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U.S. Department of Education
NCES 2007-161

Placing College Graduation Rates in Context

How 4-Year College Graduation Rates Vary With Selectivity and the Size of Low-Income Enrollment

Postsecondary Education Descriptive Analysis Report



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Postsecondary Education Descriptive Analysis Report

October 2006

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Executive Summary

The study reported on here compares graduation rates, one of only a few systemwide accountability measures currently available, among 4-year colleges and universities that are similar with respect to selectivity and low-income enrollment. Further, the study identifies institutions that serve large low-income undergraduate populations, and compares those with relatively high graduation rates with other low-income serving institutions.

Research has widely shown that college graduation rates are associated with student characteristics (e.g., Astin and Oseguera 2005; Gold and Albert 2006). Findings from the National Center for Education Statistics (NCES) studies based on nationally representative longitudinal surveys of U.S. college students have shown that students' high school academic preparation and measures of socioeconomic status such as family income and parents' education are highly predictive of degree attainment (Adelman 2006; Berkner, He, and Cataldi 2002; Choy 2002). Therefore, a more in-depth picture of graduation rates may be gained by comparing institutions that are similar with respect to the characteristics of their student bodies, rather than by making comparisons across all institutions. For example, among otherwise similar institutions, those that enroll larger proportions of low-income students may have lower graduation rates. Likewise, more selective institutions that only admit students who meet high standards of academic achievement would experience higher graduation rates than otherwise similar but less selective institutions. The analysis presented in this report provides a

system-wide comparison of 6-year 2004 graduation rates at 4-year colleges and universities among groups of institutions that share common characteristics related to students' academic preparation (using measures of selectivity within Carnegie classifications) and the size of low-income enrollment (using the proportion of federal grant aid recipients among the freshmen included in the graduation rate cohorts).

The study subsequently identifies institutions as low-income serving based on the proportion of Pell Grant recipients in their total undergraduate population. Low-income serving institutions with graduation rates in the top 10 percent of their selectivity group are then compared with other low-income serving institutions with respect to institutional characteristics such as sector, enrollment size, and minority enrollment.

Data and Key Variables

The primary source of data used in this analysis is the 2004 Graduation Rate Survey (GRS), which is part of the Integrated Postsecondary Education Data System (IPEDS) collected by the U.S. Department of Education. IPEDS is a comprehensive census of institutions whose primary purpose is to provide postsecondary education. IPEDS collects data from postsecondary institutions in the United States (the 50 states and the District of Columbia) and other jurisdictions, such as Puerto Rico. The 2004 graduation rates analyzed in the study are based on a cohort of students who enrolled 6 years earlier, in 1998. Therefore, the 1998 IPEDS

Institutional Characteristics (IC) and Student Financial Aid (SFA) components are also used in the study. The analysis is supplemented with data from the 1995–96 Beginning Postsecondary Students Longitudinal Study (BPS:96/01), a nationally representative sample of all beginning postsecondary students (first-time freshmen) who first enrolled in college in 1995–96. Both IPEDS and BPS surveys are collected by the U.S. Department of Education. Because IPEDS is a census survey, all data presented in this report are based on universe data; therefore, no statistical analyses were conducted on these data. For the supplementary analysis based on the BPS data, differences between groups were tested using standard *t*-tests to determine statistical significance at $p < .05$.

For the system-wide comparison of graduation rates, institutions were classified in three ways: (1) by their 2000 Carnegie Classification aggregated to doctoral, master’s, or bachelor’s degree, which is a broad indication of an institution’s mission; (2) by a measure of selectivity (very, moderately, or minimally selective), which reflects the admission policies and the academic preparation of admitted students; and (3) by the size of the low-income freshman population (small, moderate, or large) based on the proportion of full-time freshmen who receive federal grant aid. Federal grant aid is awarded almost exclusively to low-income students. Each of the three measures—Carnegie classification, selectivity, and size of the low-income population—has three levels, which results in 27 different comparison groups. While recognizing that this grouping is an oversimplification of the many ways that institutions differ, it offers a broad context in which to view graduation rates and determine what rates may be relatively “low” or “high” within a roughly comparable group of institutions.

The Carnegie classification variable was taken directly from the IPEDS IC file. The selectivity measure was developed by Cunningham (2005) for a previous NCES study and is based on several IPEDS variables including college admission test scores, the number of applicants, and the number of students admitted. The size of the low-income population is based on the proportion of federal grant aid recipients in the freshman cohort on which the graduation rates are based. Based on the distribution of federal grant aid recipients in the freshman class, institutions were divided into those with small low-income enrollments (20 percent or fewer federal grant aid recipients); moderate enrollments (21 to 39 percent recipients); and large enrollments (40 percent or more recipients).

A total of 1,301 institutions make up the analysis universe in this study, which represents all doctoral, master’s, and baccalaureate colleges and universities eligible for Title IV funding that enrolled at least 50 full-time freshmen in 1998. In order to enhance the comparability of institutions and keep the number of comparison groups within a reasonable number, the roughly 400 institutions classified as specialized within the Carnegie classification scheme (such as schools of art, music, engineering, and business) are not included. Also, there were not enough for-profit 4-year institutions with adequate enrollment size to include in the analysis. And finally, the study does not include 2-year institutions because the complexity of the issues affecting graduation rates in this sector requires a separate analysis beyond the scope of this report.

The distribution of the 1,301 institutions within the 27 comparison groups is displayed in table A. Institutions are grouped by selectivity levels within Carnegie classifications (rows) and within each of these groups, institutions are broken out

by low-income enrollment size in the graduation rate cohort (columns). The largest group (216 institutions) consists of moderately selective master's institutions with moderate low-income enrollments. Another 97 master's institutions had large low-income enrollments. The smallest groups—minimally selective institutions with small low-income enrollments—included fewer than 10 institutions in each of the three Carnegie classifications. In the detailed analyses, these institutions are combined with institutions made up of moderate low-income enrollments.

Who Is Counted as a Graduate?

A limitation and major criticism of the graduation rates as they are calculated for the U.S. Department of Education is that only a subset of admitted freshmen are counted (Adelman 2006;

Gold and Albert 2006; U.S. Department of Education 2006). Graduation rates are based on freshmen who enroll in the fall of a specified year (in this case 1998), who have never attended college before, who attend full time when they begin, and who intend to earn a degree. In other words, this definition eliminates students who return to college after dropping out, who enroll part time, who enroll for the first time in the spring, or who otherwise do not fit the definition of full-time, first-time, degree-seeking freshmen. On average, institutions reported that 71 percent of admitted freshmen were included in their 1998 graduation rate cohorts among the institutions included in this study (figure A). This means that the degree completion of nearly 30 percent of students was not taken into account in determining the 2004 graduation rates. Moreover, the proportion of freshmen included in the 1998

Table A. Number of 4-year institutions, by size of low-income enrollment in the 1998 graduation rate cohort, Carnegie classification, and selectivity: 2004

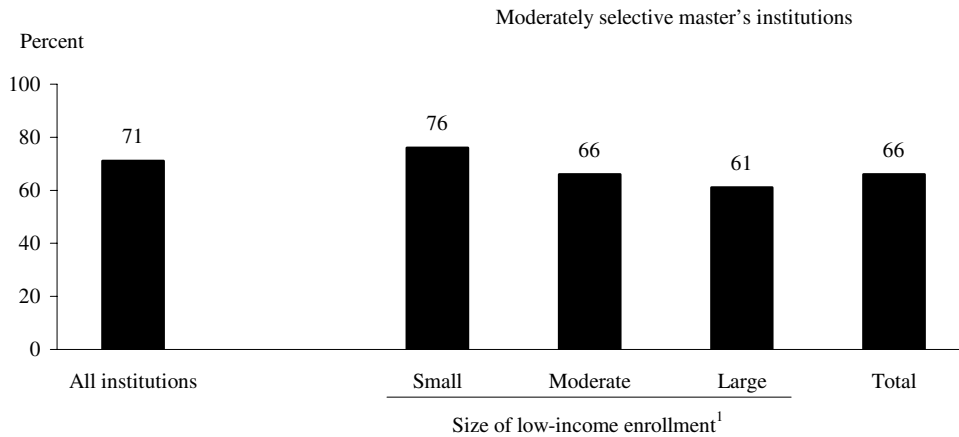
Carnegie classification and selectivity	Size of low-income enrollment in graduation rate cohort ¹			
	Total	Small	Moderate	Large
Total ²	1,301	272	638	391
Doctoral	246	95	116	35
Very selective	107	56	39	12
Moderately selective	118	36	68	14
Minimally selective	21	3	9	9
Master's	543	73	296	174
Very selective	68	27	27	14
Moderately selective	353	40	216	97
Minimally selective	122	6	53	63
Bachelor's	512	104	226	182
Very selective	117	68	33	16
Moderately selective	279	27	152	100
Minimally selective	116	9	41	66

¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.

² All 4-year institutions eligible for Title IV funding with a doctoral, master's, or baccalaureate Carnegie classification, a valid selectivity classification, and with at least 50 full-time freshmen enrolled in 1998.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

Figure A. Average percentage of the freshman class represented in the 1998 graduation rate cohort (i.e., full-time, first-time, degree-seeking students), by size of low-income enrollment: 2004



¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.
 SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) 2004.

cohorts tended to decline as the size of the low-income population increased.

students (36 to 39 percent) enrolled in minimally selective institutions graduated in 6 years.

Graduation Rates by Institutional Selectivity

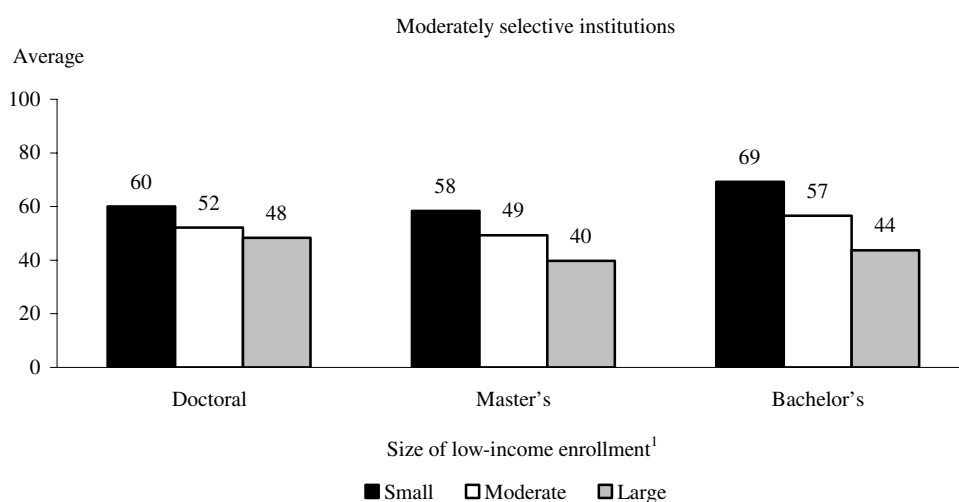
Among the 1,301 institutions included in this study, the enrollment weighted average 6-year graduation rate in 2004 was 57 percent.¹ Graduation rates varied as would be expected by Carnegie classification and institutional selectivity, with the highest graduation rates reported by very selective doctoral and baccalaureate institutions (75 percent). Very selective master’s degree institutions reported graduation rates of 64 percent on average, while the lowest graduation rates were reported by minimally selective institutions. Regardless of Carnegie classification, just under 40 percent of

Graduation Rates by Low-Income Enrollment Size

Within Carnegie classification and selectivity groups, graduation rates were directly and inversely related to the size of the low-income population in the freshman cohort. Figure B displays the graduation rates for moderately selective institutions for all three Carnegie classifications. Graduation rates for the two largest groups of institutions—moderately selective master’s and moderately selective bachelor’s institutions—dropped at least 9 percentage points at each successive low-income level. For example, the 2004 graduation rate for moderately selective bachelor’s degree institutions with small low-income enrollments was 69 percent, while the rates for those with moderate

¹ The weighted graduation rates take into account enrollment size, which gives larger institutions greater weight than smaller institutions.

Figure B. Enrollment weighted average 6-year graduation rates for moderately selective 4-year institutions, by Carnegie classification and size of low-income enrollment in the 1998 graduation rate cohort: 2004



¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) 2004.

and large low-income enrollments were 57 and 44 percent, respectively. Doctoral institutions showed similar though smaller differences.

High and Low Graduation Rates

Another way to look at differential graduation rates is to rank order institutions (within groups of similar institutions, or overall) based on their graduation rates, and to then determine what the graduation rates are at selected points on the resulting distributions. For purposes of this report, institutions ranked at or above the 75th percentiles of their distributions are considered to have relatively high graduation rates, while institutions ranked at or below the 25th percentiles are considered to have relatively low graduation rates. Among all institutions included in the study, low graduation rates (i.e., those at or below the 25th percentile for all institutions) are below 40 percent; high graduation rates (i.e., those at or

above the 75th percentile) are 65 percent or higher.

For the two largest groups of colleges—moderately selective master's and bachelor's institutions—the low graduation rate for institutions with large low-income enrollments is roughly 35 percent, while the high rate for these institutions is 51 percent, which corresponds to the median rate for all institutions. Therefore, a graduation rate at or above the overall median might be considered high for a moderately selective institution with a large low-income enrollment.

Graduation Rates by Gender

The average 2004 graduation rate for women was 60 percent—6 percentage points higher than the rate for men. In general, as the proportion of low-income students increased, the gap between

graduation rates for women and men tended to widen. For example, among moderately selective master’s institutions, the gap in rates increased from 6 to 8 to 11 percent for institutions with small, moderate, and large low-income enrollments (figure C).

Graduation Rates by Race/Ethnicity

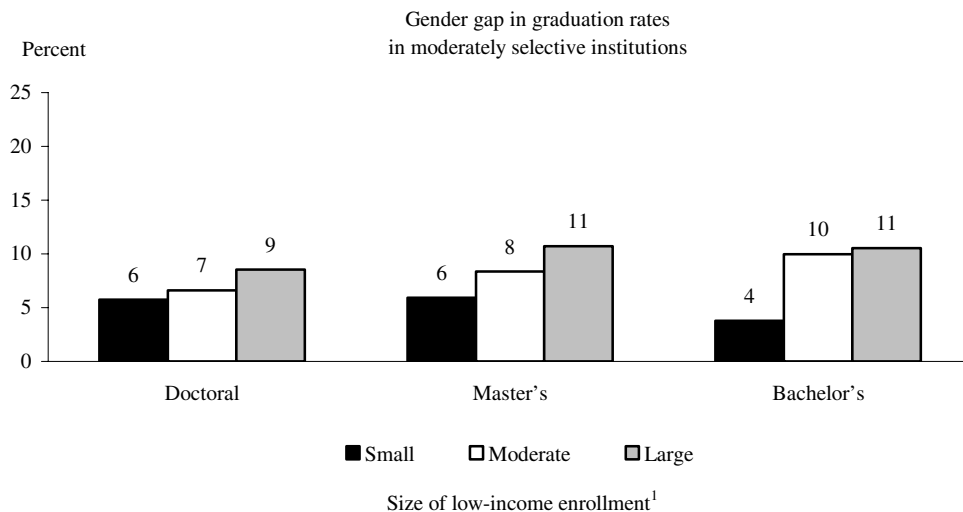
The proportion of students in the 1998 freshmen cohorts who were either Black or Hispanic increased with each successive level of low-income enrollment size. For example, as shown in Figure D, on average, Black students made up 29 percent of the freshman class among baccalaureate institutions with large low-income enrollments, compared with 2 percent among institutions with small low-income enrollments.

In nearly all the comparison groups, White students graduated at higher rates than Black and

Hispanic students. The average gap in graduation rates between White and Black students was 18 percentage points. However, the gaps varied substantially by comparison groups, and in one group—very selective baccalaureate institutions with large low-income enrollments—the average graduation rate for Black students was higher than that for White students (53 vs. 50 percent). This group of institutions encompasses many Historically Black Colleges and Universities. In contrast, a gap of nearly 22 percentage points separated the average graduation rates of White and Black students in very selective doctoral institutions with large low-income enrollments.

In moderately selective master’s institutions—the group with the largest number of institutions and students—the White/Black graduation gap ranged from 18 percent among institutions with small low-income enrollments to 11 percent

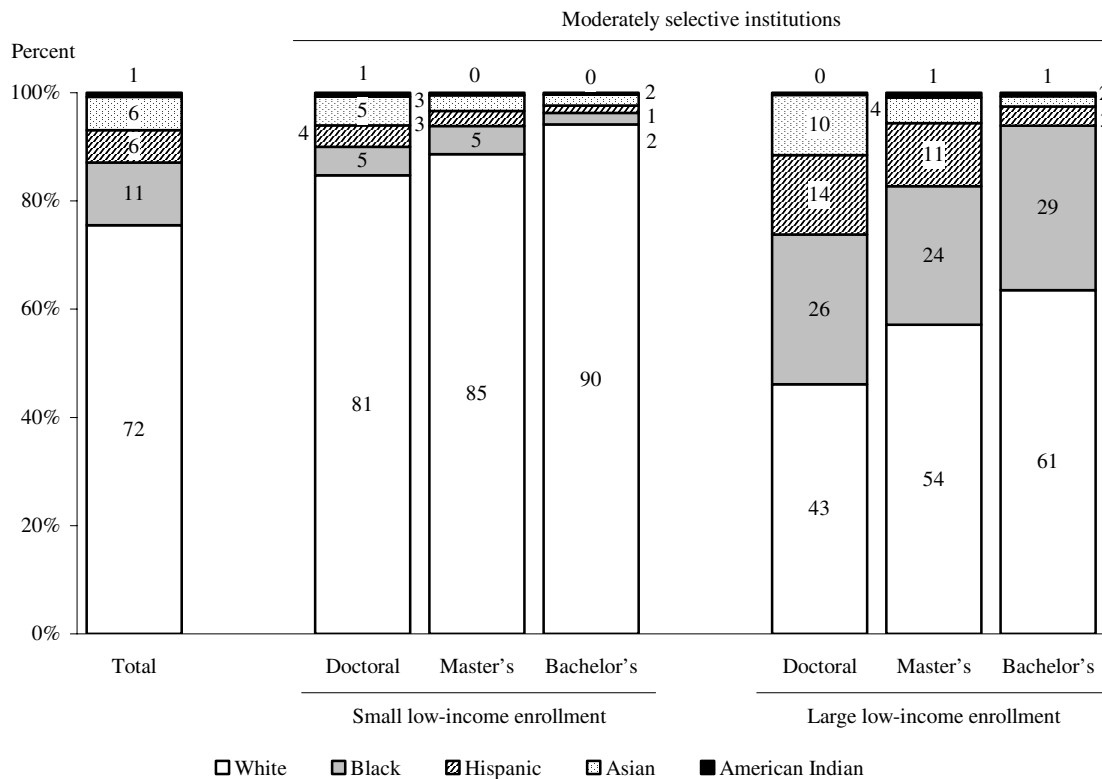
Figure C. Gap in enrollment weighted average 6-year graduation rates between women and men in moderately selective 4-year institutions, by Carnegie classification and size of low-income enrollment in the 1998 graduation rate cohort: 2004



¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) 2004.

Figure D. Enrollment weighted distribution of racial/ethnic groups in all 4-year institutions and moderately selective institutions, by Carnegie classification, and size of low-income enrollment in the 1998 graduation rate cohort: 2004



¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) 2004.

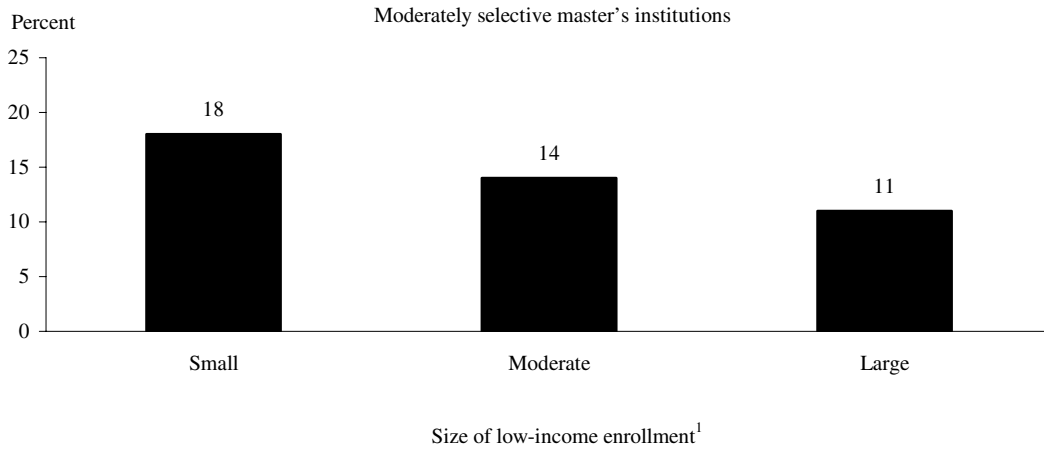
among institutions with large low-income enrollments (figure E). In other words, the gap in graduation rates between White and Black students narrowed as the size of the low-income population increased.

The gap between White and Hispanic graduation rates was about 12 percent, on average. The group of institutions that enrolled the highest proportion of Hispanic students—moderately selective doctoral institutions with large low-income enrollments—had the narrowest graduation rate gap (2 percentage points). In contrast, a gap of nearly 21 percentage points

separated the average graduation rates of White and Hispanic students in very selective doctoral institutions with large low-income enrollments.

Whereas Asian students tended to graduate at higher rates than White students, both overall (66 vs. 60 percent) and in very selective doctoral institutions (81 vs. 77 percent), this pattern was not generally observed for other types of institutions. For example, in very selective master's institutions, the average graduation rate for Asian students was 63 percent, compared with 66 percent for White students.

Figure E. Gap in enrollment weighted average 6-year graduation rates between White and Black students among moderately selective master’s institutions, by size of low-income enrollment in the 1998 graduation rate cohort: 2004



¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.
 SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) 2004

Institutions Serving Low-Income Students

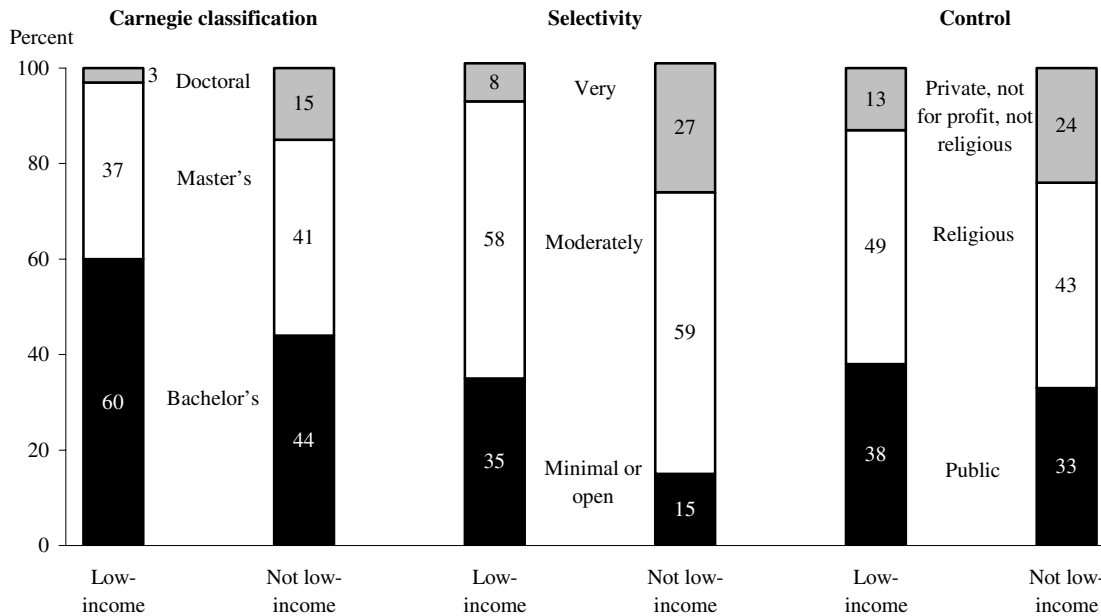
Because the freshmen cohorts on which graduation rates are based can be very small and may vary from year to year,² they may not always reflect the makeup of the entire undergraduate enrollment. Therefore, to designate institutions as low-income serving, the study determined the low-income enrollment size of their entire undergraduate enrollment in the same year based on Pell Grant data.

Of the 4-year colleges and universities included in the study, 319 (or just over one-quarter) met the definition of low-income serving used for this

report.³ Compared with other institutions, those identified as low-income serving were more likely to be minimally selective and to have religious affiliations (figure F). Low-income serving institutions also tended to have larger proportions of minority students and smaller undergraduate full-time-equivalent (FTE) enrollments (figure G). About one-fifth (21 percent) of low-income serving institutions were Historically Black Colleges and Universities, compared with less than 1 percent of those that were not low-income serving. The 2004 median graduation rate for low-income serving institutions was 39 percent, and 56 percent for institutions that were not low-income serving.

² In this analysis, freshman cohorts with as few as 50 students (minimum enrollment required for inclusion in this analysis universe) could be included.

³ To be classified as low-income serving, institutions with large 1998 freshmen cohorts identified in the previous analysis also had to meet one additional criterion: their 1999 undergraduate enrollment was made up of 25 percent or more Pell Grant recipients or, regardless of the freshman cohort, institutions had one-third or more Pell Grant recipients in their undergraduate enrollment.

