Estimating the Number of High School Dropouts in Connecticut and in Sub-State Areas in 2005-2007: Findings for Young Adults (18-24) and All Working Age Adults (18-64)

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Introduction

Over the past decade, a growing number of educational researchers, labor market analysts, national foundations, national and state business organizations, city mayors, governors, and state legislatures have highlighted the educational, economic, and social problems of America's high school dropouts.[1] The U.S. once an international leader in its high school graduation rate has fallen behind many other developed nations on this key measure. Dropout problems among America's high school students remain excessively high, especially among students in large urban, public school districts, males, Black and Hispanic youth and low income youth of all races. These high dropout rates have persisted despite the fact that the personal and societal economic costs associated with dropping out of high school appear to be both quite large and growing substantially.[2] Male dropouts in particular have faced an increasing number of severe labor market difficulties in recent decades, with steep declines in their employment rates, their real weekly wages, annual earnings, and lifetime earnings.[3] The deteriorating labor market

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[1] For a review of national, state, and local research studies on high school graduation and dropout rates, See: (i) Gary Orfield (Editor), Dropouts in America: Confronting the Graduation Crisis, Harvard Education Press, Cambridge, 2004; (ii) Elaine Allensworth, Graduation and Dropout Trends in Chicago: A Look at Cohorts of Students from 1991 Through 2004. Chicago: Consortium on Chicago School Research at the University of Chicago. http://www.consortium-chicago.org/publications/p75.html; (iii) Jay P. Greene, High School Graduation Rates in the United States, New York, Manhattan Institute and Black Alliance for Education Options. http://www.manhattan-institute.org; (iv) Christopher Swanson, Who Graduates? Who Doesn't? A Statistical Portrait of Public High School Graduation, Class of 2001. Washington D.C.: The Urban Institute. www.urban.org; (v) Nancy Martin and Samuel Halperin, Whatever It Takes: How Twelve Communities Are Reconnecting Out-of-School Youth, American Youth Policy Forum, Washington, D.C., 2006; (vi) Daria Hall, Getting Honest About Grad Rates: How States Play the Numbers and Students Lose, The Education Trust, June 2005; (vii) Andrew Sum, Paul Harrington, et. al., The Hidden Crisis in the High School Dropout Problems of Young Adults in the U.S.: Recent Trends in Overall School Dropout Rates and Gender Differences in Dropout Behavior, Center for Labor Market Studies, Northeastern University, Boston, Report Prepared for The Business Roundtable, Washington, D.C., 2002; (viii) Ishwar Khatiwada and Andrew Sum, The Recent Labor Market Experiences and Problems of the Nation's Young High School Dropouts: Their Implications for the JAG Dropout Recovery Program, Prepared for Jobs for America's Graduates, Alexandria, Virginia, June 2005.

[2] See: (i) Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin, et. al., An Assessment of the Labor Market, Income, Health, Social, Civic and Fiscal Consequences of Dropping Out of High School: Findings for Massachusetts Adults in the 21st Century, Prepared for Boston Youth Transition Funders Group, Boston, Massachusetts, January 2007; (ii) Ishwar Khatiwada, Joseph McLaughlin, Andrew Sum, The Fiscal Economic Consequences of Dropping Out of High School: Estimates of the Tax Payments and Transfers Received by Massachusetts Adults in Selected Educational Subgroups, Prepared for Boston Youth Transition Funders Group, Boston, Massachusetts, February 2007; (iii) Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin, et. al, An Assessment of the Labor Market, Income, Health, Social, and Fiscal Consequences of Dropping Out of High School: Findings for Illinois Adults in the 21st Century, Prepared for the Alternative School Network, Chicago, October 2007.

[3] See: (i) Andrew Sum, Ishwar Khatiwada, Joseph McLaughlin, et. al., An Assessment of the Labor Market, Income, Health, Social, Civic and Fiscal Consequences of Dropping Out of High School: Findings for Massachusetts Adults in the 21st Century, Prepared for The Mott Foundation, Flint, Michigan, January 2008; (ii) Andrew Sum, Tim Barnicle, and Ishwar Khatiwada, The Labor Market Experiences of the Nation's Young Adults Since the Publication of America's Choice, Report Prepared for the National Center on Education and the Economy, National Skills

fortunes of male dropouts have reduced their ability to form independent households, to marry, to support their children, and to contribute positively to the fiscal position of state and national governments.

Earlier this decade, both the U.S. Congress and the Bush Administration voiced joint concerns over the low rate of on-time graduation rates from public high schools, culminating with their passage of the No Child Left Behind legislation in 2002. The Act provided a definition of high school graduation rates that it has asked states to adopt in calculating their high school graduation and dropout rates.[4] Connecticut plans to implement a new graduation rate beginning with the Class of 2010 based on a longitudinal data base that is consistent with the goals outlined in No Child Left Behind and the National Governors Association's Graduation Rate Compact. The purpose of this research paper is to identify the size and extent of the high school dropout problem in Connecticut. We will conservatively estimate the number of high school dropouts in the 18-64 year old population and the 16-24 year old population, and also provide alternative estimates of on-time or 4-year high school graduation rates for the state and selected large school districts and Hartford area school districts based on the official state estimating methodology which we argue below is likely to be biased downward given findings for other states who have switched to a student based longitudinal tracking system.

