgh region compared to 4.8 percent in Pennsylvania and 5.7 percent for the U.S.

For U-6, the broadest measure of unemployment to include those marginally attached to the labor force, the rate for the Pittsburgh region

was 13.7 percent compared to 14.5 percent for Pennsylvania and 16.8 percent for the nation.

How long is unemployment lasting for those actively seeking work? The breakdown of the duration of unemployment in the Pittsburgh region for those currently considered unemployed by U-3, the official unemployment rate definition, is compared to the U.S. averages (see Table 2).

The region currently shows a similar pattern

to the nation with the bulk of the current unemployed out of work for 15 weeks or longer. Both national and regional unemployment have over 60 percent of those officially considered unemployed in this long-term category.

As the economy continues to improve, these rates will decline as the recovery advances, but as these alternative measures show, not all parts of the broadest group of unemployed persons will return to work at the same rates.

**Table 1. Alternative Measures of Labor Underutilization for States, Pittsburgh MSA, Pennsylvania and the U.S., Fourth Quarter of 2009 through Third Quarter of 2010 Averages**

	Pittsburgh MSA	Pennsylvania	United States
<b>U-1, persons unemployed 15 weeks or longer, as a percent of the civilian labor force</b>	4.2	4.8	5.7
<b>U-2, job losers and persons who completed temporary jobs, as a percent of the civilian labor force</b>	4.6	5.3	6.1
<b>U-3, total unemployed, as a percent of the civilian labor force (this is the definition used for the official unemployment rate)</b>	8.2	8.7	9.7
<b>U-4, total unemployed plus discouraged workers, as a percent of the civilian labor force plus discouraged workers</b>	8.5	9.2	10.3
<b>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</b>	9.3	10.0	11.1
<b>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.</b>	13.7	14.5	16.8

Sources: US and Pennsylvania, Bureau of Labor Statistics (BLS), Pittsburgh: compiled from Current Population Survey (CPS) data.

**Table 2. Unemployed Persons by Duration of Unemployment, Pittsburgh MSA and U.S., October 2010**

	U.S.		Pittsburgh MSA	
	Number (thousands)	Percent	Number	Percent
<b>Less than 5 weeks</b>	2,432	17.5%	25,841	23.5%
<b>5-14 weeks</b>	3,037	21.8%	15,966	14.5%
<b>15 weeks and over</b>	8,434	60.7%	68,349	62.0%
<b>Total</b>	<b>13,903</b>	<b>100.0%</b>	<b>110,157</b>	<b>100.0%</b>

Sources: US: Bureau of Labor Statistics (BLS), Pittsburgh: compiled from Current Population Survey (CPS) data.

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1980s, there were more than 20,000 commuter vanpools in the United States. Vanpooling subsequently decreased with lower fuel prices until the late 1990s, when a combination of increased congestion, rising gasoline costs, and federal programs and tax incentives promoted greater vanpool use. Several states, including Washington, have created state vanpooling programs to help to reduce congestion and improve air quality.

In Pennsylvania, vanpooling remains limited (see Figure 1). As of 2008, just over three quarters (76.2 percent) of Pennsylvania commuters were estimated to drive to work alone, virtually identical to the U.S. average of 75.5 percent. Only three vanpool operations in Pennsylvania reported vanpool statistics in 2009 to the National Transit Database, including Southwestern Pennsylvania Commission, the largest agency with vanpool operations in Pennsylvania. SPC's vanpooling program ranked 37th in the nation with 5.6 million vanpool passenger miles. In addition, there are many other vanpools in the state, including private operators and employer vanpools.

The employer survey for this study was developed for the South Central region of Pennsylvania, an area with limited public transit usage and a relatively higher incidence of carpooling. With a large number long distance commuters and transit largely limited to local bus service, South Central Pennsylvania represents a smaller market where many commuters can benefit from alternatives to long distance driving available with vanpooling.

The survey participants were employers in the South Central region of Pennsylvania, contacted through Commuter Services of Pennsylvania and the Susquehanna Regional Transportation Partnership, a nonprofit organization of chambers of commerce and area transit agencies working to improve commuting conditions in the region. A total of 437 employer surveys were returned.