Figure F. Carnegie classification, selectivity, and institutional control of 4-year institutions, by low-income serving status: 2004

NOTE: Low-income serving institutions are defined as those with 40 percent or more federal grant aid recipients in the 1998 freshman cohort and at least 25 percent Pell Grant recipients in the total undergraduate enrollment in 1999 or at least one-third Pell Grant recipients in total undergraduate enrollment irrespective of the freshman cohort.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

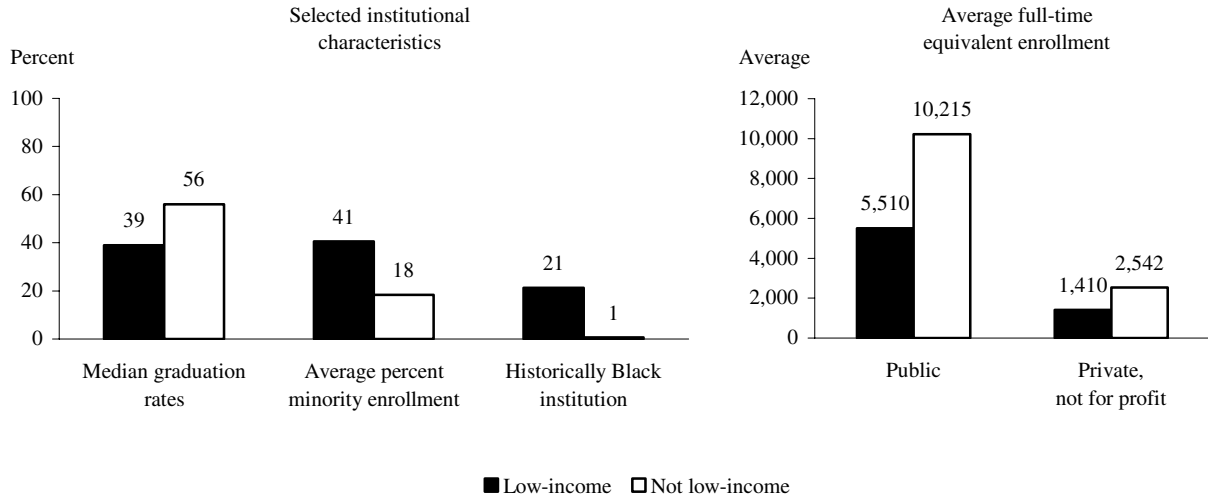
Despite the relatively low graduation rate overall for low-income serving institutions, a number of these colleges and universities were successful in graduating relatively large proportions of students (i.e., their graduation rates fell in the top 10 percent of their selectivity levels). The graduation rates for these 35 institutions were as follows: 75 percent or higher for very selective institutions, 59 percent or higher for moderately selective institutions, and 48 percent or higher for minimally selective institutions.⁴ Compared with other low-income serving institutions, those identified with high graduation rates were more often private without

religious affiliations, had larger undergraduate FTEs, and lower minority enrollments (figure H). Yet as a group, these 35 institutions are not easily categorized. Relatively high-performing low-income serving institutions span small and large institutions in both the public and private sectors. Among institutions with religious affiliations, 8 were Catholic and 11 were Christian of various denominations. Also among the high-performing low-income serving institutions were five Historically Black Colleges and Universities, one of which was public and one a women's college.

In interpreting the data however, readers are cautioned that the criteria used to identify low-income serving institutions in general and those

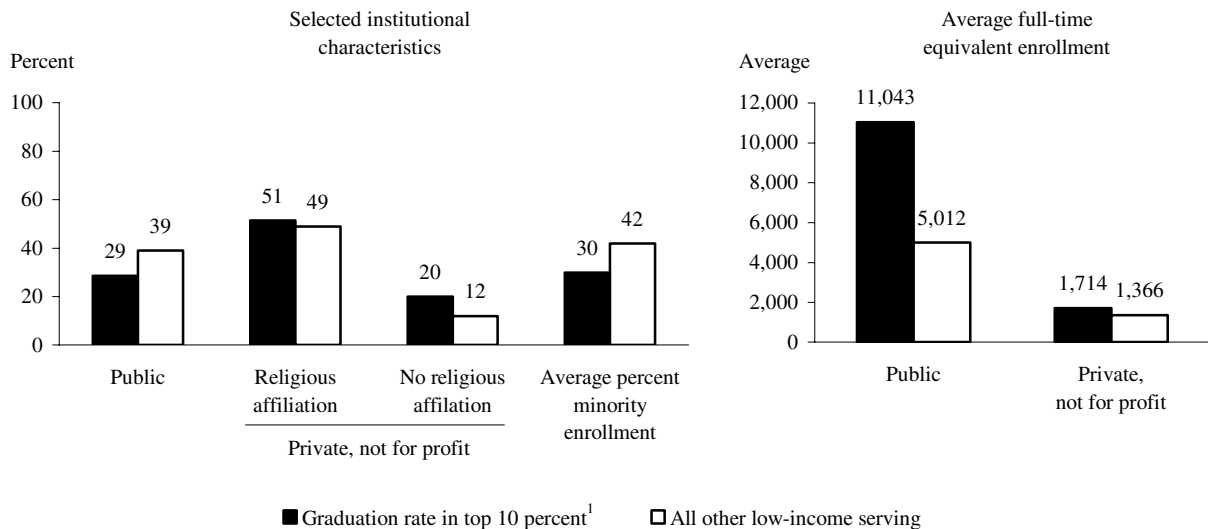
⁴ Graduation rates were rounded within each selectivity group, which resulted in 35 instead of 32 institutions identified in the top 10 percent.

Figure G. Selected institutional characteristics of 4-year institutions, by low-income serving status: 2004



NOTE: Low-income serving institutions are defined as those with 40 percent or more federal grant aid recipients in the 1998 freshman cohort and at least 25 percent Pell Grant recipients in the total undergraduate enrollment in 1999 or at least one-third Pell Grant recipients in total undergraduate enrollment irrespective of the freshman cohort.
 SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

Figure H. Selected institutional characteristics among low-income serving 4-year institutions for institutions with very high graduation rates and all others: 2004



¹ Institutions with graduation rate in top 10 percent of selectivity group: 75 percent or higher for very selective institutions, 59 percent or higher for moderately selective, and 48 percent or higher for minimally selective.

NOTE: Low-income serving institutions are defined as those with 40 percent or more federal grant aid recipients in the 1998 freshman cohort and at least 25 percent Pell Grant recipients in the total undergraduate enrollment in 1999 or at least one-third Pell Grant recipients in total undergraduate enrollment irrespective of the freshman cohort.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

with high graduation rates are simple empirical cutoff points based on the distribution of institutions' reported data. Thus, inaccuracies in data reporting, missing data, and the somewhat arbitrary cutoff points used to identify such institutions may have excluded colleges or universities that successfully serve low-income students.

This study makes no attempt to determine the reasons certain institutions were more successful with respect to graduation rates than other low-income serving institutions. Rather, the purpose is simply to point out that some institutions are graduating relatively large proportions of students while serving large economically disadvantaged populations.

Conclusions

The purpose of this study was to provide a context for comparing graduation rates among "similar" institutions. As this study showed, graduation rates dropped systematically as the size of the low-income freshman population

increased, even within the same Carnegie classification and selectivity level.

Variations by gender and race/ethnicity were evident across the comparison groups and also varied with the size of the low-income population. Women graduated at higher rates than men, and in general, as the proportion of low-income students increased, so did the gender gap. The gap in graduation rates between White and Black students and between White and Hispanic students, on the other hand, typically narrowed as the size of the low-income population increased.

Finally, despite the relatively low graduation rates reported by institutions identified as low-income serving, a number of these institutions experienced much higher than average graduation rates, demonstrating that even while serving a large, economically disadvantaged population, some institutions outperform comparable institutions enrolling higher income populations.

Foreword

This report uses data primarily from the 2004 Graduation Rate Survey (GRS), a component of the Integrated Postsecondary Education Data System (IPEDS) to provide a systemwide overview of how graduation rates of comparable 4-year institutions vary with selectivity and the size of the low-income population enrolled. The study classifies institutions in three ways: (1) by their 2000 Carnegie Classification aggregated to doctoral, master's, or bachelor's degree; (2) by their admissions policies, using a measure of selectivity—very, moderately, or minimally selective; and (3) by the size of the low-income population—small, moderate, or large—based on the proportion of full-time, first-time, degree-seeking freshmen who receive federal grant aid, which is awarded almost exclusively to low-income students.

The study also uses data from two other sources: the Beginning Postsecondary Secondary study (BPS:96/01) to compare student completion rates with institutional graduation rates, and 1999 Pell Grant data to identify low-income serving institutions based on the percent of Pell Grant recipients in the undergraduate population. Low-income serving institutions with high graduation rates and then compared with other low-income serving institutions.

Most of the tables presented in this report were produced using the IPEDS Data Analysis System (DAS), a web-based software application developed by NCES to allow users to specify and generate tables for the postsecondary surveys. For more information, consult the DAS website (<http://nces.ed.gov/das/>).

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Introduction

U.S. colleges and universities are facing increasing pressure to become more accountable for the learning and success of their students (Suggs 2005). The Secretary of Education's report from the Commission on the Future of Higher Education (U.S. Department of Education 2006) (<http://www.ed.gov/about/bdscomm/list/hiedfuture/reports/pre-pub-report.pdf>) voiced concern about the "lack of clear, reliable information about the cost and quality of postsecondary institutions, along with a remarkable absence of accountability mechanisms to ensure that colleges succeed in educating students" (p. vii).

While states and institutions are devoting considerable effort to developing measures of accountability for postsecondary education (McPherson and Shulenburg 2006; National Commission on Accountability in Higher Education 2005), the only systemwide performance measures currently available are graduation and retention rates collected by the U.S. Department of Education. However, a number of studies have indicated that college graduates rates are strongly associated with student characteristics (e.g., Astin and Oseguera 2005; Titus 2006; Gold and Albert 2006).

Findings from the National Center for Education Statistics (NCES) studies based on nationally representative longitudinal surveys of U.S. college students have also shown that students' high school academic preparation and measures of socioeconomic status such as family income and parents' education are highly predictive of degree attainment (Adelman 2006; Berkner, He, and Cataldi 2002; Choy 2002). For example, among students who enrolled in a 4-year institution in 1995–96, some 54 percent of low-income students had completed a degree in 6 years, compared with 77 percent of high-income students (Berkner, He, and Cataldi 2002, table B). Thus, among otherwise similar institutions, those enrolling larger proportions of low-income students may have lower graduation rates. To compare graduation rates across all institutions irrespective of student income levels might potentially be misleading. Likewise, more selective institutions that only admit students who meet high standards of academic achievement would, on average, experience higher graduation rates than otherwise similar but less selective institutions. Therefore, this study compares the 2004 graduation rates of institutions grouped within measures that reflect student academic preparation (institution selectivity and Carnegie classification) and the size of low-income enrollment.

The study, however, does not take into account institutional characteristics such as location, instructional expenditures, and tuition revenue, which research also has shown may be associated with graduation rates (e.g., Hamrick, Schuh, and Shelley 2004; Titus 2006). Many variables can be used to group institutions into “peers,” allowing institutions to compare themselves to similar institutions. Such characteristics may include Carnegie classification, sector (public vs. private), admissions test scores, size, location, expenditures, and others. For example, the NCES Peer Analysis System (<http://nces.ed.gov/ipeds/pas>) groups institutions either by preselected or user-selected characteristics. The online tool College Results Online (<http://www.collegeresults.org>) creates a “similarity” score based on 15 characteristics such as SAT/ACT scores, admissions selectivity, Carnegie classification, sector, and others. Recent reports from the Education Trust have used such peer groups to identify high-performing institutions in relation to similar institutions; these reports provide valuable insights into the success of high-performing institutions (Carey 2005a, 2005b).

This study provides a systemwide overview of how graduation rates vary among comparable 4-year institutions, when institutions are grouped on indicators of student academic preparation and income level. Three key variables were used to group institutions: (1) Carnegie classification (2000) aggregated to doctoral, master’s, and baccalaureate institutions; (2) selectivity, which takes into account the admissions policies and the academic preparation of admitted students; and (3) the proportion of freshmen who receive federal grant aid used as a proxy for the size of the low-income freshman population. Further description of the data and an explanation of how the variables were derived can be found in appendix B.

This report also presents findings from the Beginning Postsecondary Students Longitudinal Study (BPS), a longitudinal survey of students who first enrolled in college in 1995–96, in order to provide information about transfer students and students who are not included in the graduation rate cohort (i.e., those that are not full-time, first-time, degree-seeking students).

Key Questions Addressed

The study addresses the following questions:

- Within aggregated Carnegie classifications (doctoral, master’s and bachelor’s), how do 6-year graduation rates vary by selectivity?

- Within aggregated Carnegie classifications (doctoral, master's and bachelor's) and selectivity levels (very, moderate, minimal), how do 6-year graduation rates vary with the size of the low-income population?
- Within Carnegie classifications, selectivity levels, and the size of low-income enrollment:
 - What are low and high graduation rates (i.e., graduation rates below the 25th and above the 75th percentiles, respectively)?
 - How do graduation rates vary by gender and race/ethnicity? How large are the “gaps” in graduation rates between male and female students, between White and Black students, and between White and Hispanic students?
- How do institutional graduation rates and student completion rates (which include transfer students) differ?
- What are the characteristics of institutions identified as low-income serving and which low-income institutions are among the top 10 percent of institutions within their selectivity level with respect to graduation rates?
- What are the characteristics of low-income serving institutions with relatively high graduation rates?

The remainder of the report is organized into six sections. The first describes the data and explains how the key variables are constructed, including which freshmen are eligible for inclusion in the graduation rate cohorts. The second section illustrates how graduation rates vary within the institutional comparison groups, and the third section discusses differences by gender and race/ethnicity within these same groups. The fourth section describes how institutional graduation rates differ from systemwide completion rates (i.e., how the inclusion of transfer students and students who are not full-time, first-time students changes the reported rate of degree completion). The fifth section identifies low-income serving institutions and compares them with other institutions, and then among low-income serving institutions, identifies those with “high” graduation rates and compares them with all other low-income serving institutions. The final section summarizes the findings and concludes the report.

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Data and Key Variables

The primary data source used in this report is the Integrated Postsecondary Education Data System (IPEDS); in particular, the most recent Graduation Rate Survey (GRS:2004) data are used to detail the differences in graduation rates for the fall 1998 cohort with respect to various institutional characteristics. IPEDS collects data from postsecondary institutions in the United States (the 50 states and the District of Columbia) and other jurisdictions such as Puerto Rico. Participation in IPEDS is a requirement for the institutions that participate in Title IV federal student financial aid programs; approximately 6,700 Title IV institutions participate. The GRS was developed to help institutions comply with requirements of the Student Right-to-Know legislation. Since 2002, nearly 100 percent of institutions have reported graduation rate information. This study also draws on data from the Institutional Characteristics (IC) and Student Financial Aid (SFA) components of IPEDS. The report is supplemented with data from the Beginning Postsecondary Students Longitudinal Study (BPS) to report 6-year bachelor's degree completion rates for all beginning students regardless of whether they transferred. Because IPEDS is a census survey, all data presented in this report are based on actual survey data and are not subject to sampling errors. However, they are subject to nonsampling errors as explained in the technical appendix (appendix B). For the supplementary analysis based on the BPS data, differences discussed in the text were tested using standard *t*-tests and determined to be statistically significant at $p \leq .05$.

Analysis Universe

The analysis includes 1,301 public and private not-for-profit institutions among the 1,838 bachelor's degree-granting institutions in the 2004 graduation rate survey. In order to enhance the comparability of institutions and keep the number of comparison groups within a reasonable number, the 436 institutions classified as *specialized* within the Carnegie classification scheme (such as schools of art, music, engineering, and business) are not included in the analysis. The universe represents all institutions classified as doctoral, master's, or baccalaureate that are eligible for Title IV funding with at least 50 full-time freshmen in the 1998 cohort (see appendix B for a detailed description of the analysis universe selection). The 1998 cohort is the group of students on which the 2004 graduation rates are determined. There were not enough for-profit 4-

year institutions with adequate enrollment size to include in the analysis.¹ In addition, the study does not include 2-year institutions because the complexity of the issues affecting graduation rates in this sector requires a separate analysis beyond the scope of this report.

Graduation Rate Cohort

A limitation and major criticism of the graduation rates as they are calculated for the U.S. Department of Education is that only a subset of admitted freshmen in 4-year colleges are counted (Adelman 2006; Gold and Albert 2006; U.S. Department of Education 2006). Graduation rates are based on freshmen who enroll in the fall of a specified year (in this case 1998), who have never attended college before, who attend full time when they begin, and who intend to earn a degree. In other words, this definition eliminates students who return to college after dropping out, who enroll part time, who enroll for the first time in the spring, or who otherwise do not fit the definition of full-time, first-time, degree-seeking freshmen.

Students included in the graduation rate cohort—full-time, first-time, bachelor’s degree-seeking—tend to be traditional students, meaning they enroll in college full time immediately after high school and are supported by their parents. As this study will show, on average, about 71 percent of entering students are included in the graduation rate cohort, but this percentage varies considerably by type of institution.² Institutions enrolling large numbers of part-time students, or students who are otherwise not traditional, will have smaller proportions of students represented in the graduation cohort.

For those students who are included in the graduation rate cohort, they must meet the following specific criteria. Full-time undergraduates are students who are enrolled for 12 or more semester credits, 12 or more quarter credits, or 24 or more contact hours a week each term. First-time undergraduates are students who are attending any postsecondary institution for the first time as undergraduates, including those enrolled in academic or occupational programs. Also included in this category are students enrolled in the fall term who had attended college for the first time in the previous summer term and students who entered with advanced standing from high school (i.e., they earned college credits before graduating from high school). Degree- or certificate-seeking students are those enrolled in for-credit courses and are recognized by the institution as seeking a degree or other formal award. This study limits the cohort to those seeking a bachelor’s degree.

¹ It should be noted that the graduation rates reported in this study differ slightly from those shown in a recent NCES publication (Knapp et al. 2006, table 5) because the analysis universe in the current study is more restrictive.

² Discussed later in the report and shown in table 3.

Institutional Comparison Groups

In this study, the institutional comparison groups were formed using three measures: Carnegie classification, institution selectivity, and the proportion of federal grant recipients in the freshman cohort. Each of the three variables, which are described below, was aggregated to three levels, resulting in 27 possible institutional groups.

Carnegie Classification

The 2000 Carnegie Classification, reported in IPEDS-IC was used as a very general indicator of institutional mission (Carnegie Foundation 2001). It was aggregated to simply indicate the degree offerings at an institution as follows (number of institutions are shown in parentheses):

Doctoral	(246)
Master's	(543)
Baccalaureate	(512)
Total	(1,301)

Selectivity

The selectivity measure was developed by Cunningham (2005) for a study comparing changes in prices and aid over time. The measure is based on several IPEDS variables, including the number of applicants; the number of students admitted; the 25th and 75th percentiles of ACT and/or SAT scores; a flag for whether test scores were required;³ and a flag for whether institutions were open admission (see appendix B for more information on how the variable was made). The variable classifies institutions into four selectivity levels—very, moderately, minimally, and open admission. For the current study, open admission institutions were combined with those classified as minimally selective to make three categories.

Proportion of Low-Income Students in the Graduation Rate Cohort

Although there is no direct measure of the size of the low-income population enrolled in postsecondary institutions, there are variables that provide approximations. In the Student Financial Aid (SFA) component of IPEDS, institutions report the percentage of students in the freshman cohort (i.e., full-time, first-time, degree-seeking) receiving federal grant aid. Federal

³ Institutions were required to report test scores only if such scores were required for admission and if 60 percent or more of the entering cohort of students submitted scores for a given test.

grants are awarded almost exclusively to low-income students. Using this measure as a proxy for the percentage of low-income students in the graduation rate cohort, institutions were divided into three levels based roughly on quartiles representing the bottom 25 percent, middle 50 percent, and top 25 percent of institutions, corresponding to small, moderate, and large low-income enrollments as follows:

Small proportion	20 percent or fewer received federal grant aid
Moderate proportion	21–39 percent received federal grant aid
Large proportion	40 percent or more received federal grant aid

Identifying Low-Income Serving Institutions

Because the proportion of federal grant aid recipients in the freshman cohort can be based on as few as 50 students (minimum enrollment required for inclusion in the analysis universe), such a small group may differ substantially from the overall makeup of the undergraduate enrollment. For example, one small institution reported that 79 percent of the freshman cohort was made up of low-income students whereas just 23 percent of the entire 1999 undergraduate population had received Pell Grants (the primary federal grant to low-income students). Conversely, the opposite may occur where institutions with a relatively small low-income freshmen enrollment may enroll a larger proportion of low-income undergraduates. Therefore, an additional criterion based on an institution's entire undergraduate enrollment using Pell Grant data was required to designate institutions as low-income serving.⁴ Low-income serving institutions were identified in one of two ways:

1. institution's 1998 freshman cohort was at least 40 percent low income (federal grant aid recipients) *and* the total undergraduate enrollment (unduplicated 12-month count) in 1999 was at least 25 percent low income (received Pell Grants); *or*
2. regardless of the freshman cohort, at least one-third of the total undergraduate enrollment was low income.⁵

Appendix table B-1 lists all low-income serving institutions by Carnegie classification and selectivity.

Graduation Rate Measures

Table 1 displays three summary measures of the 2004 graduation rates: enrollment weighted averages, unweighted averages, and unweighted median graduation rates. The

⁴ Pell Grant data were obtained from the Office of Postsecondary Education, a division of the U.S. Department of Education, responsible for collecting federal Pell Grant recipient data.

⁵ When institutions were divided into quartiles based on the proportion of the undergraduate population receiving Pell Grants, the top 25 percent of institutions enrolled at least one-third Pell Grant recipients among their 1999 total undergraduate population. These institutions were considered low-income serving.

Table 1. Average and median 6-year graduation rates for 4-year institutions and the number of institutions, by institution selectivity and Carnegie classification: 2004

Carnegie classification	Total	Very selective	Moderately selective	Minimally Selective
Enrollment weighted average graduation rates				
Total	57.2	73.2	52.1	36.8
Doctoral	63.6	75.4	55.1	39.3
Master's	48.4	63.5	48.2	36.3
Bachelor's	56.8	74.9	54.4	35.7
Unweighted institution average graduation rates				
Total	52.3	69.4	50.9	37.1
Doctoral	60.9	74.5	52.9	36.5
Master's	48.4	60.7	49.4	38.4
Bachelor's	52.4	69.8	51.9	35.9
Median institution graduation rates				
Total	51.4	72.7	51.2	36.7
Doctoral	60.3	75.2	53.3	33.7
Master's	48.4	59.8	49.6	39.5
Bachelor's	51.8	74.6	51.9	35.3
Number of institutions				
Total	1,301	292	750	259
Doctoral	246	107	118	21
Master's	543	68	353	122
Bachelor's	512	117	279	116

NOTE: The enrollment weighted average is computed from the sum of all students who completed in 6 years and the corresponding sum of all students in the graduation rate cohorts within a cell. Unweighted rates are averages of institution graduation rates within a cell (i.e., small and large institutions are given equal weight). The median is the rate at the 50th percentile among unweighted institution graduation rates.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

enrollment-weighted average takes into account the size of the freshman cohort upon which the 2004 graduation rate is based. Institutions with larger enrollments are weighted more heavily than those with smaller ones. Weighted graduation rates were used to analyze the relationship between the size of the low-income population and graduation rates. Unweighted average graduation rates, which do not take into account the size of enrollments, were used in only one

instance, to show changes in graduation rates over a 3-year period. Unweighted averages were used for this purpose so that changes in graduation rates would not be affected by differential changes in enrollment. Also reported in the study are unweighted median graduation rates, which are simply the institutional graduation rates that fall in the middle of the distribution, that is, at the 50th percentile. Unlike unweighted averages, which may be skewed by very low or very high rates reported by individual institutions, the median is not affected by such extreme values. Unweighted median rates and other percentile values were used to demonstrate the range of graduation rates across institutions without regard to size of enrollment and to identify “low” and “high” rates within groups of comparable institutions.

Number of Institutions in Comparison Groups

The distribution of institutions within the 27 comparison groups is displayed in table 2. Institutions are shown by selectivity within Carnegie classifications (rows) and each of these categories is broken out into three low-income groups—small, moderate, and large (columns). The largest group (216 institutions) consists of moderately selective master’s institutions with moderate low-income freshman enrollments. The next largest group (152 institutions) consists of moderately selective baccalaureate institutions with moderate low-income freshmen enrollments. Moderately selective master’s and baccalaureate classifications also have large numbers of institutions with large low-income enrollments (97 master’s and 100 baccalaureate institutions).

The smallest groups are made up of minimally selective institutions with small low-income enrollments in each Carnegie classification. Minimally selective institutions, which also include open admission colleges, tend to enroll moderate to large low-income populations, therefore, fewer than 10 minimally selective institutions in each Carnegie classification were identified among institutions with small low-income enrollments. In the detailed analyses, these institutions are combined with institutions with moderate low-income enrollments.

Proportion of Freshman Class Represented in the Graduation Rate Cohort

On average, 71 percent of entering freshmen were included in the 1998 graduation rate cohorts (table 3). These are students identified as full-time, first-time, degree-seeking freshmen who enrolled in the fall of 1998. All other students—nearly 30 percent—are not taken into consideration in determining graduation rates; these students tend to be part-time or less traditional students who complete degrees at much lower rates than traditional students (Berkner, He, and Cataldi 2002). By not counting these students, the graduation rate as a measure of success for all undergraduates would be overestimated. On the other hand, because graduation

Table 2. Number of institutions, by size of low-income enrollment in the 1998 graduation rate cohort, Carnegie classification, and selectivity: 2004

Carnegie classification and selectivity	Size of low-income enrollment in graduation rate cohort ¹			
	Total	Small	Moderate	Large
Total ²	1,301	272	638	391
Doctoral	246	95	116	35
Very selective	107	56	39	12
Moderately selective	118	36	68	14
Minimally selective	21	3	9	9
Master's	543	73	296	174
Very selective	68	27	27	14
Moderately selective	353	40	216	97
Minimally selective	122	6	53	63
Bachelor's	512	104	226	182
Very selective	117	68	33	16
Moderately selective	279	27	152	100
Minimally selective	116	9	41	66

¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.

² All 4-year institutions eligible for Title IV funding with a doctoral, master's, or baccalaureate Carnegie classification, a valid selectivity classification, and with at least 50 full-time freshmen enrolled in 1998.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

rates measure degree completion within institutions, students who transfer from one institution to another are counted as dropouts.⁶ Thus, the overestimation of graduation rates resulting from excluding less traditional students, may be partially offset by also excluding successful transfers.⁷

However, this offset would not necessarily be uniform across institutions because the proportion of admitted freshmen that are not included in the cohort (i.e., they do not meet the full-time, first-time criteria) are not the same across institutions. For example, very selective institutions enroll higher proportions of full-time, first-time students. Among very selective doctoral institutions, on average 77 percent of admitted freshmen are included in the graduation rate cohort, compared with 67 percent of moderately selective institutions. The proportion of

⁶ Moreover, students who leave a 4-year institution to transfer to another 4-year institution are more likely to do so from less selective than from more selective institutions (BPS Data Analysis System). Therefore, both the underestimation of graduation rates due to excluding transfers and the overestimation of graduation rates due to excluding students who do not meet the full-time, first-time criteria may be greater for institutions with large low-income enrollments.