The Educational Attainment of Connecticut Adults (18-64) in 2005-2007

The major emphasis of the research work being performed by the Center for Labor Market Studies on the high school dropout problem in Connecticut is on the labor market, earnings, income, social, civic and fiscal consequences of dropping out of high school and failing to complete any post-secondary schooling. To provide background estimates of the size of this problem in Connecticut, we have attempted to identify the distribution of all non-elderly adults (18-64) and young adults (18-24) in various educational groups across the state of Connecticut in recent years, including high school dropouts and high school graduates with no post-secondary schooling. To generate such estimates, we need to have access to databases that will allow us to

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Commission, Washington, D.C., 2006; (iii) Peter Edelman, Harry J. Holzer, and Paul Offner, Reconnecting Disadvantaged Young Men, Urban Institute Press, Washington, D.C., 2006.

[4] This definition of a four year, on time graduation rate and alternative measures of high school dropout rates can be found in Gary Orfield, Dropouts in America: Confronting the Graduation Crisis, op. cit.

identify the educational attainment of the state's residents. One of our primary data sources is the American Community Surveys for 2005-2007.

Findings for the American Community Survey, a large scale national household survey conducted by the U.S. Census Bureau, has made possible the development of a wide array of educational attainment, school enrollment, labor force, employment and unemployment, earnings, incomes, and labor market problem indicators for use in planning workforce development programs.[5] The American Community Surveys have utilized a questionnaire that is very similar in format to the long-form questionnaires used in conducting the decennial censuses in prior decades.[6] The ACS survey collects detailed demographic information on each sample respondent (age, gender, race-ethnic group, nativity status, marital status, household relationship) and their school enrollment status and educational attainment. For each respondent of working-age (16 and older), the survey collects information on their labor force behavior at the time of the survey, their employment and unemployment status, the industries of their employers, and the occupations of their jobs. For those employed in the 52 weeks prior to the survey, information is collected on their paid weeks of employment, their average weekly hours of work , and their annual earnings from both wage and salary jobs and self-employment. Information on the amount and sources of money income received by each household member 16 and older in the 52 weeks prior to the survey is used to estimate the annual income of each household member (16+), the household as a whole, and the family household unit to which they belong.

The public use files from the American Community Surveys also allow researchers to classify adults into a diverse array of educational categories. We have combined adults into one of six educational groups. The six mutually exclusive educational subgroups used in this research report are the following:

- High school dropouts: these are adults without a high school diploma or its equivalency, such as a GED, including those with only a primary school education.

[5] The American Community Survey was first introduced on a pilot basis by the U.S. Census Bureau in 2000 with a set of local areas heavily over-represented in the sample. Over time, the national sample of household has increased substantially together with geographic coverage across states. Nearly two million households completed ACS interviews in 2007, including 23,000 households in the state of Connecticut.

[6] For a review of the structure and contents of the ACS questionnaire,
See: U.S. Department of Commerce, Bureau of the Census, American Community Survey, Washington, D.C., 2005.

- High school graduates/GED: adults with either a regular high school diploma or its equivalency, but no completed years of college. We cannot isolate GED holders from high school graduates with a regular high school diploma.[7]
- Some college, but no formal degree: adults with 1 or more years of completed college schooling but no formal degree.
- Associate's degree: adults with an associate's degree but not a bachelor's or higher degree.
- Bachelor's degree: adults with a bachelor's degree but not a Master's or higher degree.
- Master's or higher degree: adults with a master's or higher degree, including PhD. and professional degrees (law, medicine).

Estimates of the educational attainment of Connecticut's 18-64 year old population over the 2005-2007 period are displayed in Table 1. According to the findings of the ACS surveys, there were slightly more than 182,000 adults in the state who lacked a regular high school diploma or a GED certificate, representing 8.3 percent of the 18-64 year old population. Connecticut ranked below the U.S. average on this measure and ranked 11th lowest among the 50 states on this measure, meaning that only 10 states had a lower percent of high school dropouts among their 18-64 year old population. Another 29 percent of the state's 18-64 year old population had obtained a high school diploma or GED, but had not completed any years of post-secondary schooling. Approximately 21 percent of adults completed one or more years of post-secondary schooling but had not earned a college degree while the remaining 42 percent had earned at least an Associate's degree. A fairly high share of the 18-64 year old population of the state held a bachelor's or higher academic degree (34 percent).

The share of the state's population that lacked a high school diploma differed considerably by nativity status. Among foreign born adults in the 18-64 year old age group, the share of dropouts was 20.2 percent versus only 5.5 percent for native born adults. Foreign born

[7] Starting in 2008, the ACS survey questionnaire began to distinguish GED holders from those with regular diplomas.

adults in Connecticut were nearly 4 times more likely than native born adults to lack a high diploma or a GED certificate in 2005-2007. Of the 182,000 high school dropouts residing in Connecticut, 47 percent were born outside of the United States. It should be noted, however, that those native born adults who dropped out of high school and went to get a GED will be counted as a high school graduate in the ACS. Including GED holders as dropouts would increase the number of native born dropouts by 35 to 40 percent.

