University of California
EDUCATING THE NEXT GENERATION OF CALIFORNIANS
IN A RESEARCH UNIVERSITY CONTEXT:
University of California Graduate and Undergraduate Enrollment
Planning Through 2010

Appendix 3

UNDERGRADUATE ENROLLMENT DEMAND
PROJECTION METHODS

Planning and Analysis
Academic Affairs
Office of the President
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INTRODUCTION

The purpose of this technical appendix is to describe the methodologies underlying the projections of undergraduate enrollment demand in the University of California Office of the President (UCOP) report, "Educating the Next Generation of Californians in a Research University Context: University of California Graduate and Undergraduate Enrollment Planning through 2010."

In previous years we have projected a single set of enrollment numbers, based on assumptions about student enrollment behavior. For this planning effort we have taken a different approach. Using historical data and a variety of assumptions about future enrollment activity, we have estimated a range of potential demand. Within this range we can then propose the level of enrollment for which we believe it is most prudent to plan. The projections described in this Appendix provide a variety of reference points related to student participation, which are grounded in actual historical behavior. This approach makes it possible to measure the reasonableness of the enrollments we propose against specific, historical activity.

This approach also provides us with a tool that is more sensitive than previous approaches to changes in California's population. While the model we describe relies on population data organized by racial and ethnic categories, it will also eventually accommodate data organized by county and region. It is possible to examine the effects of specific assumptions made about specific groups, which should be helpful in understanding the future dynamics of demand for undergraduate enrollment at UC.

The planning target year is 2010. However, unofficial high school graduation projections were available through 2016 providing a valuable larger context. 2010 continues to be the planning reference year, but we have modeled UC enrollment demand through 2016 for reference.

This Appendix is organized into two main parts: a description of our methods for projecting undergraduate enrollment demand, and a summary of our current projections.

For comparison purposes, we also include here, as we do in the text of the enrollment planning report, projections of UC enrollment from the Demographic Research Unit of the California Department of Finance (DOF).

I. PROJECTION METHODS

A. PROJECTING FRESHMAN DEMAND

1.   *Our Standard Projection Method—A Gross Participation Rate Calculation*

In recent years, the University of California Office of the President (UCOP) has used a simple method of projecting first-time freshman enrollment. This method uses a single participation rate—i.e., a number based on an aggregated population at a single point in time—applied as a constant into the future to create a projected enrollment level. The rate used is the most recent gross participation rate, a number that is derived by dividing all new freshmen (Fall headcount) by the number of California public high school graduates from the previous June. This rate multiplied times a projection of public high school graduates in a future year produces an estimate of new freshmen for that year. We always calculate using the most recent participation rate, but we may also use the method to run projections based on the participation rate from an earlier year.

This method has two distinct advantages. First, the data are readily available, and therefore the calculation is easily replicable. The data come from the California Department of Finance (DOF) annual projections of California public high school graduates, and from their annually published numbers of UC freshmen, which are included in their projections of higher education enrollments. Second, past experience and analysis have indicated that the method does a very good job of predicting future enrollments in the near term.

We have included projections based on this method in the document "Educating the Next Generation of Californians in a Research University Context: University of California Graduate and Undergraduate Enrollment Planning through 2010." For the sake of continuity and for comparison purposes, we will continue to project total UC first-time freshmen by the gross participation rate method.

2.   *The DOF Projection Methods*

The Demographic Research Unit of the California Department of Finance (DOF) makes an annual projection of high school graduates based on a grade-progression ratio (or cohort survival) model of K-12 enrollment. DOF uses grade progression ratios derived from the most recent ten years of historical enrollment data from the Department of Education's California Basic Education Data System (CBEDS) database.

The DOF also annually projects UC enrollment for freshmen, transfers, and continuing students. The DOF projections of UC freshmen are included in the enrollment planning report.

3. *An Additional Projection Method—A Population Groups Model*

For long-range planning purposes, we would like to have additional projections of enrollment demand that are based on more detailed data. One disadvantage of the constant gross participation method is that by relying on aggregated data, it cannot reflect changes in specific or multiple population groups. In a state as dynamic as California, with differential growth patterns by region and by racial/ethnic group, it would be helpful to have more finely focused methods of estimating demand that can take into account changing population factors.