⁷ Systemwide and institution completion rates are compared and discussed later in the report and are shown in figure 1.

Table 3. Average percentage of the freshman class represented in the 1998 graduation rate cohort (i.e., full-time, first-time, degree-seeking students), and the number of institutions, by size of low-income enrollment in the graduation rate cohort, Carnegie classification, and selectivity: 2004

Carnegie classification and selectivity	Size of low-income enrollment in 1998 graduation rate cohort ¹			
	Total	Small	Moderate	Large
	Percent of freshmen in 1998 graduation rate cohort			
Total	71.3	82.3	69.2	67.3
Doctoral	70.9	77.9	66.0	68.0
Very selective	77.3	83.9	69.6	71.1
Moderately selective	67.3	71.3	64.9	69.0
Minimally selective or open	58.5	‡	‡	‡
Master's	66.9	77.7	66.2	63.5
Very selective	75.2	83.1	73.2	63.5
Moderately selective	65.7	75.8	66.1	60.5
Minimally selective or open	65.7	‡	62.9	68.2
Bachelor's	76.3	89.5	74.7	70.7
Very selective	87.0	93.5	78.2	77.1
Moderately selective	73.9	86.2	74.4	69.8
Minimally selective or open	71.3	‡	73.0	70.4

‡ Reporting standards not met (fewer than 10 institutions).

¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

freshmen included in the graduation rate cohorts also tended to decline as the size of the low-income enrollments increased. This means that institutions with large low-income enrollments also enrolled larger proportions of students who were not counted in the graduation rate. Among the largest group of institutions (moderately selective master's institutions), for example, 76 percent of entering freshmen were included in the graduation cohorts among institutions with small low-income enrollments, whereas institutions with moderate and large low-income enrollments included 66 and 61 percent of freshmen in their cohorts, respectively.

This pattern was not evident across all comparison groups, however. Among moderately selective doctoral institutions, those with large low-income enrollments reported higher proportions of entering freshmen (69 percent) in their graduation rate cohorts than did institutions with moderate low-income enrollments (65 percent). Similarly, among minimally

selective master's institutions, about 68 percent of entering freshmen were included in the graduation rate cohorts for institutions with large low-income enrollments, compared with 63 percent for institutions with moderate low-income enrollments.

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How Graduation Rates Vary

Among the 1,301 institutions included in this study, the average weighted graduation rate in 2004 was 57 percent (table 4). This graduation rate reflects the bachelor's degree completion rate of full-time, first-time, bachelor's degree-seeking freshmen who first enrolled in a 4-year college or university in fall 1998 and graduated from the same institution by 2004 (i.e., within 6 years). For these students, just under 60 percent completed a bachelor's degree in 6 years.

Table 4. Enrollment weighted average 6-year graduation rates for 4-year institutions, by size of low-income enrollment in the 1998 graduation rate cohort, Carnegie classification, and selectivity: 2004

Carnegie classification and selectivity	Size of low-income enrollment in 1998 graduation rate cohort ¹			
	Total	Small	Moderate	Large
Total	57.2	70.2	53.8	42.3
Doctoral	63.6	70.6	59.3	49.7
Very selective	75.4	79.6	71.7	63.5
Moderately selective	55.1	60.0	52.2	48.3
Minimally selective or open	39.3	‡	‡	‡
Master's	48.4	63.0	48.2	39.1
Very selective	63.5	71.1	60.6	48.3
Moderately selective	48.2	58.4	49.2	39.7
Minimally selective or open	36.3	‡	37.5	35.2
Bachelor's	56.8	77.0	53.6	40.1
Very selective	74.9	82.0	62.5	51.3
Moderately selective	54.4	69.2	56.6	43.7
Minimally selective or open	35.7	‡	39.9	31.0

‡ Reporting standards not met (fewer than 10 institutions).

¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

Carnegie Classification and Selectivity

Within Carnegie classifications, graduation rates varied as would be expected by selectivity levels. In very selective doctoral and baccalaureate institutions, 75 percent of the 1998 cohorts had graduated by 2004, whereas among moderately selective institutions, the graduation rate for both doctoral and baccalaureate institutions was 55 percent. Graduation rates for comparable master's institutions were 64 and 48 percent, respectively. Graduation rates for minimally selective institutions ranged from 36 to 39 percent across the three Carnegie classifications.

Graduation Rates by Size of Low-Income Enrollment

Within Carnegie classifications and selectivity levels, graduation rates were inversely related to the size of low-income enrollments in the graduation rate cohorts; that is, graduation rates declined as the size of low-income enrollments increased. For example, as shown in table 4, average graduation rates among very selective doctoral institutions dropped from 80 to 72 to 63 percent for institutions with small, moderate, and large low-income enrollments. Likewise, graduation rates for very selective master's institutions declined from 10 to 12 percentage points at each successive level: from 71 to 61 to 48 percent for institutions with small, moderate, and large low-income enrollments.

These patterns also were evident for the two largest groups of institutions: moderately selective master's institutions declined from 58 to 49 to 40 percent for institutions with small, moderate, and large low-income enrollments. The decline was even steeper for moderately selective baccalaureate institutions, with rates dropping more than 10 percentage points at each level of low-income enrollment. Similar though smaller drops in graduation rates were found for minimally selective baccalaureate institutions.

High and Low Graduation Rates

The relative differences of graduation rates can be illustrated further by examining rates within percentile distributions for each comparison group and for all institutions. For example, table 5 displays the graduation rates for the 10th, 25th, 50th (median), 75th, and 90th percentiles for all institutions, and for those within each comparison group. A graduation rate at the 75th percentile means that 25 percent of the institutions reported graduation rates at that rate or higher (the top 25 percent), whereas a graduation rate at the 25th percentile means that 25 percent of institutions reported rates at that rate or lower (bottom 25 percent). For the purposes of this report, rates at the 25th and 75th percentiles might be considered the low and high cutoffs,

Table 5. Six-year graduation rates at selected percentiles for 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004

Carnegie classification, selectivity, and size of low-income enrollment ¹	Percentiles				
	10th	25th	50th	75th	90th
Total	29.6	39.6	51.4	64.5	76.7
Doctoral	37.6	47.2	60.3	73.7	86.7
Very selective	55.0	65.0	75.2	86.3	92.6
Size of low-income enrollment					
Small	67.3	73.2	84.7	92.1	95.1
Moderate	52.9	59.9	69.6	78.6	81.5
Large	34.8	53.7	58.5	73.9	80.8
Moderately selective	37.6	44.6	53.3	62.1	68.0
Size of low-income enrollment					
Small	39.7	50.4	59.0	67.8	72.5
Moderate	37.6	44.1	51.4	59.6	64.4
Large	25.9	38.7	46.9	54.4	64.4
Minimally selective	21.4	27.0	33.7	44.6	51.5
Size of low-income enrollment					
Small and moderate	25.3	33.5	40.6	48.6	55.0
Large	‡	‡	‡	‡	‡
Master's	29.5	37.8	48.4	58.0	67.1
Very selective	39.4	49.8	59.8	73.6	80.1
Size of low-income enrollment					
Small	55.1	60.3	73.3	80.0	83.3
Moderate	41.3	49.8	58.5	65.0	74.7
Large	30.4	39.4	49.7	52.0	62.7
Moderately selective	33.3	40.1	49.6	58.1	66.7
Size of low-income enrollment					
Small	40.6	51.1	61.6	65.8	71.7
Moderate	36.6	43.2	50.8	58.0	67.1
Large	29.5	34.4	40.1	50.6	58.1
Minimally selective	19.5	28.6	39.5	47.1	54.3
Size of low-income enrollment					
Small and moderate	21.2	29.4	42.9	49.5	55.4
Large	17.9	27.5	34.7	44.7	50.5

See notes at end of table.

Table 5. Six-year graduation rates at selected percentiles for 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004
—Continued

Carnegie classification, selectivity, and proportion of low-income students enrolled ¹	Percentiles				
	10th	25th	50th	75th	90th
Bachelor's	27.5	38.3	51.8	66.5	78.3
Very selective	40.8	61.9	74.6	84.3	89.7
Size of low-income enrollment					
Small	67.5	75.4	83.4	88.4	90.5
Moderate	32.1	47.1	63.7	69.1	75.2
Large	23.0	27.5	41.3	53.0	64.6
Moderately selective	32.4	41.2	51.9	62.7	70.2
Size of low-income enrollment					
Small	57.7	62.5	70.1	75.5	77.3
Moderate	34.2	44.8	56.0	63.7	70.1
Large	28.7	36.4	43.4	50.8	59.8
Minimally selective	15.8	23.5	35.3	45.2	55.0
Size of low-income enrollment					
Small and moderate	22.9	29.7	41.1	50.9	63.0
Large	12.9	18.9	30.6	42.3	51.1

‡ Reporting standards not met (fewer than 10 institutions).

¹ The size of the low-income population is based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more. For minimally selective institutions, because of small sample sizes, small and moderate low-income levels were combined.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

respectively. For all institutions, then, a low graduation rate would be below 40 percent, while a high rate would be 65 percent or higher.

As would be expected, graduation rates at each selected percentile varied by the selectivity of the institution and the size of the low-income enrollment. For instance, the high graduation rate (i.e., the rate at the 75th percentile) for minimally selective master's institutions with large low-income enrollments was 45 percent, and the low rate (i.e., rate at the 25th percentile) was 28 percent. At the other end of the spectrum were the rates for the very selective doctoral institutions with small low-income enrollments: the high rate was 92 percent, and the low rate was 73 percent. For the largest group of institutions—moderately selective master's institutions with moderate low-income enrollments—the high graduation rate was 58 percent, and the low rate was 43 percent. Overall, the high graduation rate (75th percentile) ranged from 42 percent for minimally selective baccalaureate institutions with large low-income enrollments to 92 percent for very selective doctoral institutions with small low-income enrollments.

Three-Year Trends

The institutional average 6-year graduation rate for 4-year institutions changed very little over the 3 years between 2002 and 2004 (table 6).⁸ For all institutions, the average remained at about 52 percent. Even within comparison groups, graduation rates remained steady across the 3 years. For example, among moderately selective master's institutions with large low-income enrollments, the graduation rates for the 3 years were 41, 42, and 42 percent, respectively.

Table 6. Unweighted average 6-year graduation rates for 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the graduation rate cohort: 2002, 2003, and 2004

Carnegie classification, selectivity, and size of low-income enrollment ¹	2002	2003	2004
Total	51.8	52.1	52.3
Doctoral	59.6	60.3	60.9
Very selective	73.0	74.2	74.5
Size of low-income enrollment			
Small	80.8	81.3	81.8
Moderate	65.8	68.0	68.3
Large	59.8	61.3	61.2
Moderately selective	51.7	52.5	52.9
Size of low-income enrollment			
Small	57.5	58.5	58.8
Moderate	49.8	50.6	51.1
Large	45.9	46.4	46.4
Minimally selective	35.7	33.9	36.5
Size of low-income enrollment			
Small and moderate	41.1	38.7	41.9
Large	‡	‡	‡

See notes at end of table.

⁸ In these years, nearly all institutions reported graduation rates, thus they are not subject to nonresponse bias.

Table 6. Unweighted average 6-year graduation rates for 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the graduation cohort: 2002, 2003, and 2004
—Continued

Carnegie classification, selectivity, and size of low-income enrollment ¹	2002	2003	2004
Master's	46.9	48.3	48.4
Very selective	59.5	60.9	60.7
Size of low-income enrollment			
Small	67.9	68.5	69.9
Moderate	57.9	59.1	58.5
Large	46.9	48.5	47.4
Moderately selective	48.0	49.4	49.4
Size of low-income enrollment			
Small	58.1	60.6	59.6
Moderate	49.3	50.6	50.9
Large	41.0	42.1	42.1
Minimally selective	37.0	38.4	38.4
Size of low-income enrollment			
Small and moderate	39.0	39.3	40.3
Large	35.1	37.5	36.6
Bachelor's	53.2	52.2	52.4
Very selective	69.6	69.4	69.8
Size of low-income enrollment			
Small	79.6	80.6	81.0
Moderate	59.3	57.8	59.3
Large	47.2	45.8	43.9
Moderately selective	52.1	51.0	51.9
Size of low-income enrollment			
Small	69.0	69.5	67.4
Moderate	53.4	53.7	54.5
Large	45.5	41.6	43.8
Minimally selective	38.9	37.9	35.9
Size of low-income enrollment			
Small and moderate	43.8	40.3	41.9
Large	35.2	36.0	31.3

‡ Reporting standards not met (fewer than 10 institutions).

¹ The size of the low-income population is based on the percent of federal grant aid recipients in the 1998 graduation rate cohort because this is the first year that the information was reported: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more. For minimally selective institutions, because of small sample sizes, small and moderate low-income levels were combined.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

Graduation Rates by Sector, Gender, and Race/Ethnicity

Institution Sector

Results comparing graduation rates between sectors, grouped by Carnegie classification, institutional selectivity, and size of low-income enrollments, indicate that private not-for-profit institutions consistently graduated greater proportions of their 1998 cohorts than did public institutions. The differences in rates were roughly 10 to 12 percentage points. Only among very selective doctoral institutions with moderate low-income enrollments did public institutions report graduation rates on par with private-sector institutions (72 vs. 71 percent).

However, the differences observed in graduation rates between the public and private sectors may reflect, in part, differences in various risk factors of students (such as being the first in a family to go to college and delaying postsecondary enrollment). Studies have shown that students who enroll in public 4-year institutions are more likely than those in private not-for-profit 4-year institutions to carry risk factors associated with lower rates of persistence and degree completion (Berkner, He, and Cataldi 2002; Horn and Berger 2004). For example, among the Beginning Postsecondary Student (BPS) cohort of first-time students who enrolled in 4-year colleges in 1995–96, those in public institutions were more likely than their counterparts in private not-for-profit institutions to be the first in their family to attend college, to have delayed their postsecondary enrollment by a year or more after high school graduation, and to report taking remedial courses in their first 2 years of college—all of which are associated with diminished 6-year degree completion (Berkner, He, and Cataldi 2002).

Moreover, evidence from a more recent study indicates gains in persistence for low-income students attending public 4-year colleges, but not for their low-income peers attending comparable private not-for-profit institutions (Horn and Berger 2004). The study compared two nationally representative surveys of first-time freshmen cohorts who enrolled 6 years apart (BPS:90/94 and BPS:96/01) and showed that low-income students who began their postsecondary education in a public 4-year institution had increased their overall persistence rates between the two cohorts (Horn and Berger 2004, table 7). The same was not observed for middle- and high-income students in public institutions, nor was it observed for low-income students who first enrolled in a private not-for-profit 4-year institution. On the contrary, in private not-for-profit institutions, high-income students demonstrated a gain in degree

Table 7. Enrollment weighted average 6-year graduation rates for public and private not-for-profit 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004

Carnegie classification, selectivity, and size of low-income enrollment ¹	Graduation rates		Number of institutions	
	Public	Private not-for-profit	Public	Private not-for-profit
Total	53.2	64.9	488	813
Doctoral	60.1	76.9	162	84
Very selective	72.6	80.8	48	59
Size of low-income enrollment				
Small	74.8	87.5	21	35
Moderate	72.0	70.9	20	19
Large	‡	‡	7	5
Moderately selective	54.2	63.9	96	22
Size of low-income enrollment				
Small	58.9	71.4	29	7
Moderate	51.5	59.9	56	12
Large	47.0	55.0	11	3
Minimally selective	39.2	44.7	18	3
Size of low-income enrollment				
Small and moderate	45.2	‡	10	2
Large	‡	‡	8	1
Master's	44.1	57.8	255	288
Very selective	59.0	69.5	30	38
Size of low-income enrollment				
Small	‡	75.5	8	19
Moderate	59.6	61.8	11	16
Large	47.1	‡	11	3
Moderately selective	44.3	56.4	150	203
Size of low-income enrollment				
Small	50.9	65.5	13	27
Moderate	46.3	56.0	90	126
Large	36.6	48.4	47	50
Minimally selective	34.6	43.4	75	47
Size of low-income enrollment				
Small and moderate	35.6	44.1	36	23
Large	33.1	42.6	39	24

See notes at end of table.

Table 7. Enrollment weighted average 6-year graduation rates for public and private not-for-profit 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004—Continued

Carnegie classification, selectivity, and size of low-income enrollment ¹	Graduation rates		Number of institutions	
	Public	Private not-for-profit	Public	Private not-for-profit
Bachelor's	36.4	61.4	71	441
Very selective	‡	76.7	8	109
Size of low-income enrollment				
Small	‡	82.5	2	66
Moderate	‡	65.1	4	29
Large	‡	52.0	2	14
Moderately selective	40.7	56.4	24	255
Size of low-income enrollment				
Small	‡	69.2	0	27
Moderate	‡	57.7	7	145
Large	40.8	45.0	17	83
Minimally selective	29.4	41.4	39	77
Size of low-income enrollment				
Small and moderate	30.0	51.8	18	32
Large	28.5	32.6	21	45

‡ Reporting standards not met (fewer than 10 institutions).

¹ Based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

completion and persistence, which was not experienced by middle- or low-income students (Horn and Berger 2004, table 8).

Gender

Enrollment

In 1998, the year the 2004 graduation rate cohort first enrolled in postsecondary education, women made up 55 percent of the freshmen cohorts (table 8). Within the three Carnegie classifications, women were most highly represented in master's institutions (58 percent) and baccalaureate institutions (57 percent),⁹ and they were least represented in doctoral institutions

⁹ Just over one-half of all women's colleges (32 of 59) in the universe of institutions included this analysis are moderately or very selective baccalaureate institutions, which skews the average upwards to some degree for these groups.

Table 8. Enrollment weighted percentage of women, average graduation rates by gender, and female/male gap in rates in 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004

Carnegie classification, selectivity, and size of low-income enrollment ¹	Percent women in cohort	Graduation rates		Gap in graduation rates
		Women	Men	
Total	55.4	59.9	53.7	6.2
Doctoral	53.4	66.1	60.7	5.4
Very selective	52.3	77.9	72.7	5.2
Size of low-income enrollment				
Small	51.8	81.4	77.7	3.7
Moderate	53.9	75.0	67.7	7.3
Large	48.3	66.6	60.6	6.1
Moderately selective	54.3	57.9	51.7	6.3
Size of low-income enrollment				
Small	53.8	62.7	56.9	5.7
Moderate	54.0	55.2	48.6	6.6
Large	58.5	51.9	43.3	8.5
Minimally selective	53.8	42.8	35.3	7.4
Size of low-income enrollment				
Small and moderate	54.3	48.3	41.6	6.7
Large	‡	‡	‡	‡
Master's	57.6	51.8	43.7	8.1
Very selective	57.1	66.4	59.6	6.9
Size of low-income enrollment				
Small	57.6	73.0	68.4	4.7
Moderate	56.4	63.9	56.4	7.5
Large	56.9	53.0	42.0	11.0
Moderately selective	57.8	51.7	43.3	8.4
Size of low-income enrollment				
Small	56.3	61.0	55.1	5.9
Moderate	57.6	52.8	44.4	8.4
Large	59.2	44.1	33.3	10.7
Minimally selective	57.4	39.9	31.4	8.5
Size of low-income enrollment				
Small and moderate	57.2	40.4	32.5	7.9
Large	57.6	39.2	29.7	9.5

See notes at end of table.

Table 8. Enrollment weighted percentage of women, average graduation rates by gender, and female/male gap in rates in 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004—Continued

Carnegie classification, selectivity, and size of low-income enrollment ¹	Percent women in cohort	Graduation rates		Gap in graduation rates
		Women	Men	
Bachelor's	57.1	60.1	52.5	7.6
Very selective	57.1	76.7	72.6	4.0
Size of low-income enrollment				
Small	57.6	82.9	80.8	2.1
Moderate	58.6	64.9	59.2	5.6
Large	49.3	55.6	47.1	8.4
Moderately selective	57.2	58.2	49.2	8.9
Size of low-income enrollment				
Small	54.9	71.0	67.2	3.8
Moderate	57.6	60.8	50.9	10.0
Large	57.8	48.1	37.6	10.5
Minimally selective	56.8	39.7	30.4	9.3
Size of low-income enrollment				
Small and moderate	56.4	44.4	34.1	10.3
Large	57.2	34.6	26.2	8.4

‡ Reporting standards not met (fewer than 10 institutions).

¹ The size of the low-income population is based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more. For minimally selective institutions, because of small sample sizes, small and moderate low-income levels were combined.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

(53 percent). In only one group of institutions—very selective doctoral institutions with large low-income enrollments—did men’s enrollment exceed that of women (52 vs. 48 percent).

Graduation Rates

The weighted average 6-year graduation rate for women was 60 percent, about 6 percentage points higher than the comparable rate for men (table 8). In general, as the proportion of low-income students increased, so did the gap in graduation rates between women and men. For example, among moderately selective master’s institutions, the gap increased from 6 to 8 to 11 percentage points for institutions with small, moderate, and large low-income enrollments.

The smallest gap in graduation rates (about 2 percentage points) was observed for very selective baccalaureate institutions with small low-income enrollments, whereas the largest gap (about 11 percent percentage points) was found for several groups of institutions, all with large

low-income enrollments (very selective master's, moderately selective master's, and moderately selective baccalaureate institutions). In other words, the gender gap was greatest in institutions with large low-income enrollments.¹⁰

Race/Ethnicity

Enrollment

In 1998, the overall racial/ethnic composition of the freshman cohort was 72 percent White, 11 percent Black, 6 percent each Hispanic and Asian, and 1 percent American Indian students (table 9). Black and Hispanic students were most highly represented in institutions with large low-income enrollments. For example, in moderately selective institutions with large low-income enrollments, Black students constituted roughly one-quarter of the freshmen cohorts in doctoral and master's institutions and 29 percent of the cohorts in baccalaureate institutions. In contrast, Black students made up between 2 and 5 percent of the freshmen cohorts in moderately selective institutions with small low-income enrollments.

Black students were most prevalent in baccalaureate institutions with large low-income enrollments, where they made up 50 percent of freshmen in very selective institutions (16 institutions) and 35 percent in minimally selective institutions (66 institutions). These two groups of institutions encompass many of the Historically Black Colleges and Universities (HBCUs).

Hispanic students tended to concentrate in moderately selective doctoral and master's institutions with large low-income enrollments. In these institutions, Hispanic students made up 14 and 11 percent of the freshmen cohorts, respectively. In contrast, Hispanic students made up 3 to 5 percent in comparable institutions with small low-income enrollments. Hispanic students were least represented in baccalaureate institutions, where they made up 3 percent of all students enrolled.

Enrollment patterns with respect to the size of the low-income freshmen populations were not as obvious for Asian or American Indian students. Overall, Asian students were most concentrated in very selective doctoral institutions with moderate low-income enrollments, where they accounted for 16 percent of students, compared with 6 percent overall. The largest proportion of American Indian students (2.6 percent) was observed in minimally selective master's institutions with large low-income enrollments.

¹⁰ An exception to this pattern was found for minimally selective baccalaureate institutions, in which the gender gap was narrower for institutions with large low-income enrollments than for smaller low-income enrollments.

Table 9. Enrollment weighted average proportion of racial/ethnic groups in 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004

Carnegie classification, selectivity, and size of low-income enrollment ¹	Percent in cohort				
	White	Black	Hispanic	Asian	American Indian
Total	71.9	10.6	5.7	5.9	0.7
Doctoral	71.1	8.4	5.9	8.3	0.7
Very selective	66.6	7.2	6.0	12.3	0.5
Size of low-income enrollment					
Small	72.5	6.5	4.8	9.7	0.4
Moderate	59.3	7.0	8.0	16.2	0.6
Large	60.1	13.9	4.7	11.4	0.3
Moderately selective	75.4	9.0	5.5	5.3	0.9
Size of low-income enrollment					
Small	81.2	5.5	3.8	5.1	0.7
Moderate	76.2	8.9	5.5	4.5	1.1
Large	43.3	26.0	13.8	10.5	0.4
Minimally selective	70.7	13.3	7.9	1.7	0.8
Size of low-income enrollment					
Small and moderate	80.2	8.7	1.9	1.8	1.1
Large	58.3	19.3	15.9	1.5	0.5
Master's	71.2	12.7	6.5	3.9	0.8
Very selective	76.8	9.2	4.8	4.4	0.3
Size of low-income enrollment					
Small	85.6	4.0	2.7	3.2	0.3
Moderate	77.7	9.3	4.2	3.8	0.5
Large	49.2	24.1	12.6	9.2	0.2
Moderately selective	72.0	11.3	6.4	4.5	0.6
Size of low-income enrollment					
Small	84.8	5.3	2.7	2.8	0.4
Moderate	76.0	7.9	5.5	4.8	0.6
Large	53.6	24.5	10.9	4.5	0.8
Minimally selective	64.1	20.1	8.1	1.8	1.5
Size of low-income enrollment					
Small and moderate	76.5	9.6	5.7	1.7	0.8
Large	45.7	35.5	11.6	2.0	2.6

See notes at end of table.

Table 9. Enrollment weighted average proportion of racial/ethnic groups in 4-year institutions, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004—Continued

Carnegie classification, selectivity, and size of low-income enrollment ¹	Percent in cohort				
	White	Black	Hispanic	Asian	American Indian
Bachelor's	76.0	12.4	3.2	2.7	0.6
Very selective	77.1	8.2	3.4	4.8	0.4
Size of low-income enrollment					
Small	80.3	3.9	3.5	5.5	0.3
Moderate	80.2	4.6	3.8	4.3	0.6
Large	43.5	50.5	1.1	1.0	0.5
Moderately selective	78.5	12.1	2.5	1.9	0.5
Size of low-income enrollment					
Small	89.6	2.5	1.3	1.9	0.3
Moderate	86.1	4.3	2.4	2.0	0.5
Large	60.6	29.5	3.3	1.8	0.6
Minimally selective	68.2	19.7	4.6	1.5	1.3
Size of low-income enrollment					
Small and moderate	81.6	6.4	3.8	1.7	1.7
Large	53.2	34.6	5.5	1.2	0.8

‡ Reporting standards not met (fewer than 10 institutions).