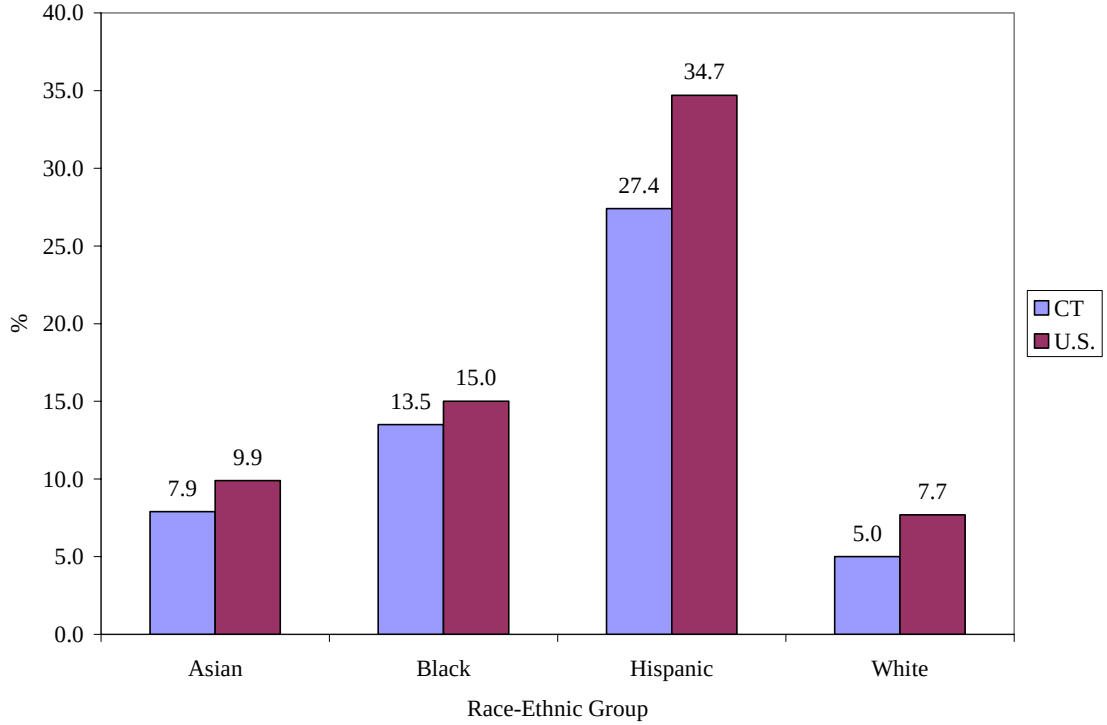
Table 1:
The Distribution of the 18-64 Year Old Resident Population of Connecticut by Their Level of Educational Attainment and Nativity Status, 2005-2007

	Population			**Percent of Population**		
Educational Attainment	Total	Native Born	Foreign-Born	Total	Native Born	Foreign-Born
H.S. dropouts	182,054	96,436	85,618	8.3	5.5	20.2
H.S. graduates, with no post-secondary schooling	636,552	505,330	131,222	29.0	28.6	31.0
Some College, No Degree	455,590	398,306	57,284	20.8	22.5	13.5
Associate Degree	169,563	141,521	28,042	7.7	8.0	6.6
Bachelors Degree	440,288	374,044	66,244	20.1	21.1	15.7
Masters or Higher	307,486	252,919	54,567	14.0	14.3	12.9
Total	2,191,533	1,768,556	422,977	100.0	100.0	100.0

Source: U.S. Census Bureau, American Community Surveys, 2005-2007, public use files, tabulations by authors.

The American Community Surveys also allow researchers to identify the educational attainment of respondents by race-ethnicity. For the state of Connecticut and the U.S., the percent of 18-64 year old dropouts by race-ethnicity are displayed in Chart 1. Across each of the four race-ethnic groups, the share of dropouts was lower in Connecticut than was the case nationally. The share of dropouts in Connecticut's 18-64 year old population was lowest for Whites (5.0%) and Asians (7.9%).. The share of dropouts was higher among Black 18-64 year old adults (13.5%) and highest among Hispanics (27.4%). The high share of Hispanics without a regular high diploma includes a large number of recent immigrants who come into the state after having dropped out of high school in their home country.

Chart 1:
The Percent of High School Dropouts in the 18-64 Year Old Population of Connecticut and the U.S. By Race-Ethnic Group, 2005-2007



Source: U.S. Census Bureau, American Community Surveys, 2005-2007, public use files, tabulations by authors.

The incidences of high school dropout problems in Connecticut also vary to a substantial degree across geographic areas of the state. The state's larger cities have a disproportionate share of the state's dropouts while more affluent suburbs typically have very low shares of high school dropouts. The research focus for this project has been to analyze the size of the high school dropout problem and its economic and social consequences for the state as whole and for 5 selected areas in the Hartford region, including the city of Hartford, Manchester, Bristol, New Britain, and Enfield. Due to the lack of availability of data at the city level for most cities with a population of under 100,000, the latter four cities cannot be identified alone. Therefore, the dropout estimates for these areas will include residents of surrounding towns.