The employer survey focused on a number of critical interrelated issues:

- Employer industry, size, and location
- Commuting patterns among employees
- Provision of parking and other commute costs
- Cost reduction incentives



The survey respondents represented a solid cross-section of firms in the South Central Pennsylvania regional economy and gave good industrial and firm size differences for targeting vanpooling efforts.

Firm respondents, on average, were larger employers—nearly 20 percent of firms employed over 500 people by total firm size. Manufacturing firms (58 responding firms) were more prevalent among the medium-to-larger employers, along with educational services and health care and social assistance.

As reported by firms in the survey, driving alone is by far the most common commute mode for persons traveling to work. Four-fifths of the firms surveyed reported that 90 percent or more of their workers commuted to work by driving alone, and a significant number of firms—38 percent of respondents—reported that 100 percent of their employees drove to work alone.

Employees at smaller sized firms were far more likely to drive alone than employees at the largest establishments. Two-thirds of firms with fewer than 25 employees reported 100 percent of their workers driving to work alone.

Conversely, workers at larger firms were much likely to take public transit than workers at smaller firms. Two-thirds of firms with more than 500 workers reported at least some share of their workers commuted by public transit.

Fully one-third of respondents reported at least some of their employees engaged in carpooling for their work trips. The prevalence of carpooling was also positively related to size

of firm, with 70 percent of the largest establishments—500 employees—reporting some carpooling to their establishment.

These results across various modes confirm that employees at larger sized establishments are less likely to drive alone to work than employees at smaller establishments and are more likely to commute by various other modes, including biking, walking, and carpooling.

To focus on potential employer support of vanpool program choice, the survey results were modeled to estimate a binomial model of choice of vanpool versus all other modes of transportation. Because the cost of using each mode of transportation varied widely across the region and was not requested in the employee survey, the cost variables were constructed based on a set of assumptions. The key question here was to gain a greater understanding of the factors that could potentially induce employers to support or sponsor vanpool operations at their firms. To get at this question a model of the survey responses was constructed to predict the answer to the question: "Would your firm consider sponsoring vanpooling for employees?"

While the ideal model would predict what factors lead to actual vanpool formation, the number of respondents who indicated that their firms have operating vanpools was so low (five firms) as to preclude such a predictive model.

Therefore, the model developed examined factors related to greater likelihood of considering or adopting vanpooling in the future. The model was tested using logistic regression

analyses, where predictive variables were selected using bivariate Chi-Square tests of potential predictors across the five outcomes.

Variables consistently related in the bivariate tests were selected as model predictors. These include employees working overtime, telecommuting, adequate parking, adequate public transit, and the relation between the availability of transportation options and employee recruitment.

The regression results confirm important issues about vanpooling. Larger sized establishments were positively related to all dependent variables above and significant (except the state task force on vanpooling with  $p$  value = 0.06), suggesting that size is one of the singularly important factors related to support of vanpooling in the South Central Pennsylvania region.

This is not to suggest that this finding is universal; indeed, we know from other research and results from SPC's CommuteInfo program that dense, urban locations can be vanpool destinations for long distance commuters. Nonetheless, in a region with large employers and long distance commuters, firm size matters.

The relation between the availability of transportation options and recruiting employees was also positively related to the dependent variables in all the models. Thus for many firms in South Central Pennsylvania, it is not sufficient to say current transportation patterns are adequate.

Transportation availability is important for firms to recruit new employees and is significantly related in all the models above;

vanpooling clearly can be part of the palate of options.

Results on overtime are somewhat in conflict with existing literature, with overtime—and especially unscheduled overtime—generally negatively associated with vanpooling prospects. Results from the models gave a positive relation. It could be that the two were viewed as somewhat related by survey respondents or that, lacking experience with vanpooling and establishing vanpool groups, survey respondents have not encountered overtime as a hindrance to vanpooling. The results are comparable across the model specifications.

The survey and regression analyses point to a number of conclusions that underscore our knowledge of vanpooling in general and the conditions in South Central Pennsylvania in particular.