¹ The size of the low-income population is based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more. For minimally selective institutions, because of small sample sizes, small and moderate low-income levels were combined.

NOTE: Black includes African American, Hispanic includes Latino, and Asian includes Native Hawaiian or Other Pacific Islander. Race categories exclude Hispanic origin unless specified.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

Graduation Rates

Within each racial/ethnic group, as with all students, graduation rates tended to decline as the overall proportion of low-income students in the cohort increased (table 10). For instance, among very selective doctoral institutions, the graduation rates for Black students declined from 68 to 63 to 47 percent for institutions with small, moderate, and large low-income enrollments, respectively.

Regardless of Carnegie classification, selectivity of the institution, and the size of the low-income population in the cohort, White and Asian students tended to graduate at higher rates than Black and Hispanic students. The average gap in graduation rates between White and Black students was 18 percentage points, and between White and Hispanic students was 12 percentage

Table 10. Enrollment weighted average 6-year graduation rates for racial/ethnic groups, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004

Carnegie classification, selectivity, and size of low-income enrollment ¹	Graduation rates					White/ Black Gap	White/ Hispanic Gap
	White	Black	Hispanic	Asian	American Indian		
Total	59.6	41.2	47.6	66.2	38.6	18.5	12.0
Doctoral	65.0	48.1	55.4	72.5	43.9	16.9	9.6
Very selective	76.6	63.0	68.9	80.6	59.7	13.5	7.6
Size of low-income enrollment							
Small	80.5	68.2	74.3	83.7	61.2	12.3	6.2
Moderate	71.1	62.6	66.8	79.4	57.8	8.5	4.3
Large	68.4	46.7	47.5	68.9	60.3	21.8	21.0
Moderately selective	57.6	40.8	46.1	56.0	38.4	16.8	11.5
Size of low-income enrollment							
Small	62.1	42.4	50.5	57.0	39.9	19.7	11.6
Moderate	54.2	40.3	42.4	54.6	37.7	14.0	11.8
Large	50.7	40.3	48.7	56.7	38.3	10.4	2.0
Minimally selective	44.0	23.1	27.2	41.4	18.2	20.9	16.8
Size of low-income enrollment							
Small and moderate	48.1	30.3	34.6	43.1	18.6	17.7	13.5
Large	‡	‡	‡	‡	‡	17.9	10.7
Master's	51.9	35.7	38.0	48.4	32.8	16.2	13.9
Very selective	66.5	47.1	52.7	62.7	48.5	19.4	13.8
Size of low-income enrollment							
Small	72.1	56.8	68.8	70.3	58.9	15.3	3.3
Moderate	62.1	51.2	54.8	65.1	44.9	10.9	7.2
Large	54.5	38.5	40.8	52.4	33.3	16.0	13.7
Moderately selective	51.4	35.3	39.5	46.4	35.4	16.1	11.9
Size of low-income enrollment							
Small	59.9	42.0	51.2	59.2	47.6	18.0	8.7
Moderate	51.7	37.7	39.7	46.6	35.1	14.0	12.0
Large	43.2	32.3	37.7	41.3	32.6	10.8	5.5
Minimally selective	39.0	31.9	26.9	35.6	26.6	7.1	12.1
Size of low-income enrollment							
Small and moderate	39.1	25.1	30.3	36.8	25.3	14.0	8.8
Large	38.8	34.6	24.3	34.1	27.2	4.2	14.5

See notes at end of table.

Table 10. Enrollment weighted average 6-year graduation rates for racial/ethnic groups, by Carnegie classification, selectivity, and size of low-income enrollment in the 1998 graduation rate cohort: 2004—Continued

Carnegie classification, selectivity, and size of low-income enrollment ¹	Graduation rates					White/ Black Gap	White/ Hispanic Gap
	White	Black	Hispanic	Asian	American Indian		
Bachelor's	60.2	39.1	46.4	62.7	36.1	21.1	13.7
Very selective	76.4	60.3	71.2	78.8	62.0	16.1	5.2
Size of low-income enrollment							
Small	82.4	76.1	78.1	84.1	73.5	6.3	4.4
Moderate	63.6	52.5	55.9	61.1	49.2	11.0	7.7
Large	49.8	52.5	35.4	46.5	35.0	-2.7	14.4
Moderately selective	58.1	37.3	41.6	46.2	40.1	20.8	16.5
Size of low-income enrollment							
Small	70.4	57.1	54.0	64.0	62.5	13.3	16.4
Moderate	58.8	37.5	42.8	44.8	38.2	21.3	15.9
Large	47.9	36.5	37.9	39.7	37.3	11.4	10.0
Minimally selective	38.6	28.6	25.7	37.5	20.0	10.0	12.9
Size of low-income enrollment							
Small and moderate	41.1	33.2	29.9	41.2	19.5	7.9	11.2
Large	34.2	27.6	22.3	31.5	21.0	6.6	11.9

‡ Reporting standards not met (fewer than 10 institutions)

¹ The size of the low-income population is based on the percent of federal grant aid recipients in graduation rate cohort: small = 20 percent or less, moderate = 21 to 39 percent, large = 40 percent or more. For minimally selective institutions, because of small sample sizes, small and moderate low-income levels were combined.

NOTE: Black includes African American, Hispanic includes Latino, and Asian includes Native Hawaiian or Other Pacific Islander. Race categories exclude Hispanic origin unless specified.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

points.¹¹ However, in very selective baccalaureate institutions with large low-income enrollments, which includes many Historically Black Colleges and Universities, the graduation rate for Black students was slightly higher than for White students (53 vs. 50 percent).

The gap in graduation rates between White and Hispanic students was narrowest (2 percentage points) in moderately selective doctoral institutions with large low-income enrollments. At these institutions, the graduation rates for White and Hispanic students were 51 and 49 percent, respectively; correspondingly, these institutions also enrolled a relatively larger proportion of Hispanic students (14 vs. 6 percent overall) (table 9).

¹¹ Graduation rate gaps are calculated from the weighted graduation rates. The graduation rates are calculated across all institutions within each comparison group by adding the number of students in each racial/ethnic group who graduated divided by the total number enrolled in each group. Gaps are simple subtractions of the weighted graduation rates.

Among moderately selective master's institutions—the group with the largest number of institutions and the largest number of students—the White/Black graduation gap ranged from a low of 11 percentage points in institutions with large low-income enrollments to a high of 18 percentage points for institutions with small low-income enrollments.

While Asian students tended to graduate at higher rates than White students in very selective doctoral institutions (81 vs. 77 percent), where Asian students made up 12 percent of the freshman population (table 9), this pattern was not generally observed in other types of institutions. For example, in moderately selective doctoral institutions, where Asian students represented 5 percent of the freshman population, graduation rates for Asian students were slightly lower than those of White students (56 vs. 58 percent) (table 10). Similarly, in very selective master's institutions, where Asian students constituted about 4 percent of the freshman population (table 9), their graduation rate was 63 percent, compared with 66 percent for White students (table 10).

Because of their small numbers in 4-year colleges and universities, it is difficult to characterize the patterns of graduation rates for American Indian students. The average graduation rate for these students was 39 percent, the lowest rate among all the racial/ethnic groups. American Indians attending very selective doctoral institutions graduated at the highest rate—60 percent—while those attending minimally selective doctoral institutions graduated at the lowest rate—18 percent. However, it should be noted that 4-year tribal colleges, which serve American Indian students exclusively, were not represented in the study. These institutions carry a separate Carnegie classification and therefore are not included among institutions classified as doctoral, master's, or baccalaureate. Most tribal colleges, however, are in the 2-year sector.

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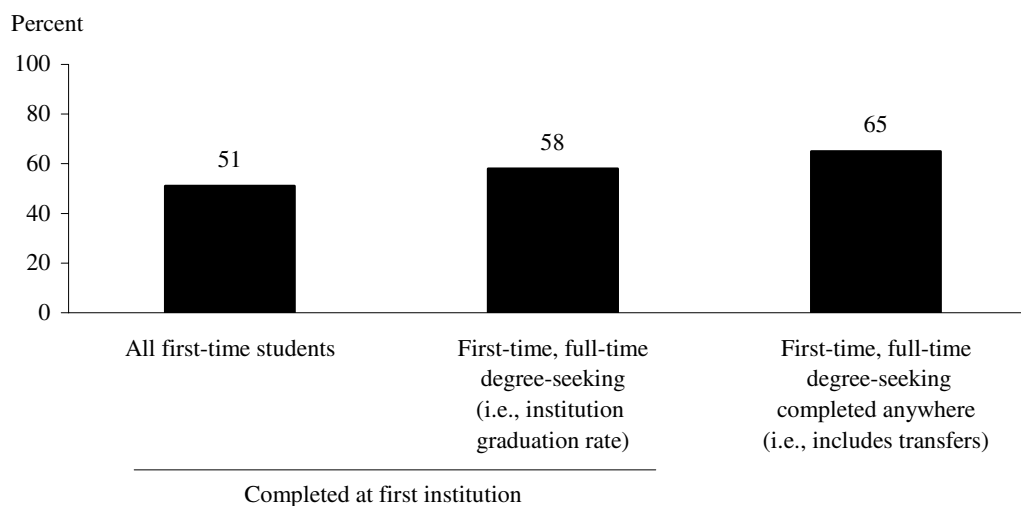
Graduation Rates Versus Student Completion Rates

Although the focus of the report is on graduation rates and how these rates vary with institutional selectivity and low-income enrollment, there are many students enrolled in colleges and universities who are not included in these graduation rate calculations, and thus these rates may not tell the whole story. In particular, students who transfer from one institution to another, regardless of whether they successfully earn a degree at the second institution, are counted as dropouts. While a transfer may represent a failure on the part of the initial institution to retain the student, transferring may mean that the student found a more suitable academic and/or social fit. Findings from the nationally representative Beginning Postsecondary Students Longitudinal Study (BPS) of first-time freshmen enrolled in 4-year institutions in 1995–96 show that about 23 percent of students who initially enrolled in a 4-year institution transferred to another institution within 6 years and that 63 percent of transfers had earned a bachelor’s degree (Berkner, He, and Cataldi 2002, table 1).

Using the same BPS data and looking only at those who enrolled for the first time as full-time students with bachelor’s degree goals (i.e., similar to those included in the graduation rate cohorts), the average graduation rate was 58 percent (figure 1). When transfers are included, the completion rate rises to 65 percent, or 7 percentage points higher. Furthermore, if the time to degree completion were extended beyond 6 years, the rate might increase further. Findings from a survey of college graduates who earned a bachelor’s degree in 1999–2000—the Baccalaureate and Beyond Longitudinal Study (B&B)—indicate that those who transferred from a public 4-year institution took an average of 8.5 years to obtain a degree and those who transferred from a private not-for-profit institution took an average of 6.8 years (Peter and Cataldi 2005, table 8-C). Thus it is likely that the bachelor’s degree completion rate would be higher if the time frame were extended beyond 6 years.

On the other hand, as discussed earlier, nearly 30 percent of admitted freshmen were excluded from the 1998 freshmen cohorts on which the 2004 graduation rates are based. These students do not meet the definition of full-time, first-time, degree-seeking freshmen enrolled in the fall. Taking into account the outcomes of these students would likely reduce the graduation rate. To illustrate, figure 1 shows the completion rate for all first-time freshmen including those who began their college enrollment on a part-time basis or who did not have a bachelor’s degree

Figure 1. Bachelor's degree 6-year completion rates among 1995–96 beginning postsecondary students who first enrolled in a 4-year institution: 2001



NOTE: Standard error tables are available at <http://nces.ed.gov/das/library/reports.asp>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

goal.¹² Among these students, 51 percent completed a bachelor's degree in their first institution, or about 7 percentage points lower than the graduation rate reported for first-time, full-time, degree-seeking students. Taken together, data from BPS indicate that excluding students from the freshman cohorts who do not meet the full-time, first-time, degree-seeking criteria, may offset the increase in rates if successful transfers were included. However, this offset would not necessarily be uniform across all institutions. Depending on the selectivity and other characteristics of colleges and universities, the proportion of students not included in the graduation rate cohort (e.g., part-time, returning students) and the proportion of students who transfer to another institution would naturally vary.

¹² The BPS rate, however, does not include students who may have returned to postsecondary education as freshmen after dropping out.

Low-Income Serving Institutions

In the report by the Secretary of Education’s Commission on the Future of Higher Education (U.S. Department of Education 2006), states and institutions are encouraged to develop initiatives to improve the access and success of low-income students. In light of this focus on the participation of low-income students, this study identifies institutions that enroll large concentrations of low-income undergraduates. These institutions are designated as “low-income serving” (see Appendix A for a definition of low-income serving).

Among the institutions included in this study, just over one-fourth or 319 met the definition of “low-income serving.”¹³ The likelihood of an institution being identified as low-income serving rose as selectivity declined. Nearly one-half (107 of 231) of the least selective institutions were low-income serving, as were 27 percent (185 of 690) of the moderately selective institutions and 11 percent (27 of 255) of the very selective institutions (table 11).

Compared with other institutions, those identified as low-income serving were more likely to be either public (38 vs. 33 percent) or private with religious affiliations (49 vs. 43 percent) and they enrolled larger proportions of minority students (41 vs. 18 percent). About one-fifth of low-income serving institutions were HBCUs, compared with less than 1 percent of other institutions, and, on average, low-income serving institutions tended to have smaller undergraduate FTEs than other institutions.

Institutions With High Graduation Rates

The median graduation rate for low-income serving institutions as a whole was 39 percent, and the rate at the 75th percentile was 49 percent (table 12). This study identified low-income serving institutions with very high graduation rates as those that fell in the top 10 percent of their selectivity level (i.e., institutions with graduation rates at or above the 90th percentile). The graduation rates at the 90th percentile for each selectivity level were as follows: 75 percent for very selective institutions, 59 percent for moderately selective institutions, and 48 percent for minimally selective institutions. In total, 35 institutions reported such high graduation rates.¹⁴

¹³ All low-income serving institutions are listed in appendix table B-1.

¹⁴ Graduation rates were rounded within each selectivity group, which resulted in 35 instead of 32 institutions identified in the top 10 percent.

Table 11. Selected institutional characteristics of 4-year institutions, by low-income serving status: 2004

Institutional characteristics	Not			Not		
	Low-income serving	low-income serving	Total	Low-income serving	low-income serving	Total
	Percentage distributions			Number of institutions		
Total	100.0	100.0	100.0	319	857	1,176
Selectivity						
Very selective	8.5	26.6	21.7	27	228	255
Moderately selective	58.0	58.9	58.7	185	505	690
Minimally selective or open	33.5	14.5	19.6	107	124	231
Carnegie classification						
Doctoral	3.3	14.7	11.6	26	174	200
Master's	36.6	41.4	40.1	129	363	492
Bachelor's	60.1	43.9	48.3	164	320	484
Control and affiliation						
Public	37.9	33.1	34.4	121	284	405
Private no religious affiliation	12.9	24.4	21.3	41	209	250
Private religious affiliation	49.2	42.5	44.3	157	364	521
Historically Black institution						
Yes	21.3	0.6	6.2	68	5	73
No	78.7	99.4	93.8	251	852	857
	Averages					
Average undergraduate FTE						
All institutions	2,965	5,085	4,510	319	857	1,176
Public	5,510	10,215	8,809	121	284	405
Private, not for profit	1,410	2,542	2,251	198	573	771
Average percent minority enrollment	40.6	18.3	24.3	319	857	1,176

NOTE: Low-income serving institutions are defined as those with 40 percent or more federal grant aid recipients in the 1998 freshman cohort and at least 25 percent Pell Grant recipients in the total undergraduate enrollment in 1999 or at least one-third Pell Grant recipients in total undergraduate enrollment irrespective of the freshman cohort.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

Some of the differences between these institutions and the remaining low-income serving institutions are shown in table 13. Those with high graduation rates were less likely than other low-income serving institutions to be public, were more likely to be private without religious affiliations, had smaller average minority enrollments, and had larger FTEs.

Table 12. Six-year graduation rates of 4-year institutions, by low-income serving status and selectivity: 2004

Selectivity	Percentiles				
	10th	25th	50th	75th	90th
Low-income serving					
Total	22.5	30.4	39.2	48.9	57.3
Very selective	25.0	31.1	42.9	63.6	74.9
Moderately selective	29.2	34.7	42.3	50.4	58.8
Minimally selective or open	15.2	23.4	31.3	40.3	47.8
Not low-income serving					
Total	34.8	44.8	56.4	67.9	80.0
Very selective	50.9	61.0	73.9	84.0	90.3
Moderately selective	36.9	44.9	54.4	62.9	69.8
Minimally selective or open	21.9	29.4	41.4	50.0	57.8

NOTE: Low-income serving institutions are defined as those with 40 percent or more federal grant aid recipients in the 1998 freshman cohort and at least 25 percent Pell Grant recipients in the total undergraduate enrollment in 1999 or at least one-third Pell Grant recipients in total undergraduate enrollment irrespective of the freshman cohort.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

The specific institutions identified as low-income serving with very high graduation rates are shown in table 14. For each institution, the table displays the 6-year graduation rates for all students and for Black students in 2004, and the graduation rates for all students for 2003 and 2002; next are the indicators of low-income serving status (the percentage of federal grant aid recipients in the freshman cohort and the percentage of Pell Grant recipients among all undergraduates enrolled in 1999 and 2003);¹⁵ institution control; and the enrollment characteristics of the 1998 freshman cohort, including the percentage of Black students and the percentage of underrepresented minority students (Black, Hispanic, and American Indian students combined), the percentage of entering freshmen included in the graduation rate cohort, the number of students in the cohort, and the undergraduate FTE. The last column in the table lists the 2004 tuition and fees.

The information in this table indicates that the high-performing low-income serving institutions span small and large institutions in both the public and private sectors. There was at

¹⁵ Recall that the definition for low-income serving was having at least 40 percent federal grant aid recipients in the freshman cohort AND at least 25 percent Pell Grant recipients in the entire undergraduate population in 1999; OR having at least 33 percent of Pell Grant recipients in the entire undergraduate population in 1999, regardless of the freshman cohort.

Table 13. Selected institutional characteristics among low-income serving 4-year institutions for institutions with very high graduation rates and all others: 2004

Institutional characteristics	Total	Graduation rate in top 10 percent ¹	All other low-income serving
Percentage distributions			
Total	100.0	100.0	100.0
Control and affiliation			
Public	37.9	28.6	39.1
Private no religious affiliation	12.9	20.0	12.0
Private religious affiliation	49.2	51.4	48.9
Historically Black			
Yes	21.3	11.4	22.5
No	78.7	88.6	77.5
Averages			
Average percent minority enrollment	40.6	29.9	42.0
Average undergraduate FTE			
Total	2,965	4,380	2,791
Public	5,510	11,043	5,012
Private, not for profit	1,410	1,714	1,366
Number of institutions			
Number of institutions	319	35	284

¹ Institutions with graduation rate in top 10 percent of selectivity group: 75 percent or higher for very selective institutions, 59 percent or higher for moderately selective, and 48 percent or higher for minimally selective.

NOTE: Low-income serving institutions are defined as those with 40 percent or more federal grant aid recipients in the 1998 freshman cohort and at least 25 percent Pell Grant recipients in the total undergraduate enrollment in 1999 or at least one-third Pell Grant recipients in total undergraduate enrollment irrespective of the freshman cohort.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

least one public institution in all selectivity and Carnegie classifications except for moderately selective master's institutions. Among institutions with religious affiliations, 8 were Catholic and 11 were Christian of various denominations. Also among the high-performing low-income serving institutions, there were five HBCUs, which fell into all selectivity levels; one of which was public and one a women's college.

The following section discusses the individual institutions within Carnegie and selectivity classifications. This study makes no attempt to determine the reasons these institutions outperformed other low-income serving institutions. Rather, the purpose is simply to point out

Table 14. Characteristics of low-income serving 4-year institutions with very high 2004 6-year graduation rates, by Carnegie classification and selectivity: 2004

Carnegie classification, selectivity, and special characteristics	6-year graduation rates			Low-income indicators				1998 cohort characteristics						
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants	Percent		Public or private control ²	Percent in cohort			Number of students in cohort	Under- graduate enroll- ment ³	2004 tuition and fees
						Pell Grant recipients ¹	2003		Black students	Under- repre- sented minor- ities	fresh- men			
Very selective⁴														
Doctoral														
University of California-Los Angeles	84.6	86.7	87.2	70.5	27.0	34.0	35.0	1	3.9	15.9	54.0	4,200	23,347	\$6,586
University of California-Irvine	76.2	78.7	79.8	68.2	37.0	37.0	29.0	1	2.5	16.1	68.0	2,948	13,925	6,895
Bachelor's														
Spelman College (women's HBCU)	77.5	77.0	77.0	77.4	51.0	—	34.0	2	98.2	98.4	95.0	505	1,864	14,940
Moderately selective⁵														
Doctoral														
University of California-Santa Cruz	66.8	65.4	69.4	78.2	24.0	33.0	26.0	1	3.0	20.8	71.0	2,309	9,626	7,023
St John's University-New York (Catholic)	68.7	64.2	66.0	53.5	44.0	32.0	32.0	2	10.9	26.7	49.0	2,240	11,722	21,630
University of California-Riverside	66.2	64.2	64.4	69.3	41.0	47.0	43.0	1	5.6	28.8	68.0	2,235	8,632	6,684
University of Kentucky	57.7	61.1	59.6	49.7	24.0	—	34.0	1	6.6	7.1	75.0	2,931	15,930	5,165
Master's														
The College of Saint Scholastica (Catholic)	53.2	65.6	66.8	—	43.0	29.0	32.0	2	0.8	1.2	99.0	277	1,276	20,760
Fresno Pacific University (Christian)	57.8	56.8	64.9	—	42.0	44.0	30.0	2	4.1	26.5	40.0	154	724	18,728
Wheeling Jesuit University (Catholic)	54.8	53.5	62.9	—	40.0	25.0	24.0	2	0.4	1.2	73.0	264	1,172	19,585
Saint Francis University (Catholic)	63.9	54.8	61.2	41.7	41.0	28.0	31.0	2	3.8	4.7	80.0	335	1,327	20,440
Roberts Wesleyan College (Christian)	60.1	52.2	59.7	—	43.0	30.0	34.0	2	3.5	7.5	66.0	211	1,085	17,840
Saint John Fisher College (Catholic)	60.3	64.6	59.0	33.3	40.0	—	32.0	2	5.9	11.1	66.0	315	1,754	18,450

See notes at end of table.

Table 14. Characteristics of low-income serving 4-year institutions with very high 2004 6-year graduation rates, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification, selectivity, and special characteristics	6-year graduation rates			Low-income indicators			1998 cohort characteristics							
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Public or private control ²	Percent in cohort			Number of students in cohort	Under- graduate enroll- ment ³	2004 tuition and fees	
					Percent Pell Grant recipients ¹	Percent 1999		Percent 2003	Black students	Under- repre- sented minor- ities				fresh- men
Moderately selective, cont.⁵														
Bachelor's														
Wells College (women's)	62.0	68.8	67.4	—	31.0	41.0	38.0	2	4.9	7.4	75.0	89	337	\$14,900
Bethany College (Christian)	60.6	—	66.8	—	35.0	34.0	32.0	2	4.1	4.6	89.0	196	717	14,022
Eureka College (Christian)	52.3	48.2	65.8	—	51.0	38.0	34.0	2	4.4	6.1	100.0	114	438	13,400
Hiram College	67.7	59.2	65.4	75.0	44.0	31.0	29.0	2	6.9	8.2	72.0	231	972	22,068
Mills College (women's)	59.7	62.0	65.4	—	36.0	39.0	35.0	2	9.2	16.3	53.0	127	721	27,085
Davis and Elkins College (Christian)	39.4	26.9	64.3	—	51.0	36.0	42.0	2	3.1	4.7	51.0	129	623	15,666
Fisk University (Christian HBCU)	61.9	77.7	63.8	66.7	50.0	50.0	54.0	2	95.1	95.1	80.0	224	746	12,450
University of Pittsburgh-Johnstown	59.8	60.1	62.8	—	42.0	25.0	29.0	1	1.0	1.1	83.0	715	2,930	9,932
The Master's College and Seminary (Christian)	62.8	61.0	60.8	—	54.0	29.0	25.0	2	1.8	4.7	62.0	171	911	17,970
Bryan College (Christian)	54.5	48.8	58.6	—	43.0	29.0	25.0	2	2.1	2.9	53.0	140	507	14,100
Minimally selective⁶														
Master's														
Murray State University	56.0	56.5	57.3	52.9	48.0	26.0	29.0	1	3.7	4.6	59.0	944	6,772	3,984
North Carolina Central University (HBCU)	48.9	48.7	50.5	50.2	69.0	41.0	54.0	1	92.7	93.5	60.0	673	3,604	3,042
Waynesburg College (Christian)	53.5	50.2	50.3	26.9	43.0	41.0	33.0	2	9.0	10.4	86.0	290	1,156	14,540
Northwest Nazarene University (Christian)	39.4	53.4	49.0	—	48.0	27.0	11.0	2	0.3	2.6	98.0	310	1,055	16,570
Xavier University of Louisiana (Catholic HBCU)	57.4	58.8	48.4	48.5	66.0	46.0	49.0	2	98.6	98.7	99.0	926	3,051	12,200
Mount Mary College (Catholic)	46.2	51.2	47.6	—	53.0	31.0	37.0	2	#	2.4	71.0	126	723	14,936

See notes at end of table.