In Table 2 below, estimates of the share of dropouts in the 18-64 year old population are presented for the 5 Hartford region areas that are a key focus of this research report and for four other large cities in the state. The share of dropouts among the 18-64 year old population in each

geographic area ranged from a low of 5 percent in the Enfield area to highs of 21 and 25 percent in the cities of Bridgeport and Hartford for the 2005-2007 time period. One in every four adults 18-64 years old lacked a regular high diploma or GED in the city of Hartford, a ratio that was three times the statewide average during this time period.

In each of the geographic areas, there were substantial differences between the share of dropouts in the native born and foreign born populations. The share of foreign born dropouts in the city of Hartford was 33%, nearly 15 percentage points higher than the percentage share for native born adults 18-64 years old residing in that city. In the Bristol, East Hartford/ Manchester, and Enfield areas, foreign born adults were approximately 3 times more likely to be a high school dropout than their native born cohorts. Many of these foreign born dropouts immigrated to these cities after having already dropped out of school in their home countries before obtaining a high school diploma. Young immigrant students with limited English proficiencies in the state's high schools also face high dropout problems. In Massachusetts, the high school graduation rate among Limited English Proficient students for the Class of 2008 was only 55.8% versus 81.2% for all students.

Table 2:
Percent of High School Dropouts in the 18-64 Year Old Population of Selected Cities/Areas of Connecticut By Nativity Status, 2005-2007

City/Area	(A) Total	(B) Foreign Born	(C) Native Born
Bridgeport City	21.5	29.2	15.4
Bristol and Surrounding Area	8.9	23.5	7.1
East Hartford/ Manchester	9.0	19.5	6.4
Enfield and Surrounding Area	5.2	11.9	4.2
Hartford City	25.2	33.2	18.7
New Britain and Surrounding Area	11.4	16.6	9.2
New Haven City	14.1	24.7	9.7
Stamford City	9.7	18.7	2.9
Waterbury City	15.9	29.4	11.1

Source: American Community Surveys, 2005-2007, tabulations by authors.

Adjusting High School Dropout Estimates To Include Those With a GED Certificate

According to our analysis of the 2005-2007 ACS surveys, there were 182,054 adults in Connecticut between the ages of 18 and 64 years old who did not earn a high school diploma or its equivalency. This group of high school dropouts represented about 8.3% of the total 18-64 year old population of the state. Unfortunately, the ACS survey does not distinguish between a high school diploma and a GED or its equivalent. In order to estimate the number of adults in Connecticut that have a GED and not a regular high diploma, we used the findings of the monthly CPS surveys of 2008 and 2009 to identify those adults who reported having a GED but no post-secondary schooling. The CPS survey findings indicate that 6 percent of adults between the ages of 18-64 years old who report having a high school diploma or its equivalency have only a GED. If we apply this six percent share to those identified in the ACS as having a high school diploma or its equivalent, we can very conservatively estimate that at least another 38,830 adults in Connecticut between the ages of 18-64 have only a GED. The combined total number of dropouts is 220,884, representing 10% of the 18-64 year old population of the state. Our estimate of the number of adult high school dropouts is also likely conservative since as many as 3% to 4% of respondents to the ACS and CPS surveys are likely to overstate their educational attainment or report a GED as a regular high school diploma.[8] In addition, any individual with a GED who completed one year of college would not be counted as GED holder, but instead as someone who had 1-3 years of post-secondary education. Therefore, the true number of individuals who left high school without obtaining a regular diploma is most likely 100,000 to 120,000 or 5-6 percentage points higher than the estimate provided in Table 3.

[8] CLMS staff summed the GED certificates awarded to U.S. adults over a 30 year period (1970-2004) and found that the number awarded was far greater than indicated in the CPS findings even after excluding those who would have aged out of the 18-64 year old population.

Table 3:
Estimating the Number of 18-64 Year Olds in Connecticut and the U.S. Without a Regular High School Diploma, 2005-2007

Category	U.S.	Connecticut
Number of 18-64 Year Olds With Less than a High School Diploma or Its Equivalency (2005-2007 ACS)	23,563,442	182,054
18-64 Year Olds With a GED (CPS)	4,449,892	38,830
Total Number of H.S. Dropouts 18-64 Years Old	28,013,334	220,884
Total Population 18-64 Years of Age	189,909,797	2,191,533
Percent of Dropouts in the Total Population	14.8	10.1

An Alternative Methodology for Estimating the Number of 18-24 Year Old Adults in Connecticut in 2007 Who Had Left High School Without Obtaining a Regular High School Diploma

The above estimates of high school dropouts applied to the 18-64 year old population of the state and selected local areas. However, the focus of most existing educational programs is on teens and young adults who are at-risk of dropping out of high school or who have already made the decision to drop out of high school. These youth educational policies and programs to address high school dropout problems are dependent on timely and statistically reliable information on the numbers and demographic/socioeconomic characteristics of high school dropouts in the state and in local school districts. CLMS research staff have estimated the number of 18-24 year old youth in the state of Connecticut in calendar years 2005- 2007 who were not enrolled in school and lacked a regular high school diploma. We will refer to members of this group as high school dropouts. As will be revealed below, slightly more than one-fourth of the 18-24 year old dropouts had obtained a GED certificate by the time of the American Community Surveys (ACS) in 2007, but we include them in the count of dropouts since they left school without obtaining a regular diploma. National research has consistently revealed that GED holders, on average, do not fare as well in the labor market as regular high school graduates, and they are considerably less likely to obtain any type of post-secondary degree.