To enhance our ability to estimate future UC undergraduate enrollment demand and to develop a better understanding of the underlying demographic and participation rate trends that affect enrollment demand at the University of California, we constructed a new empirical enrollment estimation model:

A Population Groups (Race/Ethnicity) Multiple Participation Rates Model

The model uses projected California <u>public and private</u> high school graduates as the base. Specific UC participation rate coefficients, derived for each population (race/ethnicity) group of high school graduates, are applied to the base of projected high school graduates to estimate total UC first-time freshman demand for each year in the future.

There are three separate processes that comprise the Population Groups Model:

- Establish the population base, which in this case is high school graduates, both historical and projected.

- Identify the participation rate coefficients associated with each component of the base.

- Apply the coefficients to the projected population bases.

<u>Establish the population base</u>

1. *Determine the number of graduates from California public high schools.* DOF provides these data in their annual "Projections of California Public High School Graduates" series. They include the most recent 12 years of historical data, which are from the Department of Education's California Basic Education Data System (CBEDS) database. DOF projects high school

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graduates for 10 years into the future.[1] These data are provided by racial/ethnic categories.[2]

    2.   *Determine the number of graduates from California private high schools.* Historical data are available from CBEDS for the past nine years. DOF does not project the number of graduates from private high schools. So, for purposes of this model, we assumed that the proportion of public and private high school graduates would remain approximately the same in the future as it has been in the past. Historically, the number of private high school graduates in California has varied from about 22,100 to 25,700 graduates per year. The relationship between the size of annual public high school graduation cohorts and private high school graduation cohorts has remained fairly stable. This ratio has ranged from 0.094 to 0.107 over the last nine years. We calculated the trend of the ratio of private to public high school graduates for the academic years 1989 through 1996, and extended the trend for one additional year, thorough 1997. We used the resulting ratio, 0.106 (holding it steady) to project the number of private high school graduates from 1998 through 2016. Because there are no data on the ethnic makeup of private high school graduates, we assumed that their ethnic makeup mirrored that of public high school graduates.

Identify participation rate coefficients

1.   *Calculate annual participation rates for each population group.* We divided the number of new freshmen[3] from each population group[4] by the corresponding number of high school graduates from California public and private high schools from that ethnic group. For example, Filipino UC first-time freshmen are divided by the total number of Filipino California public and private high school graduates from the preceding school year. We performed this calculation for each ethnic group for each year (1989-1997). Data for UC first-time freshmen are from the UC undergraduate longitudinal enrollment database.

2.   *Calculate tendencies of participation rates.* Using each population group's annual participation rates, we then calculated participation rates over time, for various time frames. For example, we calculated the mean for the past eight years and for the most recent four years. We also calculated the trend or slope of each group's participation rates. We extrapolated what the participation rates for each

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[1] DOF's 1998 projections officially go to 2007-2008. For purposes of this paper we are extending the time frame through 2010 which is the end of our current planning period, using unofficial projections that the DOF Demographic Research Unit has prepared for our use. Additional unofficial projections through 2016 are included for purposes of context.

[2] American Indian, Asian, Black, Filipino, Hispanic, Pacific Islander, and White.

[3] The number of new freshmen includes the number of resident students from California public, private, and non-California high schools and non-resident first time freshmen, i.e. all new freshmen.

[4] American Indian, Asian and Pacific Islander, Black, Filipino, Hispanic, White, and Other.

group would be if the specific mean rate were to continue to the end of the projection, or if the trend of each group were to continue for some specified time into the future. For example, a trend in participation rate growth might be continued for two or four more years and then held constant to the end of the projection.

Apply the coefficients to the projected population bases

1. *We drew on previous experience with the enrollment demand model.* Since the number of possibilities for projecting demand from these various subgroups and their various participation rates is vast, when we first developed the enrollment demand model in 1997-98, we selected a manageable number (19) of what we considered to be plausible methods and assumptions. For example, some methods applied a constant projection calculation, others projected based on a trend; some were based on single-year participation rate and others on four- or eight-year average rates. For purposes of this paper, the details are unnecessary. However, the results are presented in Figure 1, to illustrate two points: (1) the combination of methods and assumptions we used produce a variety of estimates of possible future freshman enrollment demand; (2) the farther out into the future our projections go, the wider the range of our estimates.