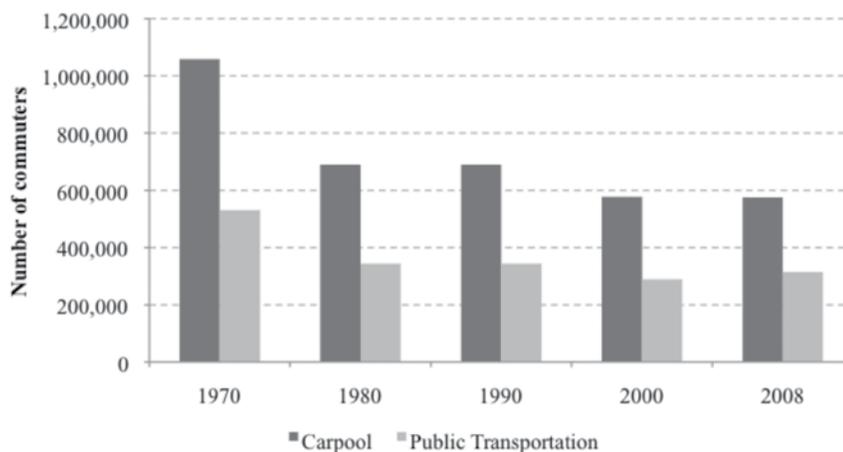
- Size matters: Regardless of the form of the question, the larger the firm, the greater the support for vanpooling. Larger firms were also more closely linked to support for additional incentives developed by the state for vanpooling and ride sharing services provided by Commuter Services of Pennsylvania.
- The larger sized firms in the region with more positive views towards vanpooling were in the following industries: manufacturing, educational services, and health care and social assistance. Firm support for vanpooling is an important factor in successful vanpools being established.
- Telecommuting and adequate parking for employees are inversely related to

interest in vanpooling. Firms with greater concern about parking costs will be more likely to engage in vanpooling efforts than those whose costs are not as much a firm concern.

- Convenience and access to public transit were not significant and thus are not strongly related to a firm's support for vanpooling. This fits the general lack of a variety of public transit in much of the South Central Pennsylvania region. Public transit serves limited urban destinations tied to population density and existing use and is unlikely to cover the dispersed geographic locations of many large South Central Pennsylvania employers.
- Commuter Choice is not used extensively in the South Central Pennsylvania region. Not only were most firms not using Commuter Choice, more were not familiar with it. Only 4 percent of survey firms participated in Commuter Choice. Thirty-eight percent of firms in the survey were not familiar with Commuter Choice. The tax benefits available through Commuter Choice could be more widely promoted in Pennsylvania.

The research found that there seems to be a general lack of knowledge of what vanpooling can provide firms. Low levels of public knowledge of vanpooling need to be overcome in order for any incentive program aimed at vanpooling to be effective. The final report *Impacts of Vanpooling in Pennsylvania and Future Opportunities* is available on the UCSUR Web site, [www.ucsur.pitt.edu](http://www.ucsur.pitt.edu).

**Figure 1. Travel to Work: Carpool vs. Public Transportation, Pennsylvania, 1970–2008**



# First Census Tract Level Data Released by the American Community Survey

■ *By Christopher Briem*

In December, the U.S. Census Bureau released the first 5-year American Community Survey (ACS) estimates. The 5-year ACS provides data at the smallest level of geography, including smaller municipalities, as well as sub-municipal areas at the census tract and census block group levels.

ACS data provide social, economic, housing and demographic statistics for every community in the nation. The current release reported here was the first ACS data released for some of the smaller