To obtain our estimates of the number of 18-24 year old dropouts living in Connecticut in 2007, a stock estimate,[9] we had to utilize a variety of data sources and employ a number of

[9] A stock estimate represents the number of high school dropouts at a particular point in time. Since a number of the 16-24 year olds were still in high school, some of them will become dropouts over time adding to the ultimate pool of dropouts from this age group.

estimating methodologies and assumptions. The data sources and methodologies used to derive the estimates of the number of young adult dropouts were the following:

- The 2005-2007 American Community Surveys, a national household survey which involved interviews with approximately 21,000 households each year from 2005-2007 across the state of Connecticut.
- Estimates of non-coverage rates for gender, age, and race-ethnic groups of 18-24 year olds from the ACS and Current Population Surveys (CPS) in 2007. These estimated non-coverage rates were used to generate estimates of the number of 18-24 year old dropouts in Connecticut who were missed by the ACS survey. An assumption was made that the under-coverage ratio for the ACS was only ½ of the under-coverage ratio for 16-19 and 20-24 year olds in the March CPS.
- Estimates of the number of 18-24 year olds who had obtained a GED certificate by the time of the 2007 ACS survey. The ACS survey includes GED holders in the count of high school graduates and those with some college. The survey does not specifically identify GED holders. Data from the American Council on Education on annual awards of GED certificates to Connecticut youth by age group from 1996-2004 were used to generate estimates of the number of 18-24 year olds who held GED certificates in Connecticut in 2007.[10] A likely conservative assumption that 12% of existing high school students between the ages of 18-24 will eventually leave school without obtaining a high school diploma.

The total estimated count of 18-24 year old dropouts consists of the following four groups:

• High school dropouts, no GED	22,516
• The estimated ACS "undercount" of high school dropouts[11]	2,501
• 18-24 year olds with a GED in 2007	10,011
• Projected number of high school students who will drop out before receiving a regular diploma	2,198
• **Total, above four groups**	**37,226**
• **Total 18-24 Year Old Population**	**300,223**

[10] American Council of Education, GED Annual Statistical Reports, 1996-2004.

[11] The undercount includes dropouts not listed by households on the ACS survey, households that were missed by the ACS survey, and the homeless, including those living in shelters.

- **Dropouts as a share of the 18-24 Year Old Population** **12.4%**
- Plus a fibbing factor of 3 percentage points for those individuals who claim to have a regular high diploma but do not. **15.4%**

Alternative Estimates of the High School Graduation Rate for the State of Connecticut in Recent Years

Measuring high school dropout rates and graduation rates is not a straight-forward exercise. The national government, individual states, and educational researchers and policy analysts have used a variety of different formulas to measure these graduation rates and they often yield quite different results. Over the past several years, there have been a growing number of studies conducted by the national and state governments, economists, educators, and policy analysts showing large discrepancies in the graduation rates reported by states and those developed by alternative methodologies. In response to this criticism and to comply with graduation rate guidelines encouraged by both the No Child Left Behind (NCLB) legislation and the National Governor's Association, several states including Indiana, North Carolina, and Massachusetts, have developed longitudinal student tracking systems that produce reliable 4-year and 5-year cohort graduation rates.[12] In addition to producing more reliable estimates of graduation rates for the entire state and individual school districts, longitudinal student tracking systems allow states to produce graduation rates for males and females, race-ethnic groups, and key student subgroups such as special education students, low income students, and English language learners. As of the fall of 2009, Connecticut has not yet produced statewide or local district cohort graduation rates using a longitudinal student tracking system.[13] The Connecticut State Department of Education reports a graduation rate using what is referred to in the literature as a "leaver" methodology.[14] This methodology estimates graduation rates by dividing total public high school graduates by the sum of graduates and high school dropouts. As noted by