Table 14. Characteristics of low-income serving 4-year institutions with very high 2004 6-year graduation rates, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification, selectivity, and special characteristics	6-year graduation rates			Low-income indicators				1998 cohort characteristics						
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants	Percent Pell Grant recipients ¹		Public or private control ²	Percent in cohort			Number of students in cohort	Under- graduate enroll- ment ³	2004 tuition and fees
						1999	2003		Black students	Under- repre- sented minor- ities	fresh- men			
Minimally selective, cont.⁶														
Bachelor's														
Miles College (Christian HBCU)	72.8	70.9	72.4	72.2	90.0	95.0	88.0	2	99.4	99.4	98.0	340	1,305	5,668
St Francis College (Catholic)	53.4	49.5	56.6	47.9	52.0	28.0	33.0	2	17.1	33.9	62.0	440	2,021	11,780
Valley City State University	45.5	43.5	54.3	—	49.0	31.0	26.0	1	2.9	5.1	66.0	175	927	4,558
Jamestown College	46.2	60.8	53.2	—	48.0	37.0	25.0	2	0.4	3.2	72.0	278	1,095	9,400
Evangel University (Christian)	91.3	100.0	53.0	60.0	83.0	31.0	43.0	2	2.8	10.5	100.0	400	1,599	11,985
Keuka College	49.6	53.9	50.4	—	44.0	45.0	41.0	2	1.3	4.0	98.0	226	828	17,365

— Not available.

Rounds to zero.

¹ Refers to percent of Pell Grant recipients in total undergraduate enrollment (unduplicated count).

² Public = 1; private not-for-profit = 2.

³ Full-time equivalent enrollment in 1998.

⁴ Low-income serving very selective institutions with a graduation rate of 75 percent or higher.

⁵ Low-income serving moderately selective institutions with a graduation rate of 59 percent or higher.

⁶ Low-income serving minimally selective institutions with a graduation rate of 48 percent or higher.

NOTE: Low-income serving institutions are defined as those with 40 percent or more federal grant aid recipients in the 1998 freshman cohort and at least 25 percent Pell Grant recipients in the fall undergraduate enrollment in 1999 or at least one-third Pell Grant recipients in fall undergraduate enrollment irrespective of the freshman cohort.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

that some institutions graduate large proportions of students even while serving large economically disadvantaged student populations.

Very Selective Institutions

The graduation rate at the 90th percentile for the 27 very selective institutions identified as low-income serving institutions was 75 percent. Two doctoral universities and one baccalaureate institution reported 2004 graduation rates of 75 percent or higher. The doctoral institutions are **UCLA** and **UC Irvine**, both large, urban public institutions in the University of California system. UCLA graduated 87 percent of its cohort, which is higher than the rate at the 75th percentile for *all* very selective doctoral institutions regardless of low-income population size. However, UCLA also reported that just over half (54 percent) of its freshmen were included in the graduation rate cohort. This means that about 46 percent of entering freshmen were not counted in the graduation rate.

UC Irvine graduated 80 percent of its 1998 cohort by 2004, a graduation rate also well above the 75 percent cutoff. In both UCLA and UC Irvine, underrepresented minority students made up about 16 percent of the freshman cohort, and the graduation rates at both campuses increased by about 3 percentage points between 2002 and 2004.

The very selective baccalaureate college with a graduation rate at 75 percent or higher was **Spelman College**, the HBCU for women in Atlanta, Georgia. The 2004 graduation rate for Spelman College (77 percent) was by far the highest graduation rate in its low-income peer group of very selective baccalaureate institutions. Moreover, nearly all entering freshmen (95 percent) were included in the cohort.

Moderately Selective Institutions

Moderately selective institutions constituted the largest group of the low-income serving colleges and universities. The graduation rate at the 90th percentile for these institutions was 59 percent.

Doctoral

Among the doctoral institutions that met the criteria for low-income serving, four had graduation rates above 59 percent. As with very selective institutions, two University of California campuses figured prominently: **UC Santa Cruz** (69 percent) and **UC Riverside** (64 percent). UC Riverside stood out for the size of its low-income population—more than 40

percent of its undergraduate enrollment received Pell Grants. Moreover, the graduation rate for Black students, who constituted about 6 percent of the cohort, was even higher (69 percent) than for all students.

Another large public university, the **University of Kentucky** in Lexington, reported a 2004 graduation rate of 60 percent. However, unlike UC Santa Cruz and UC Riverside, in which at least one-fifth of the 1998 graduation rate cohort was composed of underrepresented minority students, just 7 percent of the graduation rate cohort at the University of Kentucky was made up of underrepresented minority students.

The fourth moderately selective doctoral institution was **St. John's University**, a large, urban Catholic institution in New York, with a 2004 graduation rate of 66 percent. About 28 percent of St. John's 1998 freshman cohort was made up of underrepresented minority students, including 11 percent who were Black. At the same time, however, just under one-half (49 percent) of the entering freshmen were included in the graduation rate cohort, which means that roughly half the freshmen did not meet the definition of full-time, first-time, degree-seeking students and thus were not counted in the graduation rate.

Master's

Among moderately selective master's institutions, six reported graduation rates at or above 59 percent in 2004; all of them were relatively small private colleges with religious affiliations (four Catholic and two Christian).

The **College of Saint Scholastica**, a Catholic college in Duluth, Minnesota, with a full-time-equivalent enrollment (FTE) of about 1,300 students, reported the highest graduation rate among these institutions (67 percent). A very small Christian college, **Fresno Pacific University** in Fresno, California (about 700 FTE), and a somewhat larger Catholic college, **Wheeling Jesuit University** (1,200 FTE) in Wheeling, West Virginia, reported 2004 graduation rates of 65 and 63 percent, respectively. It should be noted, however, that the 1998 graduation rate cohort at Fresno Pacific University included just 40 percent of all entering freshman; thus a majority of freshman were not counted in the graduation rate.

The three remaining institutions identified as having high graduation rates were **Saint Francis University** (61 percent), a Catholic liberal arts university in Lorreto, Pennsylvania; **Roberts Wesleyan University** (60 percent), a Christian college in Rochester, New York; and **Saint John Fisher College** (59 percent), a Catholic College also located in Rochester, New York.

Baccalaureate

Among moderately selective baccalaureate institutions, more than 100 met the criteria for low-income serving. Ten of these institutions reported graduation rates at 59 percent or higher in 2004. Most are small private liberal arts colleges, though one is a large public institution—**University of Pittsburgh-Johnstown**, with a 2004 graduation rate of 63 percent.

Included among the small liberal arts colleges is **Fisk University**, an HBCU in Nashville, Tennessee, with a 2004 graduation rate of 64 percent. It is notable that about 50 percent of Fisk's undergraduate enrollment were low-income students (i.e., Pell Grant recipients).

Also included in this group are two women's colleges: **Wells College**, a very small rural college in Aurora, New York, which graduated 67 percent of its cohort, and **Mills College**, a larger urban college in Oakland, California, which graduated 65 percent of its cohort. Mills college enrolled the largest proportion of underrepresented minority students (16 percent) among its peer group with the exception of Fisk University, an HBCU. However, Mills College included just over one-half of entering freshmen (53 percent) in its graduation rate cohort.

Five Christian-affiliated colleges—**Bethany College** in Bethany, West Virginia; **Eureka College** in Eureka, Illinois; **The Master's College and Seminary** in Santa Clarita, California; **Bryan College** in Dayton, Tennessee; and **Davis and Elkins College** in Elkins, West Virginia—all reported graduation rates at 59 percent or higher in 2004. However, it should be noted that the 2003 and 2002 graduation rates for Davis and Elkins were considerably lower (27 and 39 percent, respectively). Also, the 2004 graduation rates for Davis and Elkins College and Bryan College were based on 51 and 53 percent of their entering freshmen, respectively.

Finally, a small rural liberal arts college, **Hiram College** in Hiram, Ohio, graduated 65 percent of its freshman cohort. Moreover, Hiram's graduation rate for Black students, who made up 7 percent of the cohort, was 75 percent, higher than the overall graduation rate.

Minimally Selective Institutions

The graduation rate at the 90th percentile for minimally selective institutions was 48 percent, and 15 institutions reported graduation rates at that rate or higher.

Master's

Six minimally selective master's institutions graduated 48 percent or more of their freshmen cohorts. **North Carolina Central University**, a public HBCU, with one of the highest

low-income enrollments (nearly 70 percent of the freshman cohort were federal grant aid recipients and roughly one-half of its undergraduate enrollment received Pell Grants) graduated 51 percent of its 1998 cohort by 2004. **Murray State University** in Murray, Kentucky, reported a graduation rate of 57 percent for its 1998 cohort, more than half of whom were low income. Two small Christian colleges, **Waynesburg College** in Waynesburg, Pennsylvania, and **Northwest Nazarene University** in Nampa, Idaho, reported graduation rates of 50 and 49 percent, respectively.

Xavier University of Louisiana, a Catholic HBCU in New Orleans and **Mount Mary College** in Milwaukee, Wisconsin, both reported graduation rates of 48 percent. In Xavier University, low-income students accounted for about two-thirds of the freshman cohort and about one-half of the undergraduate enrollment.

Baccalaureate

Among the six minimally selective baccalaureate institutions with graduation rates of 48 percent or higher, one institution stood out: **Miles College**, a private liberal arts, open admission, church-affiliated HBCU in Fairfield, Alabama, enrolling about 1,300 FTE students. The 1998 freshman cohort was made up almost exclusively of low-income students, and nearly three-quarters of them (72 percent) graduated by 2004. This rate, which held steady over 3 years, approaches the high rate for all very selective institutions (75 percent).

A private Catholic college, **St. Francis College** in Brooklyn, New York, with a full-time enrollment of about 2,000 students, reported a graduation rate of 57 percent. About one-third of its graduation rate cohort was made up of underrepresented minority students.

A minimally selective public rural institution, **Valley City State University** in North Dakota (enrolling about 1,000 FTE), reported a graduation rate of 54 percent. This graduation rate had risen from 44 and 45 percent, respectively, in the previous 2 years. Two institutions reported graduation rates of 53 percent in 2004: **Jamestown College**, a small, private liberal arts college in Jamestown, North Dakota, and **Evangel University**, a rural Christian University in Springfield, Missouri. Finally, **Keuka College** in Keuka, New York, a small private college that promotes career skills graduated about 50 percent of its 1998 freshman cohort by 2004.

A Word of Caution About the Findings

In interpreting the data provided about low-income serving institutions, readers are reminded that the criteria used in this study to identify low-income serving institutions in general

and those with high graduation rates are simple empirical cutoff points based on the distribution of institutions' reported data. Thus inaccuracies in data reporting, missing data, and the somewhat arbitrary cutoff points used to identify such institutions may have excluded colleges or universities that successfully serve low-income students. For example, among the 1,301 institutions in this study, 125 institutions did not have Pell Grant information and thus their low-income serving status could not be determined. If low-income status were based solely on the proportion of federal aid recipients in the 1998 freshman cohort, 46 of these institutions would have qualified as low-income serving (40 percent or more federal aid recipients) and 4 of the 46 would meet the criteria for high graduation rates. These institutions are listed in appendix table B-2.

Summary and Conclusions

The purpose of this study was to provide a context for comparing graduation rates among “similar” institutions. The results clearly demonstrate that graduation rates are inversely related to the size of low-income student population, both overall and when institutions are grouped within Carnegie classification and institutional selectivity levels. For example, graduation rates in the largest comparison group—moderately selective master’s institutions—dropped 9 percentage points (from 58 to 49 to 40 percent) at each of the three successive low-income enrollment size levels, defined as small (20 percent or fewer low-income students), moderate (21 to 39 percent low-income students), and large (40 percent or more low-income students).

Variations by gender and race/ethnicity were evident across the comparison groups and varied with the size of the low-income population. Overall, the average 2004 graduation rate for women was 60 percent versus 54 percent for men. In general, the gender gap increased with the size of the low-income population.

Across nearly all the institutional comparison groups, gaps in graduation rates between White students and Black or Hispanic students were evident. However, the graduation rate gaps were narrowest in institutions where either Black or Hispanic students were most highly represented. These institutions also corresponded to those with large low-income enrollments. In fact, the graduation rate for Black students was slightly higher than that of White students (53 vs. 50 percent) in the 16 very selective baccalaureate institutions with large low-income enrollments.

The smallest gap in graduation rates between White and Hispanic students (an average of 2 percentage points) was found among the 97 moderately selective doctoral institutions with large low-income enrollments. Hispanic students made up an average of 14 percent of the freshmen in these institutions (compared with 6 percent overall).

The final part of the analysis identified a group of institutions as low-income serving. Compared with other institutions, colleges and universities designated as low-income serving were more likely to be minimally selective, to be public or private with religious affiliations, to enrolled larger proportions of minority students, and to have smaller undergraduate FTEs. One-fifth of low-income serving institutions were HBCUs.

Among low-income serving institutions, some 35 were identified with very high graduation rates for their selectivity levels. These institutions reported graduation rates in the top 10 percent of their selectivity level. The purpose of identifying these institutions is simply to point out that “successful” low-income serving institutions are not easily categorized. They span the public and private sectors, small and large institutions, and urban and rural locations in many regions of the country. Furthermore, many factors that are not captured by the institutional surveys, may be associated with an institution’s success. In the end, the results indicate that serving large numbers of low-income students does not necessarily lead to low graduation rates.

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Appendix A—Glossary

This glossary describes the variables used in the report. Most of the variables are derived directly from items in the 2004 Graduation Rate Survey (GRS) from the Integrated Postsecondary Education Data System (IPEDS) database. The derived IPEDS variables were imported into the 2004 IPEDS Data Analysis System (DAS). All of the tables in the report except those that list individual institutions were run in the DAS. The supplementary data source is the Beginning Postsecondary Students Longitudinal Study (BPS:96/01), from which system-wide bachelor’s degree completion rates were determined.

The glossary index is organized into two sections: IPEDS variables and BPS variables. In the index below, the variables in each section are listed in the approximate order they appear in the tables. The variables in the glossary appear in alphabetical order by variable name (displayed in the right-hand column).

GLOSSARY INDEX

IPEDS VARIABLES

VARIABLES DEFINING ANALYSIS UNIVERSE

Degree-granting status DEGRANT
 4-year institutions.....ICLEVEL
 Carnegie classification code..... CARNEGIE
 Control of institution.....CONTROL
 OPE eligibility indicator OPEFLAG
 Institution located in 50 states.....OPEREG
 Selectivity (4-year institutions) SELECTV2
 Institutional comparison groups.....COMPCA1

LOW-INCOME VARIABLES

Percent of full-time freshman who
 received federal grants PROFPED
 Percent Pell Grant recipients among
 undergraduates 1999 PCT99
 Percent Pell Grant recipients among
 undergraduates 2003 PCT03

FRESHMAN COHORT VARIABLES

Percent of undergraduates who were
 included in the graduation rate cohort....PGRCOHRT

NUMBER OF STUDENTS IN 1998 COHORT

Total..... GRRK0824
 Women..... GRRK0816
 Men..... GRRK0815
 Asians GRRK0820
 American Indians GRRK0819
 Blacks GRRK0818

Hispanics GRRK0821
 Whites..... GRRK0822

NUMBER OF STUDENTS WHO GRADUATED IN 2004

Total..... GRRK1224
 Women GRRK1216
 Men..... GRRK1215
 Asians GRRK1220
 American Indians..... GRKK1219
 Blacks GRKK1218
 Hispanics GRRK1221
 Whites..... GRRK1222

GRADUATION RATES

2004 6-year graduation rate GRR15024
 2003 6-year graduation rateG0315024
 2002 6-year graduation rateG0215024

LOW-INCOME SERVING INSTITUTION

CHARACTERISTICS

Low-income serving institutionLOWINC
 Low-income serving institution with
 high graduation rateHIGHRATE
 Control and religious affiliation.....CNTLAFFI
 Percentage of underrepresented minority
 students PROPBHAI
 Historically Black Institution..... HBCU
 Full-time-equivalent (FTE) enrollment in
 1998 FTE
 Tuition and fees 2004TUITFEE04

BPS VARIABLES

USED TO SELECT SAMPLE

Level of first institution..... ITNPLV
Public and private not-for-profit institutions..... ITNPS2

TABLE VARIABLES

Bachelor's degree completion rate
 First institution ELFIBA2B
 AnywhereELFMBA2B
Bachelor's degree goal in 1995–96 DGEXPY1
Attendance status when first enrolled ATTEND2

IPEDS VARIABLES

Carnegie classification code

CARNEGIE

Indicates the 2000 Carnegie Classification code of the reporting institution. The 2000 Carnegie Classification includes all colleges and universities in the United States that are degree-granting and accredited by an agency recognized by the U.S. Secretary of Education. The 2000 edition classifies institutions based on their degree-granting activities from 1995–96 through 1997–98.

- *Doctoral/Research Universities—Extensive*: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the doctorate. They award 50 or more doctoral degrees per year across at least 15 disciplines.
- *Doctoral/Research Universities—Intensive*: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the doctorate. They award at least 10 doctoral degrees per year across three or more disciplines, or at least 20 doctoral degrees per year overall.
- *Master’s Colleges and Universities I*: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the master’s degree. They award 40 or more master’s degrees per year across three or more disciplines.
- *Master’s (Comprehensive) Colleges and Universities II*: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the master’s degree. They award 20 or more master’s degrees per year.
- *Baccalaureate Colleges—Liberal Arts*: These institutions are primarily undergraduate colleges with major emphasis on baccalaureate programs. They award at least half of their baccalaureate degrees in liberal arts fields.
- *Baccalaureate Colleges—General*: These institutions are primarily undergraduate colleges with major emphasis on baccalaureate programs. They award less than half of their baccalaureate degrees in liberal arts fields.
- *Baccalaureate/Associate’s Colleges*: These institutions are undergraduate colleges where the majority of conferrals are at the subbaccalaureate level (associate’s degrees and certificates), but bachelor’s degrees account for at least 10 percent of undergraduate awards.
- *Associate’s Colleges*: These institutions offer associate’s degree and certificate programs but, with few exceptions, award no baccalaureate degrees.
- *Specialized Institutions*: These institutions offer degrees ranging from the bachelor’s to the doctorate, and typically award a majority of degrees in a single field. Examples of specialized institutions include theological seminaries, medical schools, schools of engineering, law schools, and teachers colleges. This group of institutions also includes tribal colleges.

For this analysis, specialized institutions and associate’s colleges were not included. The remaining 4-year institutions were aggregated to three levels:

Doctoral (Doctoral Research Universities—Extensive and Intensive)
 Master’s Colleges and Universities (I and Comprehensive)
 Baccalaureate Colleges (Liberal Arts and General)

Institutional comparison groups**COMPCA1**

The institutional comparison groups were defined based on three different variables: 2000 Carnegie classification (CARNEGIE), selectivity (SELECTV2), and proportion of freshman cohort receiving federal grant aid (PROPFED). Each Carnegie classification—doctoral, master’s, and baccalaureate—was divided into three selectivity levels—very, moderate, and minimally selective (which included open admission institutions). Each selectivity group was subsequently divided into three groups of low-income enrollment size based on the proportion of federal grant aid recipients—small (20 percent or less), moderate (21 to 39 percent), and large (40 percent or more). Because of small numbers, minimally selective institutions with low proportions of federal grant aid recipients were combined with the moderate group, resulting in 24 comparison groups.

1. Doctoral, very selective, small low-income enrollment
2. Doctoral, very selective, moderate low-income enrollment
3. Doctoral, very selective, large low-income enrollment

4. Doctoral, moderately selective, small low-income enrollment
5. Doctoral, moderately selective, moderate low-income enrollment
6. Doctoral, moderately selective, large low-income enrollment

7. Doctoral, minimally selective, small and moderate low-income enrollment
8. Doctoral, minimally selective, large low-income enrollment

9. Master’s, very selective, small low-income enrollment
10. Master’s, very selective, moderate low-income enrollment
11. Master’s, very selective, large low-income enrollment

12. Master’s, moderately selective, small low-income enrollment
13. Master’s, moderately selective, moderate low-income enrollment
14. Master’s, moderately selective, large low-income enrollment

15. Master’s, minimally selective, small and moderate low-income enrollment
16. Master’s, minimally selective, large low-income enrollment

17. Baccalaureate, very selective, small low-income enrollment
18. Baccalaureate, very selective, moderate low-income enrollment
19. Baccalaureate, very selective, large low-income enrollment

20. Baccalaureate, moderately selective, small low-income enrollment
21. Baccalaureate, moderately selective, moderate low-income enrollment
22. Baccalaureate, moderately selective, large low-income enrollment

23. Baccalaureate, minimally selective, small and moderate low-income enrollment
24. Baccalaureate, minimally selective, large low-income enrollment

DAS Variable***Control of institution*****CONTROL**

A classification of whether an institution is operated by publicly elected or appointed officials, or by privately elected or appointed officials and derives its major source of funds from private sources. Institutions are grouped into three categories as follows:

Public institution	An educational institution whose programs and activities are operated by publicly elected or appointed school officials and that is supported primarily by public funds.
Private not-for-profit institution	A private institution in which the individual(s) or agency in control receives no compensation, other than wages, rent, or other expenses for the assumption of risk. These include both independent not-for-profit institutions and those affiliated with a religious organization.
Private for-profit institution	A private institution in which the individual(s) or agency in control receives compensation other than wages, rent, or other expenses for the assumption of risk.

Control and religious affiliation**CNTLAFFI**

Indicates both the control of an institution (see CONTROL) and for private institutions, whether they have a religious affiliation.

Degree-granting institution**DEGGRA**

An institution that offers an associate's, bachelor's, master's, doctor's, or a first-professional degree. (In contrast, a non-degree-granting institution offers certificates or other formal awards.)

Full-time-equivalent (FTE) enrollment in 1998**FTE**

A measurement equal to one student enrolled full time for one academic year. Total FTE enrollment includes full-time plus the calculated equivalent of the part-time enrollment. The full-time equivalent of the part-time students can be estimated using different factors depending on the type and control of institution and level of student. For this analysis, three part-time students were considered one full-time equivalent.

2002 6-year graduation rate**G0215024*****2003 6-year graduation rate*****G0315024*****2004 6-year graduation rate*****GRR15024**

The 6-year graduation rate calculated from the total number in the graduation rate cohort and the total who graduated with 6 years.

Number of students in 1998 cohort

Number of full-time, first-time, bachelor’s degree-seeking students in cohort (used as denominators in calculating the enrollment weighted graduation rates for each institution comparison group):

Total	GRRK0824
Women	GRRK0816
Men	GRRK0815
Asians	GRRK0820
American Indians	GRRK0819
Blacks	GRRK0818
Hispanics	GRRK0821
Whites	GRRK0822

Number of students in 1998 cohort who graduated in 2004

Number of full-time, first-time, bachelor’s degree-seeking students who graduated in 2004 (used as numerators in calculating the enrollment weighted graduation rates for each institution comparison group):

Total	GRRK1224
Women	GRRK1216
Men	GRRK1215
Asians	GRRK1220
American Indians	GRKK1219
Blacks	GRKK1218
Hispanics	GRRK1221
Whites	GRRK1222

Historically Black Institution

HBCU

Refers to institutions established prior to 1964 whose principal mission was, and is, the education of Black Americans. These institutions must be accredited by a nationally recognized accrediting agency or association determined by the Secretary of Education.

Low-income serving institution with high graduation rate

HIGHRATE

An institution defined as low-income serving (see LOWINC) whose 2004 6-year graduation rate fell into the top 10 percent of its selectivity classification among low-income serving institutions. The rates, respectively, were 75 percent for very selective, 59 percent for moderately selective, and 48 percent for minimally selective institutions.

4-year institutions

ICLEVEL

A classification of whether an institution’s programs are 4-year or higher (4-year), at least 2 but less-than-4-year (2-year), or less-than-2-year. This analysis selected only 4-year institutions.

DAS Variable***Low-income serving institution*****LOWINC**

Institutions identified as low-income serving based on the proportion of the 1998 freshman cohort that received federal grant aid and the proportion of undergraduates that received Pell Grants. The following definition was applied: (1) Institution's 1998 freshman cohort was made up of at least 40 percent federal grant aid recipients *and* the total undergraduate enrollment (unduplicated 12-month count) in 1999 was at least 25 percent Pell Grant recipients; or (2) regardless of the freshman cohort, at least one-third of the total undergraduate enrollment was made up of Pell Grant recipients. The latter definition represents the highest 25 percent of institutions with respect to the proportion of Pell Grant recipients. If either the freshman cohort federal grant aid information or the Pell Grant information was missing, it was substituted with 2003 values.

OPE eligibility indicator**OPEFLAG**

Indicates Office of Postsecondary Education (OPE) eligibility status of reporting institution, i.e., whether institutions have participation agreements with the U.S. Department of Education for Title IV student aid programs.

Institution located in 50 states**OPEREG**

Indicates the region in which the institution is located. Only those located in the 50 states were included. Puerto Rico and other outlying regions were excluded.

Percentage of Pell Grant recipients among undergraduates: 1999**PCT99*****Percentage of Pell Grant recipients among undergraduates: 2003*****PCT03**

Percentage of Pell Grant recipients in the unduplicated 12-month count of undergraduates. The number of Pell Grant recipients was taken from the Pell Grant file and the enrollment count from the corresponding IPEDS survey.

Percentage of undergraduates who were included in the graduation rate cohort**PGRCOHRT**

Percentage of freshmen who were full-time, first-time, degree/certificate-seeking at the reporting institution in 1998. Represents the proportion of admitted freshmen included in the graduation rate cohort on whom the 2004 graduation rates are based.

Percentage of full-time freshmen receiving federal grants**PROPFED**

Percentage of full-time, first-time, degree/certificate-seeking freshmen who received federal grants at the reporting institution in 1998 (the cohort year on which the 2004 graduation rate is based). Federal grants include those provided by federal agencies such as the U.S. Department of Education, including Title IV Pell Grants and Supplemental Educational Opportunity Grants (SEOGs). Also includes need-based and merit-based educational assistance funds and training vouchers provided from other federal agencies and/or federally sponsored educational benefits programs, including the Veteran's Administration, and Department of Labor. This variable was used as the indicator for the size of the low-income freshman population.

Small—20 percent or less

Moderate—21 to 39 percent

Large—40 percent or more

DAS Variable

Percentage of underrepresented minority students

PROPHAI

Represents the percentage of the 1998 freshman cohort who were Black, Hispanic, or American Indian.