Figure 1
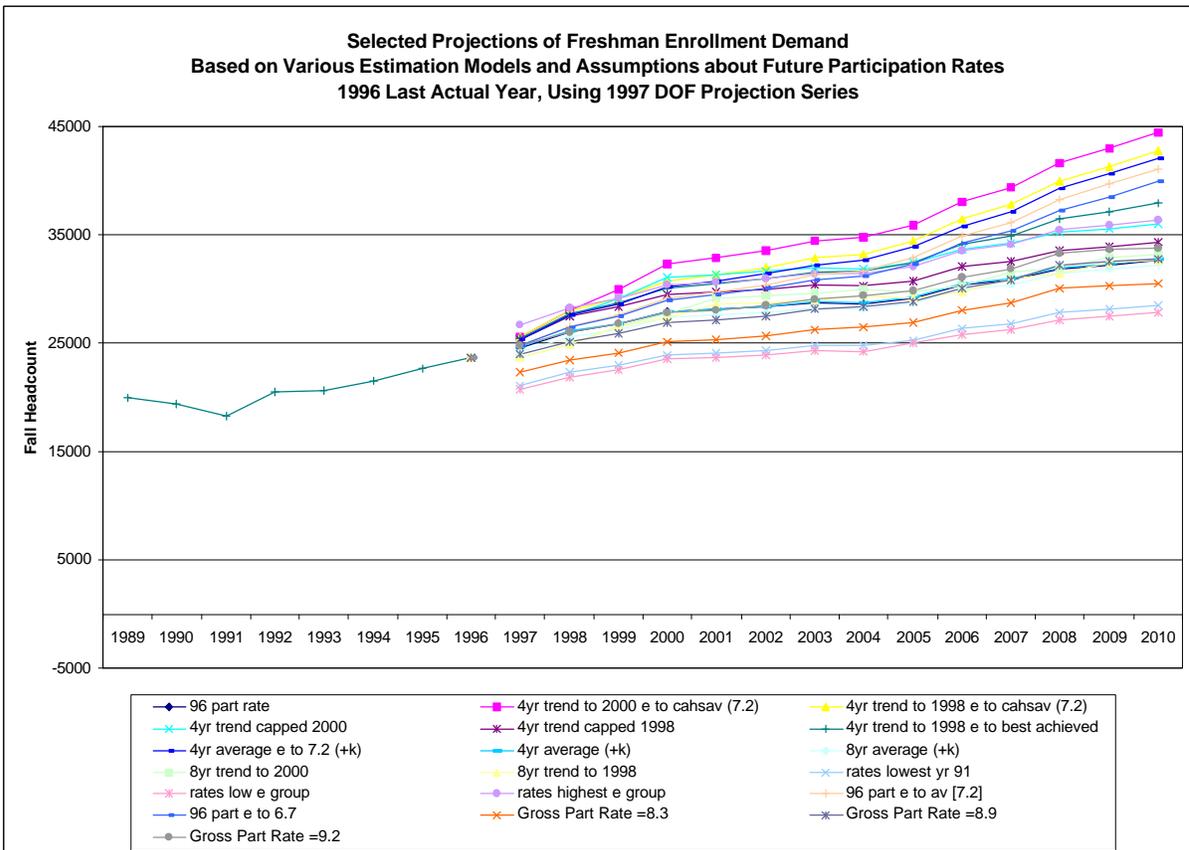
To produce each demand estimate, we applied the appropriate coefficient (or coefficients) to the projected high school graduates from each group. For each year we summed across groups to arrive at a total of projected first-time freshman demand for each year based on the particular method selected.[5] From these 19 projections, we selected four specific approaches that established both the outer bounds of demand, and a narrower, more plausible planning range. (See page 7 for the assumptions underlying these projections.)

2.   For the 1998-99 projections we updated the four approaches using the most recent DOF (1998 Series) projections of high school graduates. (See page 7 for discussion of these calculations.)