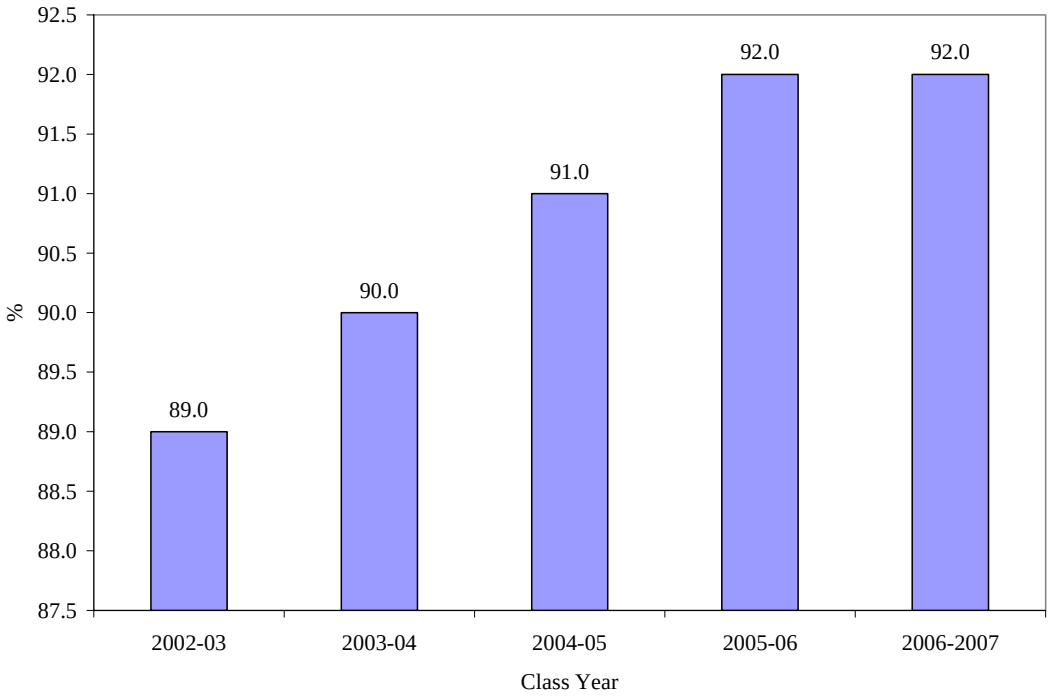
[12] The National Governors' Association Compact on High School Graduation Data was signed by the 50 state governors in July of 2005. The following graduation rate formula was agreed to be the standard for estimating the 4-year on time graduation rate. The Compact stated: States agree to calculate the graduation rate by dividing the number of on-time graduates in a given year by the number of first-time entering ninth graders four years earlier. Graduates are those receiving a high school diploma. The denominator can be adjusted for transfers in and out of the system and data systems will ideally track individual students with a longitudinal student unit record data system. Special education students and recent immigrants with limited English proficiency can be assigned to different cohorts to allow them more time to graduate.

[13] Diane Murphy, *Presentation to the Connecticut Governor's Summit on Dropout Prevention*, Connecticut State Department of Education, October 2009.

[14] See: Editorial Projects in Education Research Center, Connecticut State Graduation Brief, Class of 2007, www.edweek.org/rc.

previous researchers, the validity of this estimate is dependent on obtaining an accurate count of dropouts which we believed to be heavily and deliberately undercounted according to researchers such as Gary Orfield.[15] Our analysis of findings from state dropout measures based on individual student data and the "leaver" methodology shows large gaps. Using this leaver methodology, the state has reported a statewide graduation rate ranging from 88-92 percent in recent years. The Connecticut State Department of Education also provides graduation rates for local school districts. The findings on local school districts will be discussed in the following section.

Chart 2:
Connecticut's Statewide Graduation Rate for Public High Schools, 2002-2007 (in %)



Source: Connecticut State Department of Education, web site.

The U.S. Department of Education's National Center on Education Statistics also provides graduation rate data for all 50 states. The NCES graduation rate formula is referred to as the Average Freshman Graduation Rate. The Average Freshman Graduation Rate is calculated by dividing the total number of graduates in a state in a given year by the 3-year average of the 8th, 9th, and 10th grades from 5 years, 4 years, and 3 years prior to the year of graduation. For example, an on-time class of 2007 graduate would have started 8th grade in 2002-2003, 9th grade

[15] See: Gary Orfield (Editor), Dropouts in America: Confronting the Graduation Crisis, Harvard Education Press, Cambridge, 2004.

in 2003-2004, and 10th grade in 2004-2005. The total enrollments for those three class years would be averaged and serve as the denominator of the average graduation rate formula to estimate the graduation rate for the Class of 2007.

The graduation rate estimates generated by the NCES for the state of Connecticut differ substantially from the Connecticut State Department of Education's publicly reported statewide graduation rates. For the Classes of 2005 and 2006, the two most recent years for which the NCES has estimated graduation rates, the average freshman graduation rate was only 81 percent. The NCES reported an 80.7 percent graduation rate for Connecticut's Class of 2004 and 80.9 percent rate for the Class of 2003. The difference between the Connecticut State Department of Education's graduation rate and that estimated by the NCES ranged from 8 percentage points in 2003 to 12 percentage points for the Class of 2006.

A second widely cited measure of national, state, and local graduation rates is the Cumulative Promotion Index, also known as the CPI. This methodology known as the Cumulative Promotion Index (CPI) was developed by researchers at The Urban Institute in Washington, D.C., and it is the formula recommended by the U.S. Congress in the No Child Left Behind legislation.[16] The CPI uses data on the enrollments of students in each grade from 9 to 12 and through graduation at the end of grade 12 for a two year period in a given school district. The value of the CPI can be thought of as measuring the per cent of 9th grade students in the state who would be expected to receive a high school diploma three years later; i.e., on time high school graduates.

The values of the CPI for Connecticut match the graduation rates generated by the NCES methodology fairly closely. The CPI is available for the Classes of 2004 and 2006 in Connecticut. The CPI index for the Class of 2004 was 79.8, and it dipped slightly to 79.0 for the Class of 2006. Both the CPI and the graduation rate produced by the NCES fall 10-13 percentage points below the official graduation rate produced by Connecticut's State Department of Education.

[16] According to the provisions of the No Child Left Behind legislation, high school graduation rates are to be "defined as the percentage of students who graduate from secondary school with a regular diploma in the standard number of years". See: U.S. Congress, 6311(b)(2)(c)(vi).