Selectivity (4-year institutions)

SELECTV2

Indicates the level of selectivity of the 4-year institutions in the study universe (see appendix B for a detailed explanation of how the variable was derived). The variable was derived from a combination of variables from the Institutional Characteristics component of IPEDS. For non-open admission institutions, an index was created from two variables: (1) the centile distribution of the percentage of students who were admitted to each institution (of those who applied); and (2) the centile distribution of the midpoint between the 25th and 75th percentile SAT/ACT combined scores reported by each institution. For this analysis open-admission institutions were combined with minimally selective institutions.

Very selective

Moderately selective

Minimally selective or open admission

Tuition and fees 2004

TUITFEE04

Average tuition and fees for full-time, first-time, undergraduate students for the full academic year, in current dollars. For public institutions, the variable is a composite calculated by weighting in-district, in-state, and out-of-state tuition and fees by the proportion of students in each option; for private institutions, it is the reported tuition and fee amount (derived).

BPS VARIABLES

Attendance status when first enrolled **ATTEND2**

Full-time
Part-time

Bachelor's degree goal in 1995–96 **DGEXPY1**

Highest degree expected at the first institution attended in 1995–96.

Bachelor's degree completion rate at first institution **ELFIBA2B**

Number of months elapsed from the first month enrolled through the month the first bachelor's degree was attained at the first institution, as of June 2001. Aggregated to 6 years.

Bachelor's degree completion rate anywhere **ELFMBA2B**

Number of months elapsed from the first month enrolled through the month the first bachelor's degree was attained. Aggregated to 6 years.

Level of first institution **ITNPLV**

Level of the first institution attended in 1995–96, used to filter the BPS sample to include only 4-year institutions.

4-year Denotes 4-year institutions that can award bachelor's degrees or higher, including institutions that award doctorate degrees and first-professional degrees.

Public and private not-for-profit institutions **ITNPS2**

Level, control, and highest degree offered at the first institution in 1995–96. This variable was constructed by combining the level and control of the institution with the highest level of degree offered at that institution.

Public 4-year
Non-doctorate-granting
Doctorate-granting
Private not-for-profit 4-year
Non-doctorate-granting
Doctorate-granting

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Appendix B—Technical Notes and Methodology

Integrated Postsecondary Education Data System

The Integrated Postsecondary Education Data System (IPEDS) is a comprehensive census of about 10,000 institutions whose primary purpose is to provide postsecondary education. Postsecondary education is defined within IPEDS as the provision of formal instructional programs whose curriculum is designed primarily for students who have completed the requirements for a high school diploma or its equivalent. This includes academic, vocational, and continuing professional education programs but excludes institutions that offer only avocational (leisure) and adult basic education programs. IPEDS collects data from postsecondary institutions in the United States (the 50 states and the District of Columbia) and other jurisdictions, such as Puerto Rico.

Participation in IPEDS is a requirement for the institutions that participate in Title IV federal student financial aid programs such as Pell Grants or Stafford Loans during the academic year. Title IV schools include traditional colleges and universities, 2-year institutions, and for-profit degree- and non-degree-granting institutions (such as schools of cosmetology), among others. About 6,700 institutions are designated as Title IV participants.

Most of the data used in this report originated in the 2004 Graduation Rate Survey (GRS), one of the components of IPEDS. This component was developed to help institutions comply with requirements of the Student Right-to-Know legislation. For each IPEDS institution, the GRS collects the number of students entering the institution as full-time, first-time, degree/certificate-seeking students in a particular year (cohort), by race/ethnicity and gender, and collects the number of students in this cohort completing within 150 percent of normal time to program completion (i.e., 6 years for a bachelor's degree program). Since 2002, nearly 100 percent of institutions have reported the 6-year graduation rate information. GRS also collects the number of students that transferred to other institutions within 150 percent of normal time; however, this item was missing for many institutions and therefore, was not included in the analysis.

In addition to the GRS component, data for this analysis were obtained from the Institutional Characteristics (IC), Student Financial Aid (SFA), and Enrollment (EF) components.

Data from 1998 (the cohort year of the GRS) and from 2004 (the year in which graduation rates were collected) were obtained from these files. The general contents of each component are as follows.

- *Institutional Characteristics (IC)* includes the institution names and addresses; congressional districts; counties; telephone numbers; tuition, books and supplies, room and board, and other expenses; control or affiliation; calendar systems; levels of degrees and awards offered; types of programs; and accreditation for all postsecondary education institutions in the United States and outlying territories.
- *Student Financial Aid (SFA)* includes the number and percentage of full-time, first-time, degree/certificate-seeking undergraduates, the percentage of full-time, first-time degree/certificate-seeking undergraduates receiving federal grants, state grants, institutional grants, and loan aid, as well as the average amounts of aid received.
- *Enrollment (EF)* includes information about full- and part-time enrollment by racial/ethnic category and gender for undergraduates, first-professional, and graduate students. Age distributions by level of enrollment and gender are collected in odd-numbered years, and first-time degree-seeking student enrollments by residence status are collected in even-numbered years. This component also includes the 12-month unduplicated enrollment.

Detailed information about IPEDS is available at the National Center for Education Statistics website (<http://nces.ed.gov/ipeds/>), including variable descriptions and data collection screens.

The 2004 IPEDS data collection was conducted using the IPEDS web-based data collection system. Each institution designated a keyholder, who was the person responsible for ensuring that survey data submitted by the institution were correct. The web-based survey instruments offer many features designed to improve the quality and timeliness of the data. Survey respondents were required to register before entering data to ensure a point of contact between NCES/IPEDS and the institution. Online data entry forms are tailored to each institution based on characteristics such as degree-granting status, public versus private control, and length of longest program offered. When data from previous years were available for an institution, they were preloaded on the customized forms for easy reference and comparison purposes. Once the data were entered, either manually or through file upload, the keyholders were required to run edit checks and resolve all errors before they were able to lock their data. Once data were locked, they were considered “submitted,” regardless of whether or not the coordinator had reviewed the submission. Once the data were complete and all locks were applied, IPEDS help desk staff conducted a final review. If any additional problems were detected, the help desk staff contacted the institutions to resolve any remaining questions. The response rate for all survey components were over 99 percent.

The Enrollment data, Finance data, Graduation Rates data, and Student Financial Aid IPEDS data are all subject to imputation for nonresponse—both total (institutional) nonresponse and partial (item) nonresponse. For specific imputation methods, please see Knapp et al. (2006).

Analysis Universe and Key Variables

The IPEDS analysis universe generated for this analysis included 1,301 public and private not-for-profit institutions among the roughly 1,850 bachelor’s degree-granting institutions in the 2004 graduation rate survey. The following criteria were used to select comparable institutions for analysis:

- Institutions in the 50 states eligible to receive Title IV funding (N = 1,798)
- Carnegie classification of doctoral, master’s, or baccalaureate institution (specialized institutions were excluded). (N = 1,376)
- Institution enrolled at least 50 full-time students¹ (N = 1,314)
- Valid (non-zero) number of completers (N = 1,306)
- Non-missing selectivity variable (N = 1,301)

Students included in the IPEDS graduation rate cohort are those who had enrolled in college for the very first time, who enrolled as a full-time student, and who had intentions of earning a credential. For this analysis, only students with intentions of earning a bachelor’s degree (as opposed to any degree) were included. When choosing the subset of the cohort in IPEDS to represent these students the designations GRATYPE = 08 (bachelor’s degree seekers) and GRRTYPE = 12 (completed in 6 years) were applied. It should be noted the graduation rates reported in this study differ slightly from those reported in a recent NCES publication (Knapp et al. 2006, table 5) because the analysis universe in the current study is more restrictive.

Full-Time, First-Time Definition

A full-time undergraduate must be enrolled for 12 or more semester credits, or 12 or more quarter credits, or 24 or more contact hours a week each term. A first-time undergraduate is a student attending any institution for the first time at the undergraduate level, including those enrolled in academic or occupational programs. First-time students also include students enrolled in the fall term who attended college for the first time in the prior summer term, and students who entered with advanced standing from high school (i.e., college credits earned before graduation from high school).

¹ This criterion produced too few for-profit institutions to be included in the analysis.

Institution Comparison Groups

The three measures used to form the institutional comparison groups in the study were Carnegie classification, selectivity, and the proportion of federal grant recipients in the graduation rate cohort below. Each variable, described below, was aggregated to three levels, resulting in 27 possible institutional groups.

Carnegie classification

The 2000 Carnegie Classification, reported in the IPEDS Institutional Characteristics survey was used as an indicator of institutional mission (see Carnegie Foundation 2001). The number of institutions included in the analysis is shown in parentheses.

Doctoral	(246)
Master's	(543)
Baccalaureate	(512)
TOTAL	(1,301)

Selectivity

The selectivity measure is a variable developed by Cunningham (2005) for a study comparing changes in prices and aid over time and is described in detail in the report. It was derived for 4-year institutions and was based on the IPEDS Institutional Characteristics (IC) data from the 2002 IC survey including the number of applicants; the number of students admitted; the 25th and 75th percentiles of ACT and/or SAT scores; and a flag for whether or not test scores were required,² and a flag for whether or not institutions were open admission. Open admission 4-year institutions were formed into a separate category. For non-open admission institutions, an index was created from two variables: (1) the centile distribution of the percentage of students who were admitted of those who applied; and (2) the centile distribution of the midpoint between the 25th and 75th percentile SAT/ACT combined scores reported by each institution (ACT scores were converted into SAT equivalents). The two variables were given equal weight for non-open admission institutions that had data for both variables. The combined centile value was divided into selectivity categories—very selective, moderately selective, and minimally selective—based on breaks in the distribution; open admissions institutions formed a separate category. Institutions that did not have test score data (about 10 percent of non-open admission institutions) were assigned to the selectivity categories using a combination of percentage admitted and whether they required test scores; institutions that did not require test scores were

² Institutions were required to report test scores only if test scores were required for admission and if 60 percent or more of the entering cohort of students submitted scores for a given test.

assigned to the “minimally selective” category, while the remainder were assigned according to the range of centiles of “percent admitted” in which they fell.

Multiple tests were performed to check the validity of the selectivity variable, including crosstabulations and correlations with highest degree offered, Carnegie Classification, and other types of selectivity measures. For the current study, open admission institutions were combined into the minimally selective group.

Proportion of low-income students in graduation rate cohort

There is no direct measure of the size of the low-income population enrolled in postsecondary institutions. However, there are variables that provide approximations. For example, in IPEDS, institutions are obliged to report the percentage of students in the graduation rate cohort (i.e., full-time, first-time, degree-seeking freshman) receiving federal grant aid. Federal grants are awarded almost exclusively to low-income students and are provided by federal agencies such as the U.S. Department of Education, including Title IV Pell Grants and Supplemental Educational Opportunity Grants (SEOG). Federal grants also include need-based and merit-based educational assistance funds and training vouchers provided from other federal agencies and/or federally sponsored educational benefits programs, including the Veteran’s Administration and U.S. Department of Labor.

Institutions report the percentage of full-time, first-time degree-seeking undergraduates who received federal grants. In other words, the numerator is the number of federal grant recipients and the denominator is the number of full-time, first-time, degree-seeking freshmen who enrolled in the fall of 1998.

The variable was missing for 40 institutions and was substituted with data from the latest GRS data (2004). Institutions were then divided into three income levels based roughly on quartiles representing the bottom 25 percent, middle 50 percent, and top 25 percent of institutions, corresponding to small, moderate, and large proportions of low-income students as follows:

Small proportion	20 percent or fewer federal grant aid recipients
Moderate proportion	21 to 39 percent federal grant aid recipients
Large proportion	40 percent or more federal grant aid recipients

Identifying Low-Income Serving Institutions

Because the variable used to determine the proportion of federal grant aid recipients in the graduation rate cohort is based only on a subset of entering freshmen, to identify institutions serving large low-income undergraduate populations, an indicator of the low-income distribution of all undergraduates was required. The proportion of Pell Grant recipients among the total undergraduate enrollment was used as a proxy measure. The proportion of Pell Grant recipients was based on the entire unduplicated undergraduate enrollment count in 1999. If the 1999 Pell Grant information was missing, it was substituted with 2003 values. The major change in eligibility between the 2 years was a revision of the expected family contribution (EFC) formula, which eliminated the consideration of home equity. However, this change targeted families that are generally too affluent to qualify for Pell Grants and therefore would have had minimal impact on Pell Grant eligibility (King 2003). The number of Pell Grant recipients was obtained from the 1999 and 2003 Pell Grant files, which are collected and maintained by the U.S. Department of Education. The unduplicated count of the undergraduate population is reported in the IPEDS IC component.

Low-income serving institutions were identified in one of two ways: (1) institutions whose 1998 graduation rate cohort was made up of at least 40 percent of low-income freshmen and at least one-quarter of their undergraduate population received Pell Grants in 1999; or (2) at least one-third of their undergraduate population received Pell Grants in 1999. The one-third cutoff represents the highest quartile of institutions based on the proportion of Pell Grant recipients. In other words, about 25 percent of institutions enrolled 33 percent or more Pell Grant recipients. All institutions identified as low-income serving are displayed in table B-1.

Of the 1,301 institutions, 125 did not have Pell Grant data either in 1999 or 2003 or the Pell Grant information was reported only for a system of campuses rather than for individual campuses (such as State or City University of New York [SUNY and CUNY]). Of these 125 institutions, 46 institutions may have been low-income serving based solely on the proportion of freshmen enrolled in the 1998 cohort (i.e., 40 percent or more received federal grant aid). These institutions are listed in table B-2. The institutions were primarily public (36 institutions), but their inclusion would have had little impact on the median graduation rates. The median graduation rate of all low-income serving institutions was 39 percent and for these 46 institutions, the median graduation rate was 38.2.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student federal grants	Percent in cohort with Pell Grant recipients ¹		Public or private control ²	Percent in cohort			Number of students in cohort			
					1999	2003		Black students	Under-represented minorities	freshmen				
Doctoral														
Very selective														
Alabama A & M University	38.8	38.0	32.8	32.9	60.0	55.0	76.0	1	96.0	96.4	78.0	995	3,740	\$3,640
Andrews University	47.6	52.7	37.6	42.9	37.0	33.0	31.0	2	17.4	30.9	76.0	282	1,605	15,470
Polytechnic University	49.6	54.5	42.9	23.4	63.0	46.0	47.0	2	12.5	28.5	99.0	422	1,619	27,170
Saint Louis University-Main Campus	71.8	70.9	73.9	58.6	60.0	27.0	11.0	2	7.5	9.3	76.0	1,236	7,187	23,558
Temple University	47.0	53.6	53.7	53.6	45.0	30.0	25.0	1	27.5	32.2	57.0	2,036	15,274	9,102
University of California-Irvine	76.2	78.7	79.8	68.2	37.0	37.0	29.0	1	2.5	16.1	68.0	2,948	13,925	6,895
University of California-Los Angeles	84.6	86.7	87.2	70.5	27.0	34.0	35.0	1	3.9	15.9	54.0	4,200	23,347	6,586
Moderately selective														
Clark Atlanta University	31.0	30.6	34.2	34.2	77.0	46.0	53.0	2	100.0	100.0	79.0	1,068	4,107	13,486
Florida International University	44.4	47.3	46.9	42.0	44.0	26.0	28.0	1	12.4	71.6	41.0	2,227	17,861	3,163
Jackson State University	35.1	36.9	39.7	39.9	61.0	60.0	66.0	1	97.7	97.9	98.0	842	4,821	3,862
South Carolina State University	50.9	48.6	52.8	53.9	66.0	56.0	58.0	1	97.3	97.7	78.0	739	3,780	8,995
St John's University-New York	68.7	64.2	66.0	53.5	44.0	32.0	32.0	2	10.9	26.7	49.0	2,240	11,722	21,630
Tennessee State University	47.1	45.2	44.3	46.4	46.0	39.0	56.0	1	91.1	91.4	47.0	1,231	6,313	4,038
University of California-Riverside	66.2	64.2	64.4	69.3	41.0	47.0	43.0	1	5.6	28.8	68.0	2,235	8,632	6,684
University of California-Santa Cruz	66.8	65.4	69.4	78.2	24.0	33.0	26.0	1	3.0	20.8	71.0	2,309	9,626	7,023
University of La Verne	46.7	50.5	47.4	57.7	41.0	26.0	27.0	2	8.7	49.7	36.0	321	2,297	21,500
University of Maine	54.1	59.9	56.1	36.4	55.0	26.0	25.0	1	0.8	3.0	98.0	1,342	6,419	6,328
University of New Orleans	22.4	23.5	24.5	20.3	41.0	29.0	34.0	1	27.5	35.9	85.0	1,716	9,551	3,702

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student federal grants	Percent in cohort with Pell Grant recipients ¹		Public or private control ²	Percent in cohort			Number of students in cohort			
					1999	2003		Black students	Under-represented minorities	freshmen				
Doctoral, cont.														
Minimally selective														
Idaho State University	20.6	22.5	21.0	18.2	72.0	40.0	49.0	1	1.0	5.5	84.0	1,176	8,536	\$3,700
National-Louis University	25.7	18.3	29.7	35.7	67.0	33.0	27.0	2	11.1	22.2	7.0	128	3,022	16,240
Texas A & M University-Kingsville	26.1	22.4	26.9	19.7	83.0	50.0	50.0	1	7.0	71.9	48.0	872	4,180	3,906
Texas Southern University	15.4	19.4	14.7	13.4	73.0	59.0	40.0	1	93.7	96.4	95.0	702	3,705	3,732
The University of Texas at El Paso	25.3	25.8	27.2	27.5	51.0	36.0	48.0	1	2.4	77.2	65.0	1,639	10,197	4,598
University of Louisiana at Lafayette	30.4	29.6	32.3	19.9	64.0	26.0	29.0	1	25.6	27.4	96.0	2,866	13,682	3,228
Master's														
Very selective														
Fort Valley State University	25.5	30.0	30.2	30.8	74.0	62.0	60.0	1	97.9	98.1	75.0	431	2,255	2,916
Manhattan College	67.7	64.1	66.7	70.3	43.0	28.0	24.0	2	6.8	25.8	100.0	547	2,482	20,000
Morgan State University	38.4	39.3	39.4	39.4	47.0	44.0	41.0	1	97.2	97.7	76.0	1,136	5,208	5,718
Spring Arbor University	64.5	60.6	47.3	18.2	43.0	22.0	29.0	2	5.4	6.3	41.0	205	1,879	15,980
Texas A & M International University	38.6	—	36.2	—	55.0	43.0	55.0	1	#	94.0	90.0	232	1,563	3,206
Moderately selective														
Adams State College	32.3	30.2	32.3	28.0	46.0	39.0	25.0	1	5.7	29.5	32.0	437	1,890	2,602
Alabama State University	20.7	21.2	22.6	22.9	64.0	52.0	62.0	1	95.9	96.3	79.0	1,154	4,331	4,008
Alcorn State University	46.6	47.9	42.7	42.8	53.0	72.0	73.0	1	98.4	98.7	97.0	553	2,327	3,732
American International College	43.1	43.1	36.7	20.9	46.0	32.0	36.0	2	19.0	28.8	57.0	226	1,163	18,544
Arkansas Tech University	40.6	35.9	36.6	30.3	43.0	32.0	44.0	1	4.0	6.7	77.0	816	3,753	3,982
Armstrong Atlantic State University	18.9	19.8	18.2	14.5	65.0	31.0	31.0	1	21.3	24.4	39.0	549	3,854	2,602
Augusta State University	17.8	20.2	18.7	19.0	59.0	33.0	39.0	1	27.8	30.7	53.0	662	3,553	2,702
California State Polytechnic Univ-Pomona	40.1	44.6	42.4	24.3	36.0	35.0	33.0	1	4.0	28.1	56.0	2,033	13,521	2,811
California State University-Chico	47.0	53.0	51.0	21.2	24.0	35.0	36.0	1	2.0	14.9	58.0	1,850	12,468	3,154

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Public or private control ²	Percent in cohort			Number of students in cohort			
					Percent Pell Grant recipients ¹	Black students		minorities	freshmen					
										1999		2003		
Moderately selective master's, cont.														
California State University-Fresno	43.4	46.3	45.8	27.5	52.0	42.0	41.0	1	7.4	44.0	55.0	1,566	12,939	\$2,704
California State University-Los Angeles	31.8	33.9	34.3	21.6	69.0	40.0	41.0	1	8.2	68.6	23.0	1,255	11,468	2,849
California State University-Northridge	30.2	32.2	36.3	22.4	47.0	39.0	—	1	14.1	49.5	50.0	2,244	17,743	2,778
California State University-San Bernardino	39.0	42.5	41.5	26.9	43.0	46.0	48.0	1	11.0	48.6	47.0	1,068	8,620	2,906
California State University-San Marcos	33.5	42.7	40.4	—	23.0	37.0	30.0	1	2.0	26.0	32.0	213	3,213	2,776
California State University-Stanislaus	51.2	43.5	45.5	30.8	43.0	41.0	42.0	1	3.5	34.8	38.0	444	4,013	2,807
Campbellsville University	38.0	38.7	36.0	12.5	52.0	37.0	36.0	2	5.0	6.8	72.0	328	1,476	13,832
Chicago State University	17.8	15.2	13.6	13.1	78.0	55.0	60.0	1	93.0	98.0	43.0	601	4,962	5,888
College of Mount Saint Vincent	68.3	56.9	57.1	52.2	48.0	37.0	39.0	2	9.5	50.0	82.0	266	1,144	19,600
College of Santa Fe	33.5	40.1	44.4	—	45.0	25.0	24.0	2	1.6	15.0	86.0	196	985	20,840
Coppin State University	28.3	21.7	26.0	25.7	85.0	54.0	50.0	1	96.1	96.7	94.0	457	2,637	4,599
Cumberland College	37.5	34.4	40.3	28.6	60.0	39.0	43.0	2	5.1	6.8	87.0	412	1,494	11,858
Delaware State University	29.6	33.3	34.6	35.6	49.0	38.0	37.0	1	88.0	89.4	91.0	578	2,518	4,976
Delta State University	42.3	49.3	46.1	44.6	71.0	32.0	37.0	1	28.3	29.5	39.0	427	3,060	3,582
Dominican University of California	50.0	47.3	50.0	—	32.0	35.0	31.0	2	2.8	21.1	55.0	72	710	24,454
Eastern Kentucky University	33.6	37.1	28.9	18.0	57.0	31.0	18.0	1	6.4	7.0	96.0	2,170	11,737	3,792
Eastern Oregon University	24.6	27.4	32.5	—	43.0	33.0	33.0	1	#	5.7	31.0	317	1,867	5,508
Ferris State University	27.5	34.1	34.7	16.2	47.0	27.0	35.0	1	13.2	15.3	92.0	525	8,100	6,332
Florida Agricultural and Mechanical Univ	43.0	44.8	45.6	45.7	47.0	42.0	49.0	1	99.1	99.3	21.0	2,213	9,556	\$3,074
Freed-Hardeman University	50.0	56.8	50.3	36.4	40.0	33.0	42.0	2	3.1	3.6	80.0	358	1,354	11,960
Fresno Pacific University	57.8	56.8	64.9	—	42.0	44.0	30.0	2	4.1	26.5	40.0	154	724	18,728
Georgia Southwestern State University	28.3	34.0	32.0	35.5	29.0	34.0	41.0	1	23.6	24.8	49.0	322	1,756	2,876
Henderson State University	29.7	33.0	27.9	30.2	40.0	36.0	41.0	1	14.4	16.2	49.0	602	2,960	4,121

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student federal grants	Percent in cohort with Pell Grant recipients ¹		Public or private control ²	Percent in cohort			Number of students in cohort			
					1999	2003		Black students	Under-represented minorities	freshmen				
Moderately selective master's, cont.														
Florida Agricultural and Mechanical Univ	43.0	44.8	45.6	45.7	47.0	42.0	49.0	1	99.1	99.3	21.0	2,213	9,556	\$3,074
Freed-Hardeman University	50.0	56.8	50.3	36.4	40.0	33.0	42.0	2	3.1	3.6	80.0	358	1,354	11,960
Fresno Pacific University	57.8	56.8	64.9	—	42.0	44.0	30.0	2	4.1	26.5	40.0	154	724	18,728
Georgia Southwestern State University	28.3	34.0	32.0	35.5	29.0	34.0	41.0	1	23.6	24.8	49.0	322	1,756	2,876
Henderson State University	29.7	33.0	27.9	30.2	40.0	36.0	41.0	1	14.4	16.2	49.0	602	2,960	4,121
Humboldt State University	39.6	44.4	40.6	35.0	33.0	41.0	41.0	1	3.2	17.5	45.0	731	6,179	2,863
Jacksonville State University	36.8	36.6	36.0	20.7	55.0	35.0	36.0	1	18.7	20.0	57.0	752	5,682	4,040
Johnson State College	33.2	31.3	36.3	—	40.0	35.0	42.0	1	#	2.0	41.0	259	1,236	6,146
Kentucky State University	27.6	39.0	32.6	33.5	90.0	39.0	55.0	1	72.9	73.8	15.0	227	1,844	4,004
La Sierra University	34.2	33.1	33.8	28.6	75.0	28.0	40.0	2	6.3	34.8	59.0	234	1,082	17,790
Lincoln Memorial University	49.7	50.8	28.7	9.1	26.0	44.0	56.0	2	7.0	7.0	30.0	157	831	12,600
Lincoln University	41.3	38.8	44.4	42.7	90.0	52.0	58.0	1	94.4	94.4	88.0	486	1,544	6,498
Mansfield University of Pennsylvania	48.0	47.9	45.5	32.6	37.0	35.0	37.0	1	7.4	9.7	67.0	585	2,655	6,180
Minot State University	32.5	33.8	31.8	—	53.0	42.0	39.0	1	1.5	4.3	79.0	324	2,657	3,712
Morehead State University	43.6	44.1	38.4	35.6	45.0	43.0	48.0	1	4.4	5.5	64.0	1,016	6,133	3,840
Mount St Mary's College	65.2	65.8	57.9	—	60.0	42.0	—	2	5.6	48.8	91.0	145	1,353	21,478
Nyack College	41.3	34.1	39.9	29.3	54.0	46.0	46.0	2	22.6	35.4	40.0	258	1,235	14,790
Oral Roberts University	51.8	50.4	53.7	53.2	36.0	37.0	25.0	2	17.9	24.6	85.0	630	2,882	15,050
Piedmont College	32.5	31.3	44.0	—	33.0	33.0	37.0	2	4.8	7.8	55.0	168	922	13,500
Point Park University	38.6	33.1	41.0	42.1	48.0	29.0	36.0	2	9.2	11.1	45.0	222	1,670	15,960