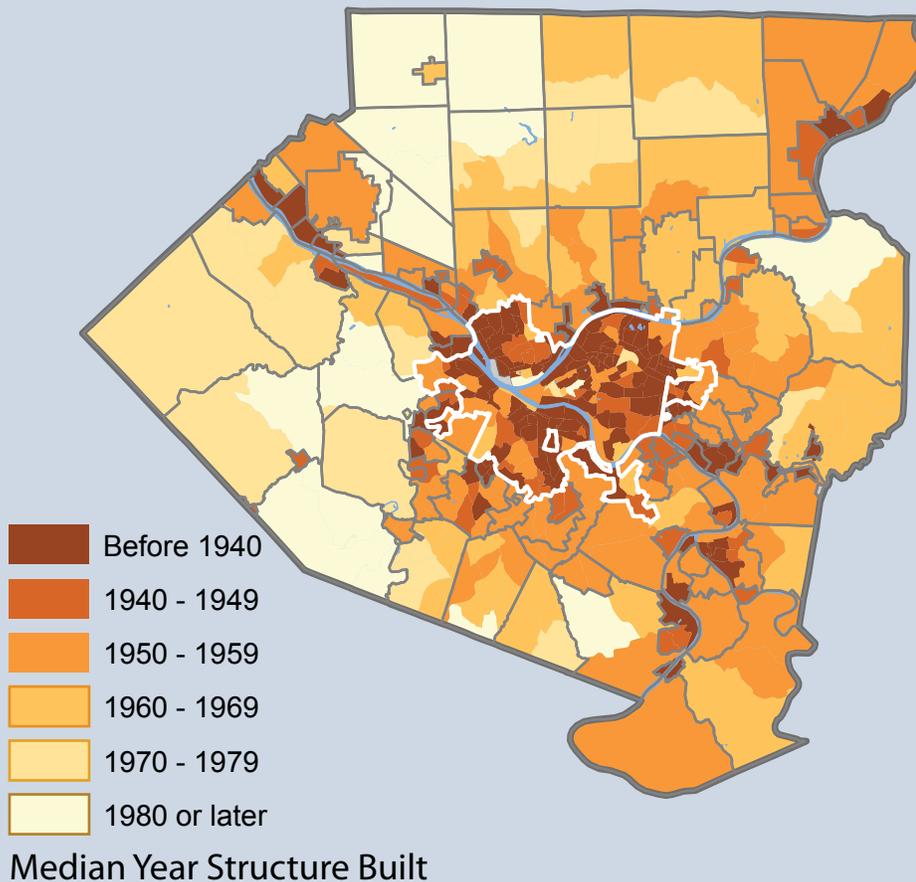
municipalities in Pennsylvania, and the first significant data released by the ACS program at the sub-municipal level.

The 2005–2009 ACS data are compiled from a rolling annual sample survey mailed to approximately 3 million addresses between Jan. 1, 2005, and Dec. 31, 2009. By pooling several years of survey responses, the ACS can generate detailed statistical portraits of smaller geographies. Additionally, the Census Bureau will release a new set of 5-year estimates every year.

In 2010, three types of estimates will be available from the ACS: 1-year estimates (based on data collected in a single year), 3-year estimates (based on data collected in three consecutive years), and 5-year estimates (based on data collected in five consecutive years).

Data available in each type of ACS estimate are determined by the population size of a geographic area. One year of sample results is sufficient for reporting of data for larger areas, with smaller areas reported

**Allegheny County Snapshot—Median Age of Residential Housing by Census Tract  
American Community Survey 2005–2009 data**



based upon the pooling of incrementally more years of sample results, as described above.

For areas with populations of 65,000 or more, the Census Bureau has produced 1-year ACS estimates every year since 2005. For areas with populations of 20,000 or more the Census Bureau has produced 3-year ACS estimates beginning with the 2005–2007 cycle.

The 5-year data is what was released for the first time in December 2010. Care should be taken to compare ACS data compiled with similar types of pooled years.

The new 2005–2009 ACS estimates are not related to the 2010 decennial census population counts. In December, the Census Bureau released the first data from the 2010 decennial census, limited to total state population counts required for reapportionment of U.S. congressional seats among states.

More detailed data from the 2010 decennial census is currently scheduled to be released in February and further data will

be available in subsequent releases later in the year.

The decennial census in 2010 did not include a “long form” survey that was used in previous decennial censuses. The long form of the decennial census provided most of the social, economic, housing and demographic statistics of sub-municipal levels at the Census tract and block group geographies. 2010 decennial census data will be limited to results of the ten questions asked about basic demographic information such as race, sex and Hispanic origin.

The ACS program is intended to provide the detailed socio-economic data that had previously been collected via the “long form” decennial census questionnaire.