There are other methods that have been used by educational researchers to estimate high school graduation and dropout rates for the nation, for states, and for individual school districts.[17] One of the methods used by the U.S. Department of Education and other researchers involves a comparison of the annual number of official high school graduates in a state (as measured by the number of high school diplomas awarded to public and private high school graduates) with the number of 17 year olds in the state.[18] We have adopted a slightly modified version of this graduation rate formula based on actual counts of diploma awards by amending the denominator to represent the estimated average number of 17 and 18 year olds in the state. The high school graduation rate formula is the following:[19]

$$\text{Graduation Rate}_t = \frac{\text{Number of high school diplomas awarded by public and private high schools}_t}{\text{Average number of 17 and 18 year old residents of the state in year t}}$$

Our estimates of high school graduation rates in the state of Connecticut for individual school years from 2001 to 2007 based on the above formula are displayed in Table 4. The high school graduation rates in Connecticut over this six year period ranged from a low of 84.3% in the 2000-2001 school year to a high of 89.5% in the 2006-2007 school years, with a median graduation rate of 85%. This graduation rate excludes those youth who will earn a GED certificate. It only counts regular high school diplomas from private and public high schools.

[17] For a more detailed review of these alternative methods for estimating high school graduation and dropout rates, See: Gary Orfield (Editor), Dropouts in America: Confronting the Graduation Rate Crisis, Harvard Education Press, Cambridge, 2004.

[18] The U.S. Department of Education collects diploma awards from public high schools on an annual basis and surveys private high schools on a bi-annual basis. We have imputed private high school diploma awards for the in-between years by assuming that they were equal to the same fraction of all diploma awards in the previous year.

[19] The estimates of the number of state residents ages 17-18 are based on the U.S. Census Bureau state population estimates of residents by single age group. These population estimates include residents of group quarters, including student dorms, juvenile institutions, jails, and long stay health facilities.

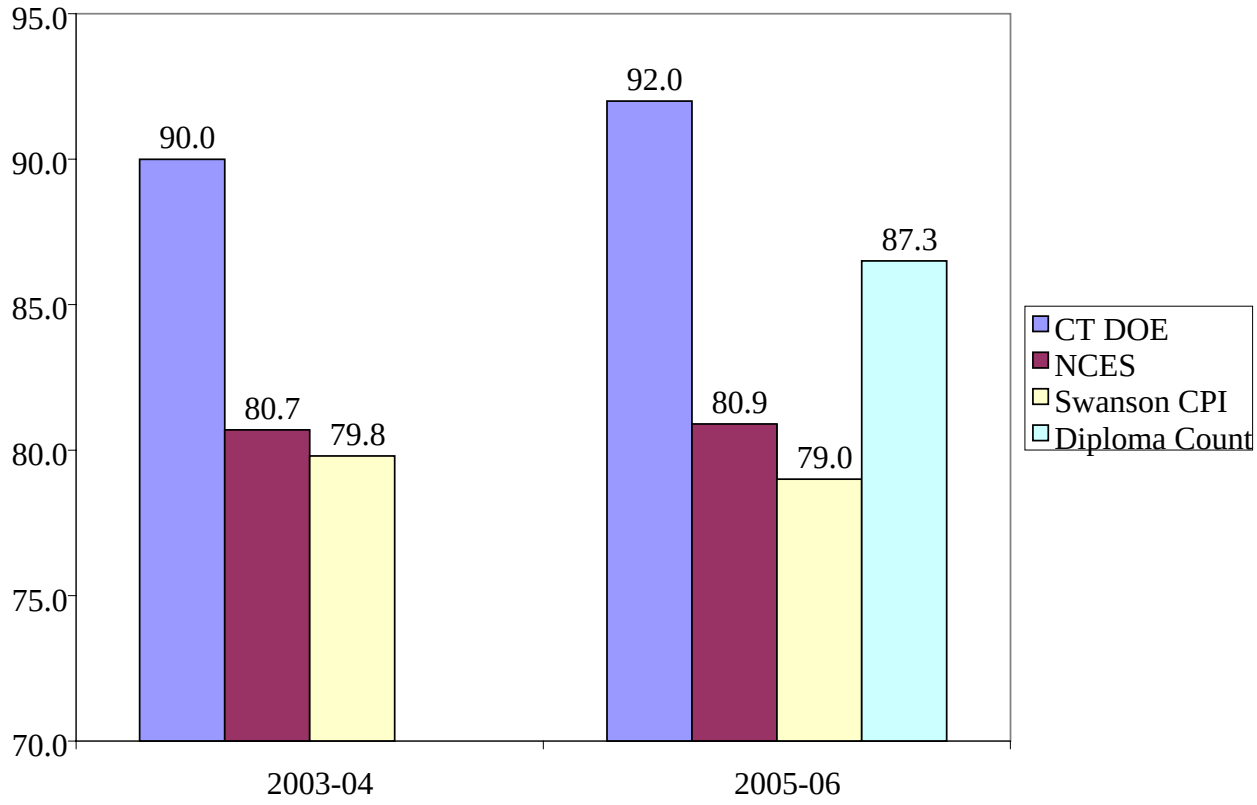
Table 4:
High School Graduation Rates for Connecticut Based On the U.S. Department of Education's Diploma Awards, 2001-2007

Graduation Year	(A) Public High School Graduates	(B) Private High School Graduates	(C) Total Graduates	(D) 17 & 18 Year Old Average Population	(E) Graduation Rate (Total Graduates/ 17 & 18 Population)
2007	37,516*	7,993	45,509	50,869	89.5
2005	35,515	5,589	41,104	48,208	85.2
2003	33,665	6,508	40,173	47,291	84.9
2001	30,388	5,126	35,514	45,577	84.3

Notes: The 2007 count of public high school graduates is from the Connecticut State Department of Education, and it closely matches the projection published by NCES. The population data in the table are from the U.S. Census Bureau's annual population estimates program. Private high school graduate counts come from the NCES's biannual Private School Survey.