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Public or private control ²	Percent in cohort			Number of students in cohort			
					Percent Pell Grant recipients ¹	Black students		minorities	freshmen					
										1999		2003		
Moderately selective master's, cont.														
Roberts Wesleyan College	60.1	52.2	59.7	—	43.0	30.0	34.0	2	3.5	7.5	66.0	211	1,085	\$17,840
Saint Francis University	63.9	54.8	61.2	41.7	41.0	28.0	31.0	2	3.8	4.7	80.0	335	1,327	20,440
Saint John Fisher College	60.3	64.6	59.0	33.3	40.0	—	32.0	2	5.9	11.1	66.0	315	1,754	18,450
Saint Peters College	43.1	43.9	45.7	28.4	54.0	29.0	30.0	2	19.4	49.7	61.0	597	2,513	19,750
Saint Thomas University	37.8	36.1	25.4	25.0	52.0	29.0	29.0	2	13.1	66.4	46.0	122	880	17,010
Salem International University	50.7	55.7	34.3	—	42.0	28.0	30.0	2	5.5	8.5	99.0	169	740	10,440
Savannah State University	17.8	17.6	30.5	30.3	79.0	48.0	63.0	1	95.6	96.6	73.0	321	1,822	2,940
Simpson University	50.0	46.2	39.6	—	27.0	44.0	52.0	2	0.5	7.8	97.0	192	996	15,500
Southeastern Oklahoma State University	32.3	35.3	31.5	23.8	46.0	40.0	56.0	1	4.2	36.5	96.0	499	3,017	3,123
Southern Wesleyan University	37.0	40.6	35.2	—	44.0	29.0	39.0	2	5.5	6.6	69.0	91	1,234	14,750
Southwest Baptist University	47.6	43.9	43.0	15.4	45.0	33.0	37.0	2	2.9	5.2	43.0	444	2,270	12,332
St Marys University	60.6	63.3	56.5	47.1	42.0	30.0	35.0	2	3.4	71.9	75.0	499	2,421	17,756
The College of New Rochelle	32.0	34.2	36.0	—	81.0	70.0	74.0	2	67.8	83.3	71.0	852	5,026	16,850
The College of Saint Scholastica	53.2	65.6	66.8	—	43.0	29.0	32.0	2	0.8	1.2	99.0	277	1,276	20,760
The University of Tennessee-Martin	39.2	39.8	40.1	32.2	45.0	28.0	32.0	1	19.6	20.7	72.0	1,176	5,068	4,151
Tuskegee University	49.5	50.8	47.7	47.5	32.0	48.0	37.0	2	98.1	98.1	89.0	683	2,625	11,590
University of Detroit Mercy	56.1	54.6	52.7	33.8	60.0	25.0	25.0	2	30.5	35.4	47.0	476	2,947	20,970
University of Dubuque	39.8	37.0	31.4	—	45.0	32.0	53.0	2	3.2	4.8	77.0	188	695	16,860
University of Mary	41.8	51.2	51.7	—	47.0	36.0	34.0	2	1.5	3.5	96.0	404	1,899	10,232
University of Mary Hardin-Baylor	48.7	41.2	37.5	29.5	50.0	32.0	35.0	2	8.6	18.1	58.0	509	2,012	12,380
University of the Incarnate Word	35.1	40.2	42.4	27.8	39.0	37.0	30.0	2	4.9	69.7	35.0	375	2,313	16,082
University of West Alabama	29.9	26.5	30.8	28.9	68.0	38.0	51.0	1	37.5	39.6	98.0	341	1,735	4,196

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Public or private control ²	Percent in cohort			Number of students in cohort			
					Percent Pell Grant recipients ¹	Black students		Under-represented minorities	freshmen					
										1999		2003		
Moderately selective master's, cont.														
Walla Walla College	44.2	48.6	48.2	—	58.0	26.0	32.0	2	0.7	6.6	57.0	301	1,346	17,829
Westminster College	45.1	54.5	55.4	—	42.0	25.0	34.0	2	#	8.7	57.0	334	1,485	18,482
Wheeling Jesuit University	54.8	53.5	62.9	—	40.0	25.0	24.0	2	0.4	1.2	73.0	264	1,172	19,585
William Carey College	46.7	32.6	45.3	32.0	75.0	52.0	59.0	2	14.5	16.9	20.0	172	1,324	8,100
Woodbury University	47.3	42.2	56.7	—	52.0	42.0	42.0	2	7.7	53.8	31.0	104	791	21,858
Minimally selective master's														
Albany State University	25.6	32.7	39.5	39.9	64.0	60.0	66.0	1	98.6	98.8	74.0	420	2,497	2,896
Auburn University-Montgomery	26.5	28.3	28.6	30.6	56.0	34.0	29.0	1	24.3	25.7	51.0	405	3,696	4,460
Cameron University	25.1	23.6	20.8	7.5	43.0	30.0	34.0	1	12.2	22.6	71.0	433	3,567	3,000
Cheyney University of Pennsylvania	30.9	29.2	31.9	31.8	85.0	70.0	62.0	1	99.1	99.1	80.0	235	1,005	5,565
Colorado State University-Pueblo	29.8	31.7	29.0	22.6	42.0	26.0	26.0	1	5.2	36.7	47.0	611	4,085	3,189
East Central University	32.9	33.9	32.9	15.0	42.0	43.0	45.0	1	3.4	19.7	94.0	580	3,042	2,995
Fayetteville State University	38.7	38.1	34.7	36.2	60.0	39.0	54.0	1	90.0	91.7	62.0	519	3,026	2,521
Grambling State University	28.0	34.6	37.7	37.9	88.0	59.0	66.0	1	98.0	99.7	96.0	766	4,508	3,554
Lincoln University	35.4	35.3	31.4	27.3	60.0	28.0	35.0	1	46.8	47.5	72.0	405	2,322	4,065
Mercy College-Main Campus	22.7	13.1	18.3	18.2	91.0	—	37.0	2	33.2	80.2	92.0	781	5,895	11,398
Midamerica Nazarene University	55.7	50.0	44.5	16.7	44.0	25.0	25.0	2	4.7	7.5	67.0	254	1,154	13,630
Montana State University-Northern	36.4	32.3	28.5	—	68.0	47.0	50.0	1	1.1	9.0	50.0	193	1,288	4,167
Mount Mary College	46.2	51.2	47.6	—	53.0	31.0	37.0	2	#	2.4	71.0	126	723	14,936
Murray State University	56.0	56.5	57.3	52.9	48.0	26.0	29.0	1	3.7	4.6	59.0	944	6,772	3,984

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates				Low-income indicators			1998 cohort characteristics							
	2002	2003	2004	Black student 2004	Percent		Public or private control ²	Percent in cohort					Number of students in cohort	Undergraduate enrollment ³	2004 tuition and fees
					in cohort with federal grants	Percent Pell Grant recipients ¹		Black students	minorities	freshmen	Entering				
												1999			
Minimally selective master's, cont.															
New Mexico Highlands University	19.0	18.2	24.1	—	70.0	46.0	48.0	1	1.6	82.0	39.0	320	1,527	\$2,300	
Norfolk State University	27.3	28.3	27.1	27.3	86.0	47.0	49.0	1	96.0	97.5	68.0	1,003	5,818	4,295	
North Carolina A & T State University	40.2	44.0	42.5	43.1	47.0	36.0	47.0	1	96.1	96.5	81.0	1,366	5,994	3,066	
North Carolina Central University	48.9	48.7	50.5	50.2	69.0	41.0	54.0	1	92.7	93.5	60.0	673	3,604	3,042	
Northeastern Illinois University	14.1	17.9	15.2	4.1	49.0	31.0	31.0	1	15.4	47.1	37.0	961	5,844	3,596	
Northeastern State University	29.4	32.8	29.9	43.6	61.0	44.0	52.0	1	3.9	38.2	94.0	1,004	6,292	3,000	
Northern State University	40.6	40.9	46.6	—	48.0	30.0	26.0	1	0.6	3.6	60.0	363	2,183	4,448	
Northwest Nazarene University	39.4	53.4	49.0	—	48.0	27.0	11.0	2	0.3	2.6	98.0	310	1,055	16,570	
Northwestern State University of Louisiana	27.3	27.0	31.1	23.5	49.0	41.0	44.0	1	30.9	35.2	67.0	1,259	6,581	3,241	
Oakland City University	27.3	96.5	26.6	15.0	48.0	30.0	24.0	2	7.1	9.2	67.0	282	1,029	12,960	
Our Lady of the Lake University-San Antonio	37.2	37.6	32.6	28.6	66.0	36.0	43.0	2	4.6	81.3	47.0	310	1,785	16,092	
Prairie View A & M University	33.6	37.1	34.6	34.8	47.0	50.0	53.0	1	97.6	98.7	99.0	1,197	4,496	4,174	
Southeastern Louisiana University	23.6	22.4	25.3	18.6	38.0	36.0	38.0	1	14.1	16.1	63.0	2,563	12,348	3,191	
Southern Arkansas University Main Campus	27.8	28.1	37.3	29.1	56.0	39.0	41.0	1	21.4	22.6	99.0	482	2,255	3,798	
Southern University at New Orleans	9.2	11.7	11.7	11.4	95.0	62.0	59.0	1	98.0	98.0	90.0	351	3,189	2,872	
Southwestern Oklahoma State University	33.8	35.7	35.3	20.8	46.0	34.0	46.0	1	2.8	11.9	94.0	856	4,159	3,000	
Sul Ross State University	15.2	17.5	17.8	#	54.0	46.0	65.0	1	6.3	52.7	68.0	315	1,827	3,228	
The University of Texas of the Permian Basin	23.1	29.2	31.3	—	41.0	31.0	47.0	1	6.3	51.8	39.0	112	1,278	3,124	
The University of Texas-Pan American	24.3	26.4	26.7	13.3	49.0	46.0	53.0	1	0.9	82.8	92.0	1,686	8,491	2,676	
Touro College	45.2	53.2	46.8	—	85.0	60.0	58.0	2	#	#	89.0	538	6,402	10,500	
Trinity University	50.9	36.8	43.9	45.3	62.0	33.0	45.0	2	53.5	76.8	79.0	107	772	16,860	
Tusculum College	39.3	45.0	45.5	29.4	59.0	33.0	34.0	2	10.9	10.9	76.0	156	1,231	15,110	
University of Great Falls	24.4	15.0	28.8	—	65.0	54.0	52.0	2	#	5.1	47.0	80	719	12,860	
University of Louisiana at Monroe	29.0	29.2	27.3	20.3	58.0	34.0	41.0	1	32.3	33.8	69.0	1,524	8,489	3,076	
University of Maryland-Eastern Shore	41.2	44.4	42.4	43.2	14.0	37.0	48.0	1	84.1	85.5	#	622	2,699	5,558	
University of Mobile	47.7	40.3	43.4	37.5	70.0	51.0	37.0	2	15.5	18.7	96.0	166	1,498	9,890	

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Percent Pell Grant recipients ¹	Public or private control ²	Percent in cohort			Number of students in cohort		
					1999	2003			Black students	Under-represented minorities	freshmen			
Minimally selective master's, cont.														
University of North Carolina at Pembroke	34.0	38.1	41.4	39.2	40.0	33.0	48.0	1	15.9	44.6	50.0	464	2,372	\$2,825
University of Rio Grande	62.5	2.0	32.0	—	63.0	29.0	42.0	2	1.0	1.9	83.0	228	1,695	6,560
University of Wisconsin-Superior	32.8	33.4	34.3	—	42.0	32.0	31.0	1	#	0.8	43.0	376	2,032	4,802
Virginia State University	41.6	38.7	41.4	41.8	58.0	52.0	54.0	1	96.9	97.4	76.0	871	3,150	4,544
Waynesburg College	53.5	50.2	50.3	26.9	43.0	41.0	33.0	2	9.0	10.4	86.0	290	1,156	14,540
Western New Mexico University	22.6	14.7	15.2	—	56.0	39.0	53.0	1	0.9	55.7	80.0	250	1,601	2,687
Xavier University of Louisiana	57.4	58.8	48.4	48.5	66.0	46.0	49.0	2	98.6	98.7	99.0	926	3,051	12,200
Bachelor's														
Very selective														
Alice Lloyd College	30.2	31.3	27.5	—	63.0	52.0	58.0	2	0.6	1.9	83.0	160	490	7,400
Berea College	50.0	49.3	62.6	64.3	82.0	74.0	76.0	2	14.0	15.5	94.0	414	1,486	516
Bethany College of the Assemblies of God	38.4	31.1	25.0	—	43.0	32.0	40.0	2	5.3	18.4	45.0	76	422	13,830
Central State University	18.8	21.6	23.0	24.7	73.0	48.0	67.0	1	93.5	93.5	98.0	230	903	4,710
Clafflin University	69.8	71.2	67.7	66.9	83.0	85.0	77.0	2	97.7	97.7	87.0	260	1,103	10,452
College of the Ozarks	48.0	47.9	51.4	—	61.0	49.0	49.0	2	0.3	3.1	76.0	294	1,375	13,150
Columbia College	56.9	49.8	53.0	41.7	40.0	34.0	43.0	2	31.3	31.7	68.0	268	1,219	18,040
Dana College	53.6	53.7	45.7	—	40.0	35.0	41.0	2	6.3	9.4	80.0	127	537	16,800
Emmanuel College	26.9	34.2	29.2	38.1	36.0	33.0	38.0	2	9.7	9.7	74.0	216	805	9,570
Morehouse College	56.0	55.6	50.1	49.2	42.0	31.0	37.0	2	95.8	96.2	90.0	761	3,079	15,740
Spelman College	77.5	77.0	77.0	77.4	51.0	—	34.0	2	98.2	98.4	95.0	505	1,864	14,940
Sterling College	41.8	39.3	40.4	20.0	50.0	34.0	39.0	2	6.2	11.2	59.0	161	445	13,907
Tennessee Temple University	30.8	34.2	31.1	0.0	46.0	49.0	36.0	2	6.6	9.0	100.0	167	701	7,180
Wilberforce University	31.3	33.8	32.1	33.6	57.0	62.0	51.0	2	95.9	95.9	97.0	221	951	10,780

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Under-graduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Public or private control ²	Percent in cohort			Number of students in cohort			
					Percent Pell Grant recipients ¹	Black students		minorities	freshmen					
										1999		2003		
Moderately selective bachelor's, cont.														
Alderson Broaddus College	42.3	32.1	46.5	—	68.0	45.0	44.0	2	3.2	5.2	67.0	155	633	\$17,116
Anderson College	40.6	47.5	40.2	44.0	47.0	35.0	29.0	2	9.8	11.4	77.0	254	967	14,225
Bennett College	80.0	55.9	37.1	37.1	69.0	53.0	58.0	2	98.3	98.8	83.0	175	595	11,801
Bethany College	60.6	—	66.8	—	35.0	34.0	32.0	2	4.1	4.6	89.0	196	717	14,022
Bethel College	21.7	20.0	39.0	—	40.0	34.0	49.0	2	8.5	12.2	84.0	82	605	9,630
Bethune Cookman College	31.5	30.3	38.5	37.2	65.0	72.0	76.0	2	93.7	94.5	85.0	623	2,366	10,610
Blackburn College	39.4	34.8	39.6	—	67.0	41.0	42.0	2	5.8	7.2	79.0	144	502	14,600
Bryan College	54.5	48.8	58.6	—	43.0	29.0	25.0	2	2.1	2.9	53.0	140	507	14,100
California State University-Monterey Bay	35.0	30.3	36.4	9.1	40.0	47.0	40.0	1	5.3	43.7	60.0	264	1,606	2,761
Central Methodist Univ-Coll of Liberal Arts & Science	42.5	42.5	39.0	14.8	34.0	37.0	27.0	2	12.4	16.1	70.0	218	1,158	14,490
Chatham College	65.7	62.0	53.5	61.5	49.0	33.0	24.0	2	9.2	11.3	28.0	142	534	21,996
Chowan College	20.8	19.3	22.6	21.7	47.0	35.0	47.0	2	25.5	27.7	98.0	235	677	14,100
Coastal Carolina University	35.4	36.6	39.8	42.4	43.0	20.0	26.0	1	6.9	8.8	69.0	855	3,948	6,180
Coker College	54.1	42.0	54.9	36.0	36.0	42.0	51.0	2	17.4	17.4	63.0	144	852	16,794
College of Saint Mary	55.6	37.8	48.8	—	44.0	—	45.0	2	4.8	13.1	29.0	84	752	17,000
Concord University	30.6	35.0	33.2	33.3	67.0	35.0	35.0	1	6.6	7.4	74.0	545	2,392	3,548
Crown College	44.0	53.2	54.7	—	66.0	34.0	41.0	2	0.9	0.9	47.0	106	628	14,354
Davis And Elkins College	39.4	26.9	64.3	—	51.0	36.0	42.0	2	3.1	4.7	51.0	129	623	15,666
Dillard University	39.0	42.3	49.7	49.4	68.0	77.0	66.0	2	98.7	98.7	99.0	525	1,643	12,010
East Texas Baptist University	35.0	41.4	45.1	36.4	36.0	39.0	38.0	2	4.1	7.5	65.0	268	1,102	12,000

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates				Low-income indicators			1998 cohort characteristics							
	2002	2003	2004	Black student 2004	Percent		Public or private control ²	Percent in cohort					Number of students in cohort	Undergraduate enrollment ³	2004 tuition and fees
					federal grants	Percent Pell Grant recipients ¹		Black students	minorities	freshmen	Under-represented				
											entering	students			
1999	2003														
Moderately selective bachelor's, cont.															
Elizabeth City State University	52.6	50.5	45.5	47.9	65.0	53.0	57.0	1	83.9	85.2	69.0	378	1,818	\$2,475	
Emory and Henry College	60.2	56.9	50.7	31.3	42.0	31.0	26.0	2	5.5	6.6	77.0	290	948	16,690	
Eureka College	52.3	48.2	65.8	—	51.0	38.0	34.0	2	4.4	6.1	100.0	114	438	13,400	
Felician College	31.6	—	36.4	32.0	49.0	31.0	30.0	2	19.4	41.1	50.0	151	846	15,900	
Ferrum College	27.5	45.4	33.4	39.6	35.0	34.0	45.0	2	18.1	19.1	78.0	305	924	16,870	
Fisk University	61.9	77.7	63.8	66.7	50.0	50.0	54.0	2	95.1	95.1	80.0	224	746	12,450	
Grace University	31.0	33.7	48.8	—	52.0	39.0	39.0	2	#	2.5	47.0	80	369	11,330	
Green Mountain College	40.0	31.7	32.1	—	52.0	26.0	22.0	2	1.1	2.2	99.0	224	594	21,034	
Greenville College	54.2	54.1	52.9	30.0	41.0	33.0	37.0	2	8.9	12.1	62.0	225	1,035	16,824	
Hiram College	67.7	59.2	65.4	75.0	44.0	31.0	29.0	2	6.9	8.2	72.0	231	972	22,068	
Johnson C Smith University	40.9	40.3	41.2	41.0	76.0	66.0	68.0	2	99.8	99.8	99.0	481	1,407	13,712	
Judson College	51.0	43.9	38.5	25.0	40.0	33.0	40.0	2	12.5	12.5	80.0	96	293	9,250	
Kansas Wesleyan University	29.9	29.8	32.7	18.2	38.0	35.0	39.0	2	10.6	14.4	41.0	104	563	15,000	
Kentucky Christian College	41.7	33.3	41.5	—	26.0	34.0	36.0	2	2.4	6.7	68.0	164	540	10,640	
Lane College	27.9	28.6	28.2	28.2	81.0	67.0	93.0	2	100.0	100.0	79.0	209	617	7,176	
Lasell College	84.3	62.8	42.1	38.9	46.0	38.0	39.0	2	18.3	25.4	49.0	197	636	18,500	
Livingstone College	30.7	24.5	34.1	32.1	78.0	87.0	73.0	2	95.2	95.2	97.0	252	872	13,527	
Louisiana College	44.2	45.7	50.4	—	34.0	34.0	27.0	2	3.0	6.0	70.0	234	876	10,300	
Lubbock Christian University	35.7	15.6	43.4	18.2	34.0	33.0	42.0	2	4.0	12.8	45.0	274	1,107	11,994	
Macmurray College	42.3	48.0	51.5	16.7	39.0	45.0	46.0	2	7.4	11.7	58.0	163	605	14,600	
Marlboro College	32.1	43.9	48.6	—	33.0	34.0	—	2	1.4	1.4	79.0	72	271	25,740	
Marymount College of Fordham University	56.9	39.4	50.0	41.2	53.0	31.0	—	2	19.8	53.5	75.0	108	707	19,616	
Marymount Manhattan College	44.7	43.7	45.0	51.0	45.0	27.0	20.0	2	12.1	29.9	69.0	422	1,770	17,412	

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Public or private control ²	Percent in cohort			Number of students in cohort			
					Percent Pell Grant recipients ¹	Black students		minorities	freshmen					
										1999		2003		
Moderately selective bachelor's, cont.														
Maryville College	64.5	53.5	55.3	—	50.0	32.0	32.0	2	4.0	5.4	80.0	228	920	\$21,065
Mcmurry University	41.8	41.6	40.1	32.1	45.0	33.0	37.0	2	10.7	21.4	58.0	262	1,169	13,550
Mcperson College	45.0	26.4	30.4	—	56.0	35.0	46.0	2	6.0	11.9	98.0	135	468	14,645
Medaille College	11.1	18.0	36.3	13.8	55.0	36.0	30.0	2	25.9	32.1	71.0	124	965	14,320
Midland Lutheran College	53.5	46.1	42.2	8.0	56.0	32.0	41.0	2	9.1	10.5	94.0	275	951	17,210
Mills College	59.7	62.0	65.4	—	36.0	39.0	35.0	2	9.2	16.3	53.0	127	721	27,085
Mississippi Valley State University	33.2	36.7	40.5	40.4	82.0	77.0	83.0	1	97.8	98.1	49.0	321	2,100	3,832
Missouri Southern State University	32.3	30.1	30.3	36.0	67.0	26.0	32.0	1	3.1	6.7	89.0	802	4,467	3,976
Missouri Valley College	19.9	20.5	19.0	7.1	46.0	39.0	41.0	2	21.4	26.0	68.0	458	1,359	13,900
Morningside College	52.6	58.6	51.9	—	50.0	29.0	38.0	2	1.7	3.5	71.0	237	990	17,170
Mount Ida College	40.0	—	23.2	20.0	60.0	29.0	34.0	2	19.2	30.8	75.0	56	1,499	17,671
Newberry College	55.1	48.4	49.0	50.0	52.0	31.0	41.0	2	19.4	20.9	79.0	206	703	18,101
North Greenville College	36.7	43.0	36.9	23.5	46.0	43.0	40.0	2	11.1	11.8	81.0	306	1,031	9,760
Northland College	43.2	38.9	45.2	—	44.0	31.0	29.0	2	0.6	6.3	57.0	177	808	18,715
Northwest Christian College	32.1	26.5	34.9	—	51.0	44.0	50.0	2	1.6	8.1	100.0	63	411	17,350
Northwestern College	55.1	58.9	57.3	—	37.0	36.0	35.0	2	0.5	0.5	100.0	365	1,176	16,360
Oakwood College	38.9	36.4	50.8	51.0	44.0	36.0	43.0	2	84.3	84.7	83.0	327	1,681	11,298
Ohio Valley College	25.0	20.0	28.8	—	49.0	36.0	34.0	2	4.5	5.5	59.0	111	405	12,012
Olivet College	31.5	30.3	37.4	35.9	48.0	45.0	54.0	2	21.0	25.8	59.0	198	830	15,994
Paine College	23.3	30.9	29.7	30.2	61.0	59.0	62.0	2	96.8	98.6	83.0	222	791	9,626
Rocky Mountain College	40.2	47.3	43.2	—	32.0	34.0	38.0	2	0.6	4.3	71.0	162	719	14,715
Saint Augustines College	14.0	28.3	37.1	35.2	70.0	53.0	62.0	2	94.3	94.6	72.0	299	1,531	10,388
Schreiner University	36.0	40.0	41.0	—	68.0	46.0	43.0	2	2.8	18.8	58.0	144	641	14,440