Because it is a survey based on a population sample rather than the entire population, the ACS—like the census long form it replaces—produces estimates, not actual counts. ACS data are also published with relevant standard deviations that should guide users in

interpreting the statistics.

Smaller geographic regions, and in particular analysis of variables relevant to only small subsets of the population, may have significant sample errors that should be accounted for in any study or analysis.

As an illustration of the kinds of information provided in these new ACS 5-year estimates, the median age of housing at the census tract level for Allegheny County is depicted on the map. Significant differences in the age of the housing stock is revealed by this figure, with large parts of the City of Pittsburgh and parts of some of the river communities having half its housing stock constructed seventy years ago or more. Age of housing stock is an important indicator of housing quality. Older houses generally require more care and upkeep.

In the coming months, UCSUR will be analyzing ACS data with analyzing the most recent socio-economic, demographic and housing trends in the region.

## Urban and Regional Analysis Program Announcing Spring Brown Bag Seminar Speakers

This spring 2011 term, the Urban and Regional Analysis Program at UCSUR will continue to sponsor its Brown Bag Seminar.

The following events are scheduled.

- Friday, January 28: Anita Zuberi, MacArthur Foundation Postdoctoral Research Fellow, Department of Sociology, Pennsylvania State University, “Neighborhood Quality, Parental Knowledge, and Parental Control of Children: Assessing Aspects of Parental Monitoring”
- Friday, February 25: Waverly Duck, Assistant Professor, Department of Sociology, University of Pittsburgh, “The Orderliness of Urban ‘Disorder’:

Drug Dealing, ‘Careers,’ and the Local Interaction of a Place”

Confirmed but dates not yet scheduled:

- Lisa Nelson, Senior Policy Analyst, Federal Reserve Bank of Cleveland, “Mortgage Delinquencies and Loan Modifications in Pennsylvania”
- Hunter Morrison, Director, Campus Planning and Community Development, Youngstown State University, “Planning for a Smaller City”
- Werner Troesken, Professor, and Randy Walsh, Associate Professor, Department of Economics, University of Pittsburgh, “The Political Economy of American Apartheid, 1900–1950”

Also, please note:

2011 Iris Marion Young Lecture on Political Engagement:

Dr. Heidi Hartmann  
President, Institute for Women’s Policy  
March 31, 3 p.m.

University Club Ballroom A

Co-sponsored by the University of Pittsburgh’s Women’s Studies Program, Graduate School of Public and International Affairs, and UCSUR.

Please check the UCSUR Web page for additional seminars throughout the term ([www.ucsur.pitt.edu](http://www.ucsur.pitt.edu)).



# University of Pittsburgh

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Impacts of Vanpooling in Pennsylvania and Future Opportunities (2010)

Migration Trends in the Pittsburgh Region, Update September 2009 (9/09)

Social Return on Investment Case Study Analysis: Community Human Services and The Union Project (1/09)

The Nonprofit Sector: An Economic and Community Asset (1/09)

EEO Employment Data for Allegheny County and the Pittsburgh Region (2/08)

Gender Wage Disparity in the Pittsburgh Region (12/07)

The Impact on Nonprofit, Large Landowners on Public Finance in a Fiscally Distressed Municipality: A Case Study of Pittsburgh, Pennsylvania (11/07)

The Impact of the University of Pittsburgh Cancer Institute and UPMC Cancer Centers on the Pittsburgh Regional Economy (10/07)

Migration Trends in the Pittsburgh Region, 2000–06 (7/07)

Diversity Among Pennsylvania State Boards (12/06)

Census 2000 city of Pittsburgh Neighborhood Employment by Place of Work Profiles (3/06)

Allegheny County Economic Trends (12/05)

Allegheny County Housing and Socio-demographic Trends (12/05)

Disabilities in Southwestern Pennsylvania (10/04)

Women's Benchmarks Reports (4/04)

Black-White Benchmarks Reports (3/04)

The State of Aging and Health in Pittsburgh and Allegheny County (5/03)

2002 User Survey for the Pennsylvania Allegheny Trail Alliance (3/03)

Diversity Among Elected Officials in the Pittsburgh Region in 2002 (2/03)

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