A comparison of the four alternative methodologies for estimating on-time graduation rates in Connecticut are displayed in Chart 3 for two class years. The values of the CPI for Connecticut match the graduation rates generated by the NCES fairly closely in both class years in Chart 3. For both the Class of 2004 and the Class of 2006, the official graduation rate reported by the state of Connecticut exceeded the alternative estimates by several percentage points. The official graduation rate for the Class of 2004 was 90 percent, exceeding the CPI and NCES measure by 9-10 percentage points. The gap between Connecticut's official graduation rate and the CPI and NCES was even larger for the Class of 2006. The 2-year average graduation rate (Classes of 2005 and 2007) estimate using the diploma count methodology fell in between the official rate and the CPI and NCES estimates for the Class of 2006.

Chart 3:
Comparisons of Alternative Graduation Rate Estimates for the State of Connecticut, Graduating Classes of 2004 and Class of 2006



Official Graduation Rates for Selected Local School Districts in Connecticut

As noted earlier, Connecticut's State Department of Education also provides data on graduation rates for individual school districts across the state. In Table 5, the number of graduates and graduation rates for the Classes of 2006 and 2007 are displayed for key cities and towns in the Hartford area and also for larger cities throughout the state. Graduation rates for the Class of 2007 ranged from lows of 68 percent in New Britain and 71 percent in Bridgeport to highs of 94 and 96 percent in Manchester, West Hartford, and Bristol. The Hartford school district had a reported graduation rate of 77 percent for the Class of 2007, which was one percentage point higher than that for the Class of 2006. Most of the school districts in Table 5 had slightly higher graduation rates for the Class of 2007 than the Class of 2006.

Table 5:
Number of Graduates and Graduation Rates for Selected School Districts in Connecticut, Classes of 2006 and 2007

District Name	(A) Total Graduates 2007	(B) Graduation Rate 2007	(C) Total Graduates 2006	(D) Graduation Rate 2006
Bridgeport School District	1,063	71.1	834	70.6
Bristol School District	581	95.9	552	93.7
Danbury School District	634	92.4	594	89.5
East Hartford School District	556	91.0	433	88.9
Enfield School District	458	92.2	463	90.6
Hartford School District	733	77.0	683	76.1
Manchester School District	439	94.4	442	93.2
New Britain School District	575	68.0	528	70.4
New Haven School District	963	78.5	931	73.3
New London School District	138	85.7	142	73.6
Stamford School District	1,017	89.4	848	91.3
Waterbury School District	780	83.0	730	82.8
West Hartford School District	754	95.2	730	95.8

Source: Connecticut State Department of Education, web site.

Conclusion

The primary purpose of this paper was to identify the number and percent of dropouts in Connecticut's adult population (18-64) and in selected sub-state areas, especially Hartford and surrounding cities. Recently, Connecticut's Department of Education implemented a new student information management system that will allow the state to track students from ninth grade through high school graduation, while also verifying transfers into and out of the public school system. With this new system, the state will be able to calculate the share of first-time ninth graders that graduate from high school with a regular diploma in 4 years or additional years. The Class of 2010 will be the first year for which graduation rates are reported using data from this new student-based management information system. Graduation data will be available for every public school district and can be reported for a wide array of demographic (gender, race-ethnicity) and student subgroups (special education, English language learners, low income).

Based on the range of dropout rate and graduation rate estimates discussed in this paper, and findings for other states that have adopted the student based system, we believe that the state

will report a lower graduation rate in 2010 using the new system than has been currently reported for the Classes of 2006 and 2007. We predict the statewide graduation rate will be closer to 83 to 85 percent rather than the 92 percent graduation rate reported for the Class of 2007. The good news is that the new database also will have the capability to inform school districts at what grade students leave the system, the demographic backgrounds of these dropouts, and the size of the dropout problem for certain student subgroups, such as low income students and English language learners. The availability of this new, reliable data base will allow the state of Connecticut, school districts, and individual high schools to craft strategies to reduce dropout problems based on their own school's or school district's experiences.

This paper also examined estimates of the number of high school dropouts in the 18-64 year old population by nativity status for the entire state, several large cities in the state, and selected cities in the Hartford area. These findings revealed that a large share of the dropouts in these geographic areas were foreign born. Many of these adult dropouts never attended formal schooling in Connecticut or attended public schools in the state for a very short time before dropping out. Although the state's foreign born dropouts often tend to fare better in the labor market than native born dropouts, Connecticut faces a challenge in reducing the number of poorly educated foreign born individuals in the state. This challenge goes beyond the scope of the existing K-12 system. The state's adult education system will likely have to play a larger role in boosting the academic skills and educational attainment of foreign born adults that lack a regular high school diploma to help boost their long term employability and earnings.