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Public or private control ²	Percent in cohort			Number of students in cohort			
					Percent Pell Grant recipients ¹	Black students		minorities	freshmen					
										1999		2003		
Moderately selective bachelor's, cont.														
Seton Hill University	61.9	50.3	49.3	31.3	81.0	27.0	29.0	2	10.7	17.3	64.0	152	815	\$20,630
Shaw University	31.6	24.3	30.4	31.0	70.0	56.0	55.0	2	96.6	97.7	60.0	381	2,278	9,438
Southeastern College Assemblies of God	33.9	42.9	35.6	38.5	37.0	38.0	34.0	2	6.0	16.2	60.0	216	1,031	10,140
Southern Vermont College	33.0	35.5	29.4	—	42.0	37.0	32.0	2	3.2	7.9	58.0	68	458	12,498
Stillman College	88.4	27.4	12.0	12.0	80.0	—	66.0	2	99.6	99.6	94.0	284	1,008	10,596
Tabor College	38.5	47.2	49.0	—	45.0	29.0	30.0	2	8.7	10.6	100.0	104	437	15,120
Talladega College	53.3	33.3	33.1	33.7	76.0	51.0	71.0	2	96.5	97.1	80.0	172	599	7,128
The Franciscan University of the Prairies	44.1	37.4	37.3	—	41.0	34.0	33.0	2	9.0	11.9	100.0	67	501	14,690
The Master's College and Seminary	62.8	61.0	60.8	—	54.0	29.0	25.0	2	1.8	4.7	62.0	171	911	17,970
The University of Virginia's College at Wise	43.7	41.9	42.8	25.0	50.0	33.0	35.0	1	8.1	8.8	73.0	297	1,316	4,782
Toccoa Falls College	46.1	44.1	44.1	—	42.0	32.0	38.0	2	0.9	2.2	76.0	229	913	11,925
Tougaloo College	49.3	47.1	49.5	49.2	82.0	69.0	73.0	2	99.5	99.5	83.0	198	846	8,610
Trinity Baptist College	42.9	36.2	33.8	—	39.0	38.0	37.0	2	#	5.4	72.0	74	298	5,070
University of Arkansas at Pine Bluff	27.5	31.0	28.7	28.7	65.0	56.0	77.0	1	97.6	98.1	81.0	721	2,782	4,044
University of Charleston	43.5	39.5	39.2	—	58.0	27.0	40.0	2	2.5	4.0	65.0	209	1,052	19,200
University of Maine at Farmington	50.7	55.8	57.6	—	40.0	38.0	38.0	1	0.2	2.8	78.0	484	2,176	5,240
University of Minnesota-Morris	55.7	51.2	51.7	55.0	55.0	26.0	24.0	1	3.8	11.7	67.0	522	1,891	9,056
University of Pittsburgh-Bradford	43.2	48.7	42.3	—	63.0	32.0	31.0	1	3.3	3.8	69.0	239	1,089	9,980
University of Pittsburgh-Greensburg	49.4	46.6	44.4	—	40.0	28.0	28.0	1	2.2	3.2	77.0	414	1,366	9,960
University of Pittsburgh-Johnstown	59.8	60.1	62.8	—	42.0	25.0	29.0	1	1.0	1.1	83.0	715	2,930	9,932
University of the Ozarks	44.5	48.4	49.6	—	40.0	39.0	30.0	2	4.4	10.9	65.0	137	488	13,312
Utica College	55.6	59.7	53.9	50.0	48.0	41.0	37.0	2	14.7	23.2	57.0	306	1,702	21,270
Voorhees College	9.4	54.0	30.8	30.5	98.0	67.0	87.0	2	98.7	99.4	61.0	156	931	7,276
Warner Southern College	29.4	39.7	50.0	—	34.0	38.0	37.0	2	10.3	17.6	37.0	68	729	11,890
Wells College	62.0	68.8	67.4	—	31.0	41.0	38.0	2	4.9	7.4	75.0	89	337	14,900

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Under-graduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Public or private control ²	Percent in cohort			Number of students in cohort			
					Percent Pell Grant recipients ¹	Black students		Under-represented minorities	freshmen					
										1999		2003		
Moderately selective bachelor's, cont.														
Wesleyan College	40.6	46.1	47.4	45.2	49.0	37.0	32.0	2	28.4	32.4	13.0	154	501	\$10,900
Whittier College	50.0	50.8	55.3	68.8	53.0	34.0	27.0	2	4.7	30.4	99.0	342	1,253	25,548
William Penn University	17.0	21.4	21.1	4.2	54.0	34.0	46.0	2	21.1	25.4	49.0	114	1,023	14,604
Williams Baptist College	40.2	46.4	42.3	—	57.0	30.0	43.0	2	5.7	8.0	75.0	111	576	8,600
York College	28.0	54.5	42.6	—	38.0	45.0	40.0	2	3.3	3.3	71.0	122	479	11,930
Minimally selective bachelor's														
Allen University	—	22.1	12.5	12.8	82.0	79.0	82.0	2	97.7	97.7	67.0	88	320	7,493
Alverno College	43.2	47.4	43.9	36.4	48.0	36.0	49.0	2	29.2	39.8	54.0	114	1,339	14,410
Atlantic Union College	41.0	38.7	35.8	42.9	56.0	53.0	33.0	2	37.8	58.1	68.0	81	520	12,780
Benedict College	24.4	25.3	23.5	23.5	97.0	88.0	76.0	2	100.0	100.0	80.0	650	2,126	12,256
Bloomfield College	35.7	25.3	27.5	30.5	71.0	45.0	58.0	2	64.4	85.8	62.0	247	1,586	13,900
Boricua College	12.6	22.4	18.4	30.0	94.0	94.0	76.0	2	8.8	95.6	100.0	114	1,056	8,350
Brewton-Parker College	19.5	16.3	18.9	18.0	57.0	27.0	35.0	2	26.3	28.4	73.0	201	1,155	11,070
Concordia College	—	10.9	3.6	4.3	90.0	75.0	77.0	2	84.9	84.9	96.0	192	525	6,264
Dakota Wesleyan University	49.2	51.8	38.5	—	54.0	43.0	53.0	2	0.6	8.3	60.0	156	643	14,800
Dickinson State University	22.4	28.1	20.1	—	47.0	35.0	37.0	1	0.6	2.8	57.0	363	1,576	3,799
Edward Waters College	20.4	3.8	17.9	18.2	98.0	64.0	73.0	2	96.2	96.6	80.0	234	679	9,176
Evangel University	91.3	100.0	53.0	60.0	83.0	31.0	43.0	2	2.8	10.5	100.0	400	1,599	11,985
Fairmont State University	35.6	40.7	38.2	45.5	62.0	28.0	—	1	2.1	2.2	98.0	555	5,407	3,640
Florida Memorial College	48.1	58.5	22.5	23.8	69.0	81.0	82.0	2	87.6	91.5	78.0	485	1,692	10,672

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Under-graduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent in cohort with federal grants		Public or private control ²	Percent in cohort			Number of students in cohort			
					Percent Pell Grant recipients ¹	Black students		minorities	freshmen					
										1999		2003		
Minimally selective bachelor's,														
Glenville State College	31.4	26.1	30.6	20.0	66.0	44.0	30.0	1	10.9	11.8	82.0	229	1,862	\$3,276
Hilbert College	36.9	44.4	23.4	10.0	64.0	35.0	35.0	2	10.9	14.1	96.0	94	661	14,300
Hillsdale Free Will Baptist College	8.8	9.3	13.0	—	59.0	32.0	41.0	2	9.1	15.6	77.0	77	210	7,310
Huston-Tillotson College	20.3	20.0	15.8	18.6	78.0	—	55.0	2	73.4	82.0	74.0	139	552	8,190
Indiana University-East	23.9	25.6	18.9	—	52.0	28.0	37.0	1	3.9	5.8	49.0	159	1,497	4,601
Jamestown College	46.2	60.8	53.2	—	48.0	37.0	25.0	2	0.4	3.2	72.0	278	1,095	9,400
Keuka College	49.6	53.9	50.4	—	44.0	45.0	41.0	2	1.3	4.0	98.0	226	828	17,365
Langston University	38.0	36.4	31.7	32.7	68.0	33.0	55.0	1	93.3	95.6	96.0	180	2,614	3,003
Le Moyne-Owen College	16.9	23.2	14.0	14.1	66.0	67.0	66.0	2	98.9	98.9	90.0	179	766	9,360
Lee University	41.1	39.8	46.7	50.0	23.0	35.0	24.0	2	2.6	4.9	58.0	722	2,873	9,260
Lindsey Wilson College	25.2	19.8	18.9	14.6	64.0	49.0	62.0	2	9.9	11.6	55.0	413	1,297	13,140
Lyndon State College	39.2	32.3	35.3	—	42.0	32.0	31.0	1	#	#	73.0	238	1,062	6,146
Mars Hill College	40.9	39.2	39.6	31.8	41.0	29.0	36.0	2	7.4	10.1	68.0	308	1,158	15,922
Martin Methodist College	16.1	28.7	12.9	16.7	60.0	32.0	38.0	2	9.1	10.6	49.0	132	483	13,650
Midway College	23.0	32.9	25.7	—	54.0	25.0	45.0	2	1.4	1.4	36.0	74	693	12,750
Miles College	72.8	70.9	72.4	72.2	90.0	95.0	88.0	2	99.4	99.4	98.0	340	1,305	5,668
Morris College	27.6	42.4	39.2	39.2	80.0	79.0	76.0	2	100.0	100.0	89.0	204	867	7,785
Mountain State University	19.3	16.5	22.7	7.1	88.0	49.0	45.0	2	11.8	12.6	29.0	119	1,636	5,400
Oklahoma Wesleyan University	38.0	53.3	44.6	—	54.0	31.0	32.0	2	2.7	16.1	74.0	112	525	12,900
Pikeville College	32.2	29.8	38.4	—	78.0	56.0	48.0	2	#	#	98.0	146	695	10,500
Pine Manor College	—	47.1	40.0	44.4	40.0	31.0	56.0	2	18.9	30.5	89.0	95	294	14,544
Rochester College	20.5	30.6	26.1	21.4	41.0	27.0	31.0	2	12.6	14.4	27.0	111	395	11,456
Saint Pauls College	27.5	32.5	15.4	15.1	62.0	62.0	41.0	2	96.7	99.2	99.0	123	583	9,816

See notes at end of table.

Table B-1. Characteristics of low-income serving 4-year institutions, by Carnegie classification and selectivity: 2004—Continued

Carnegie classification and selectivity	6-year graduation rates			Low-income indicators				1998 cohort characteristics					Undergraduate enrollment ³	2004 tuition and fees
	2002	2003	2004	Black student 2004	Percent		Public or private control ²	Percent in cohort			Number of students in cohort			
					in cohort with federal grants	Percent Pell Grant recipients ¹		Black students	Under-represented minorities	freshmen				
												1999		
Minimally selective bachelor's, cont.														
Shawnee State University	30.1	19.3	28.7	7.1	15.0	39.0	46.0	1	4.4	6.2	57.0	328	2,965	\$5,202
St Francis College	53.4	49.5	56.6	47.9	52.0	28.0	33.0	2	17.1	33.9	62.0	440	2,021	11,780
Texas College	100.0	30.8	17.8	17.8	46.0	83.0	79.0	2	100.0	100.0	60.0	73	256	7,700
The University of Montana-Western	29.3	23.8	29.7	—	34.0	41.0	36.0	1	0.7	2.6	93.0	165	947	3,740
Thiel College	42.2	33.0	31.5	13.6	47.0	38.0	38.0	2	9.5	9.9	100.0	232	875	15,990
Thomas University	5.1	14.5	30.3	42.9	90.0	36.0	56.0	2	15.7	15.7	25.0	89	620	7,940
University of Arkansas at Monticello	26.3	21.5	25.7	17.7	67.0	46.0	—	1	21.1	22.9	67.0	455	1,852	3,625
University of Maine at Augusta	46.7	23.1	10.3	—	69.0	32.0	35.0	1	0.3	4.8	32.0	291	2,850	4,695
University of Maine at Fort Kent	43.8	50.0	36.5	—	58.0	25.0	26.0	1	#	1.6	41.0	63	617	4,410
University of Maine at Machias	52.0	44.4	44.8	—	60.0	34.0	28.0	1	1.7	5.2	94.0	58	695	4,515
University of Maine at Presque Isle	35.7	30.5	28.6	—	73.0	33.0	32.0	1	0.5	3.0	92.0	203	1,098	4,460
University of Science and Arts of Oklahoma	21.8	32.0	34.4	46.2	47.0	38.0	38.0	1	4.7	13.6	94.0	279	1,234	2,544
Valley City State University	45.5	43.5	54.3	—	49.0	31.0	26.0	1	2.9	5.1	66.0	175	927	4,558
Virginia Union University	26.6	1.6	31.6	31.9	63.0	45.0	54.0	2	99.7	100.0	98.0	313	1,230	12,260
West Virginia University at Parkersburg	28.8	15.6	14.4	—	41.0	26.0	36.0	1	0.7	2.1	86.0	146	2,470	1,668
Wiley College	25.7	29.6	23.6	24.8	49.0	62.0	74.0	2	87.3	87.3	98.0	157	652	6,782
Winston-Salem State University	42.9	47.6	43.7	45.3	62.0	36.0	51.0	1	95.6	96.0	59.0	524	2,538	2,675

— Not available.

Rounds to zero.

¹ Refers to percent of Pell Grant recipients in total undergraduate enrollment (unduplicated count).

² Public = 1; private not-for-profit = 2.

³ Full-time equivalent enrollment in 1998.

NOTE: Low-income serving institutions are defined as those with 40 percent or more federal grant aid recipients in the 1998 freshman cohort and at least 25 percent Pell Grant recipients in the fall undergraduate enrollment in 1999 or at least one-third Pell Grant recipients in fall undergraduate enrollment irrespective of the freshman cohort.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

Table B-2. Institutions with large proportions of low-income freshman in 1998 with missing Pell Grant data (highlighted institutions would be in top 10 percent for graduation rates among low-income serving institutions in comparable selectivity levels): 2004

	Percent with federal grant in 1998 cohort	2004 graduation rate	Public (1) or private not-for- profit (2)
Median graduation rate		38.2	
Antioch College	64	58.8	2
California State University-Bakersfield	49	37.6	1
California State University-Dominguez Hills	75	34.8	1
Case Western Reserve University	46	81.1	2
Castleton State College	48	40.4	1
Cuny Bernard M Baruch College	51	53.0	1
Cuny Brooklyn College	55	43.5	1
Cuny City College	65	30.7	1
Cuny College of Staten Island	47	36.4	1
Cuny Hunter College	51	31.9	1
Cuny Lehman College	76	35.3	1
Cuny Queens College	47	51.0	1
Cuny York College	69	28.2	1
East-West University	80	6.7	2
Eastern New Mexico University-Main Campus	53	32.0	1
Farmingdale State University of New York	40	36.8	1
Faulkner University	44	24.9	2
Kent State University-Main Campus	59	48.9	1
Linfield College	89	67.7	2
Lock Haven University of Pennsylvania	53	48.6	1
Montana State University-Billings	49	23.8	1
New York Institute of Technology-Central Islip	56	31.4	2
New York Institute of Technology-Manhattan Campus	91	30.3	2
New York Institute of Technology-Old Westbury	54	46.3	2
Ottawa University	45	31.6	2
Rutgers University-Camden	40	53.7	1
Rutgers University-Newark	42	54.5	1
Southern University and A & M College	70	26.6	1
Suny at Buffalo	57	59.5	1
Suny at Stony Brook	41	57.6	1
Suny College at Brockport	57	50.7	1
Suny College at Buffalo	44	40.0	1
Suny College at Old Westbury	77	27.2	1
Suny College at Oneonta	40	49.8	1
Suny College at Purchase	89	42.5	1

See notes at end of table.

Table B-2. Institutions with large proportions of low-income freshman in 1998 with missing Pell Grant data (highlighted institutions would be in top 10 percent for graduation rates among low-income serving institutions in comparable selectivity levels): 2004—Continued

	Percent with federal grant in cohort	2004 graduation rate	Public (1) or private not-for- profit (2)
Suny College of Environmental Science and Forestry	80	65.0	1
Suny Empire State College	53	18.1	1
Suny-Potsdam	40	42.7	1
Taylor University-Ft Wayne	54	45.2	2
Troy State University-Main Campus	49	51.2	1
Troy State University-Montgomery	46	8.3	1
University of Akron Main Campus	41	35.2	1
University of Arkansas at Little Rock	67	25.6	1
University of Houston-University Park	52	38.7	1
University of Southern Maine	55	29.5	1
University of the District of Columbia	40	10.7	1

NOTE: Low-income serving institutions are defined as those with 40 percent or more federal grant aid recipients in the 1998 graduation rate cohort and at least 25 percent Pell Grant recipients in the undergraduate population in 1999 or 2003 OR at least one-third Pell Grant recipients in undergraduate population in 1999 or 2003. Highlighted institutions are those with high graduation rates (top 10 percent) in selectivity category.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2004.

Low-Income Serving Institutions With High Graduation Rates

To identify low-income serving institutions with high graduation rates, the 319 low-income serving institutions were divided into their respective selectivity classifications and the graduation rate at the 90th percentile was determined (rounded within each selectivity group). Institutions with graduation rates at or above the 90th percentile were identified. These graduation rates were 75 percent for very selective institutions, 59 percent for moderately selective institutions, and 48 percent for minimally selective institutions. Thirty-five institutions met the criterion. Among the 46 institutions with missing Pell Grant data, four institutions would have met the criteria for high graduation rates; one was public and three were private. These are highlighted in gray in table B-2.

The 1996/01 Beginning Postsecondary Students Longitudinal Study

Data from the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01) were used to determine the completion rates of all first-time freshmen who enrolled in 4-year

institutions with an intention to complete a bachelor's degree regardless of whether they transferred. The BPS:96/01 study was the second in the series of studies focusing on first-time beginning students in postsecondary education, and is composed of the students who participated in the 1995–96 National Postsecondary Student Aid Study (NPSAS:96). NPSAS:96 consisted of a nationally representative sample of students enrolled in all levels of postsecondary education during the 1995–96 academic year. Respondents were selected for inclusion in NPSAS:96 using a two-stage sampling design; the first stage involved selecting eligible institutions (derived from the 1993–94 Integrated Postsecondary Education Data System [IPEDS] Institutional Characteristics [IC] file), and the second stage was the selection of eligible respondents within each eligible institution. Approximately 9,500 institutions were identified in the IPEDS IC file. These eligible institutions were then partitioned into institutional strata based on level and control, and additional implicit stratification was done within each institution type by region and size. Sampling frames for selecting students consisted of enrollment lists or data files provided by the institutions for those students enrolled during the NPSAS:96 year, which yielded a total of 12,400 students eligible for the BPS:96 cohort. At least 40 students were sampled from each institution, where possible. The BPS sample consisted of approximately 12,400 students identified in NPSAS:96 who were beginning postsecondary education for the first time at some point in the 1995–96 academic year, and who were not concurrently enrolled in secondary education or a high school completion program.

The First Follow-up of the BPS cohort (BPS:96/98) was conducted in 1998, approximately 3 years after these students first enrolled. Approximately 10,300 of the students who first began in 1995–96 were located and interviewed in the 1998 follow-up, for an unweighted response rate of 84 percent and an overall weighted response rate of 79.8 percent. This response rate includes those who were nonrespondents in 1996; among the NPSAS:96 respondents, the response rate was 85.9 percent (Wine et al. 2000). The Second Follow-up of the BPS cohort (BPS:96/01) was conducted in 2001, 6 years after students' college entry. All respondents to the First Follow-up, as well as a subsample of nonrespondents in 1998, were eligible to be interviewed, and after excluding respondents who were deceased by 2001, 12,100 cases were eligible for BPS:96/01. Over 9,100 of these students were located and interviewed, resulting in a weighted sample representing 2.8 million students. The unweighted overall student response rate was 82 percent and the weighted response rates were 76.1 percent overall, 91.1 percent institutional response rate, and 83.6 percent student response rate (Wine et al. 2002). The BPS:96/01 interviews were conducted using computer-assisted interviewing technology to conduct both telephone (CATI) and in-person (CAPI) interviews. Data were also collected from the institutions in which the students were enrolled, the Central Processing System (CPS) database, and the National Student Loan Data System (NSLDS). The CATI and CAPI systems were programmed with range editing

and consistency edits. There were also multiple post-interview data cleaning steps that were designed to ensure internal consistency within items and maintain skip-pattern relationships. Logical imputations were performed where appropriate, with the goal of maximizing the number of respondents to which each item applied.

Bias Analysis

For IPEDS data, institutions are obligated to report the information used in this study. The response rate for all spring survey components for 4-year institutions was over 99.0 percent (Knapp et al. 2006), thus no significant bias results from IPEDS nonresponse for the items used in this study.

Nonresponse among sample cohort members causes bias in survey estimates when the outcomes of respondents and nonrespondents are shown to be different. A bias analysis was conducted on the BPS 2001 survey results to determine if any variables were significantly biased due to nonresponse (Wine et al. 2002). Considerable information was known from the 1996 and 1998 surveys for nonrespondents to the 2001 interviews, and nonresponse bias could be estimated using variables with this known information. Weight adjustments were applied to the BPS:96/01 sample to reduce any bias found due to unit nonresponse. After the weight adjustments, some variables were found to reflect zero bias, and for the remaining variables, the bias did not differ significantly from zero. All analyses in this report are weighted to compensate for unequal probability of selection into the BPS sample. The weight variable used in this report for analysis of the BPS:96/01 data is WTD00, the longitudinal weight for students who responded in 1996 and in 2001.

Item Response Bias

The variables derived for the IPEDS data are described in detail above and institutions with missing component data are listed in the appendix tables. Items were missing for less than 10 percent of institutions. The institutions most affected were potential low-income serving institutions (based on their freshman federal aid recipients) that could not be identified as low-income serving because of missing Pell Grant data. These institutions are listed in table B-2. As discussed previously, while the institutions were overwhelmingly public, their median graduation rate (38 percent) was very close to the graduation rate for all identified low-income serving institutions (39 percent).

All the BPS variables used in this report and defined in appendix A had item response rates above 85 percent. Therefore, a bias analysis for individual survey items was not necessary.

Accuracy of Estimates

Most of the statistics in this report are derived from a population. In using a census of an entire population there is not a sampling error, but there is still the possibility of nonsampling error. Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all institutions (i.e., some institutions refused to participate, or participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, and imputing missing data. To compensate for nonresponse, adjustments are often made, referred to as imputations. Imputations are usually made separately within various groups of institutions that have similar characteristics. If a particular institution responded in previous and later years, those values may also be used to substitute for a missing response.³

The BPS statistics in this report are estimates derived from a sample, thus both nonsampling and sampling errors may occur when reporting these estimates. Sampling errors occur because observations are made only on samples of students, not entire populations. Statistical procedures described below were applied when reporting differences between BPS estimates.

Data Analysis System

The estimates presented in this report were produced using the NCES Data Analysis Systems (DAS) for IPEDS and BPS. The DAS software makes it possible for users to specify and generate their own tables. With the DAS, users can replicate or expand upon the tables presented in this report; the table parameter files (tpf) that produced these tables are available to users on the NCES website. In addition to the table estimates, for estimates based on samples (in this case for BPS), the DAS calculates proper standard errors⁴ and weighted sample sizes for these estimates. For example, table B-3 contains standard errors that correspond to figure 1. If the number of valid cases is too small to produce a reliable estimate (less than 30 cases), the DAS prints the message “low-N” instead of the estimate. All standard errors for estimates presented in this report can be viewed at <http://nces.ed.gov/das/library/reports.asp>. The DAS can also produce a correlation matrix of selected variables to be used for linear regression models. Included in

³ See Knapp et al. (2006) for illustrations of imputation methodologies.

⁴ The BPS samples are not simple random samples, and therefore simple random sample techniques for estimating sampling error cannot be applied to these data. The DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by the DAS involves approximating the estimator by the linear terms of a Taylor series expansion. The procedure is typically referred to as the Taylor series method.

Table B-3. Standard errors for figure 1: Bachelor’s degree 6-year completion rates among 1995–96 beginning postsecondary students who first enrolled in a 4-year institution: 2001

	Completion rate
All first-time students	1.31
First-time, full-time degree-seeking at first institution	1.29
First-time, full-time degree-seeking anywhere	1.31

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

the output with the correlation matrix are the design effects (DEFTs) for each variable in the matrix. Since statistical procedures generally compute regression coefficients based on simple random sample assumptions, the standard errors must be adjusted with the design effects to take into account the BPS:96/01 sample design.

Because IPEDS is a census of postsecondary institutions, the IPEDS DAS functions in a different way than a DAS based on a survey sample. The IPEDS DAS produces the same types of tables and values such as percentages, averages, percentiles, and so on, but it does not calculate standard errors or weighted estimates. A component unique to the IPEDS DAS is the sum function, which allows users to sum all cases within specific categories (such as the institutional comparison groups). That is how the enrollment weighted average graduation rates and enrollment weighted gender and race/ethnicity distributions of students were produced for this report. Tables were generated with sums of students across cohorts within a given category (such as moderately selective master’s institutions), and corresponding sums of students in the same category who graduated. Graduation rates were then calculated in a spreadsheet using the sum of all students in the cohort within a cell as the denominator and the corresponding sum who graduated as the numerator. For example, the graduation rate for Hispanic students in moderately selective master’s institutions with large low-income enrollments was based on the total number of Hispanic students in these institutions and the total number of Hispanic students who graduated from these institutions. This effectively produces weighted averages, giving institutions with larger enrollments more weight than those with smaller enrollments.

The DAS can be accessed electronically at <http://nces.ed.gov/das>. For more information about data or the Data Analysis Systems, contact:

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Statistical Procedures

Differences Between Means

The descriptive comparisons from the BPS sample were tested in this report using Student's t statistic. Differences between estimates are tested against the probability of a Type I error,⁵ or significance level. The significance levels were determined by calculating the Student's t values for the differences between each pair of means or proportions and comparing these with published tables of significance levels for two-tailed hypothesis testing.

Student's t values may be computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}} \quad (1)$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. This formula is valid only for independent estimates. When estimates are not independent, a covariance term must be added to the formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2 - 2(r)se_1 se_2}} \quad (2)$$

where r is the correlation between the two estimates.⁶ This formula is used when comparing two percentages from a distribution that adds to 100. If the comparison is between the mean of a subgroup and the mean of the total group, the following formula is used:

$$t = \frac{E_{\text{sub}} - E_{\text{tot}}}{\sqrt{se_{\text{sub}}^2 + se_{\text{tot}}^2 - 2p se_{\text{sub}}^2}} \quad (3)$$

⁵ A Type I error occurs when one concludes that a difference observed in a sample reflects a true difference in the population from which the sample was drawn, when no such difference is present.

⁶ U.S. Department of Education, National Center for Education Statistics, *A Note from the Chief Statistician*, no. 2, 1993.

where p is the proportion of the total group contained in the subgroup.⁷ The estimates, standard errors, and correlations can all be obtained from the DAS.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large t statistics may appear to merit special attention. This can be misleading since the magnitude of the t statistic is related not only to the observed differences in means or percentages but also to the number of respondents in the specific categories used for comparison. Hence, a small difference compared across a large number of respondents would produce a large t statistic.

A second hazard in reporting statistical tests is the possibility that one can report a “false positive” or Type I error. In the case of a t statistic, this false positive would result when a difference measured with a particular sample showed a statistically significant difference when there is no difference in the underlying population. Statistical tests are designed to control this type of error, denoted by alpha. The alpha level of .05 selected for findings in this report indicates that a difference of a certain magnitude or larger would be produced no more than 1 time out of 20 when there was no actual difference in the quantities in the underlying population. When hypothesis tests show t values at the .05 level or smaller, the null hypothesis, indicating that there is no difference between the two quantities, is rejected.

⁷ Ibid.