The Population Groups Model: Data and Sources

Data used in our enrollment estimation model were from the following sources:

- Actual California high school graduates (public, private, and total, by race/ethnicity) are from the Department of Education CBEDS database;

- Projected *public* high school graduates are from the Department of Finance (DOF) Demographic Research Unit, "Projections of California Public High School Graduates–1998 Series"; [6]

- Projected *private* high school graduates are calculated by UCOP Planning and Analysis (using the DOF projection of public high school graduates and the historical relationship of public and private high school graduates from the CBEDS database);

- Specific UC participation rate coefficients, for public and private high school graduates separately, are calculated by UCOP Planning and Analysis (using actual UC enrollment data from the UC corporate longitudinal enrollment database) and actual high school graduates from CBEDS data.

Steps Involved in Modeling Freshman Enrollment Demand in 1998-99

Here are the specific steps we used to estimate UC first-time freshman enrollment demand using the population groups model:

1.   Using actual UC enrollment data and the actual number of California public and private high school graduates from 1989 to 1997, we calculated participation rate coefficients (from high school to UC), specific to each population group for each year

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[5] Details about the 19 methods are available in the document "Modeling Undergraduate Enrollment Demand, Appendix 3, March 1998, Planning and Analysis, University of California, Office of the President.

[6] DOF uses CBEDS data on actual public high school graduates as the base for estimating high school to UC participation rates. Thus, for historical years the CBEDS data and DOF historical trend data are one and the same.

1989-1997. We also calculated a rate for all Fall first time freshmen for each year, divided by the number of public high school graduates (often referred to as the gross participation rate).

2. Next, from the 19 methods we explored previously, we chose four methods to update for 1998-99. Three projection methods were based on historical experience, and one, Method 4, was based on a policy goal:

- **Method 1** assumed that by no later than the year 2010-11 every group would be participating at its **lowest rate** observed during the 1989-1997 period.

- **Method 2** assumed that in the year 1998 and for every year thereafter through 2010-11 the total participation rate for all first-time freshmen would be 8.3 percent of public high school graduates, which is the **lowest gross participation** rate for the 1989-1997 period.

- **Method 3** assumed that by no later than the year 2010-11 every group would be participating at its **highest rate** observed during the 1989-1997 period.

- **Method 4** reflects the policy goal of improving population group access to the University to at least that the average recent rate of public high school graduates participation rate for all population groups. This method assumes that by no later than the year 2010-11 every group would be participating **either at its 1997 rate or at 7.2 percent**, whichever is higher. The 7.2 percent participation rate represents the average of the Fall 1996 California resident public high school participation rate (7.3 percent) and the Fall 1997 rate (7.1 percent).

3. Then we applied the projected rates in each series to the projected numbers of high school graduates (public and private) to obtain projections of first-time freshman demand.

   First-time freshman enrollment projections from the population groups model reflect the relative size of the population groups and projected changes in the proportion of different population groups over time. The projections also reflect the distinct participation rates for the different groups.

B.   PROJECTING NEW TRANSFER STUDENTS

Like our estimates of first-time freshmen, our estimates of transfer students are also empirically grounded—they are based on actual historical enrollments. Unlike our freshman projections, however, which are primarily population and demand driven, our estimates of future transfer students are defined by policy goals rather than by any

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explicit assumptions about California Community College-to-UC transfer rates or transfer demand.

We derived our projections of transfer students using as a framework the new transfer goals stipulated in the Memorandum of Understanding (MOU) recently adopted by the University of California and the California Community Colleges. The UC-California Community College MOU specifies that transfers to UC from the community colleges will increase from 10,600 students in 1997 to 14,500 students annually by 2005-06.

Our projection of new transfer students assumes total new transfers will grow from 1997-98 through 2005-06 at a rate sufficient to reach 14,500 community college transfers by 2005-06. We also assumed that the number of community college transfers would continue to grow (during the period 2006-07 to 2011-12) by the same annual increment as in the prior projected years and then remain constant from 2012-2013 through 2016-2017.

Our projection of transfer students also includes a small component (approximately 1,500 students per year) of transfers from other institutions, CSU among them. The number of transfers per year from other institutions is assumed to be constant over the projection period. For our lowest total enrollment projection, we did not include these 1500 non-California Community College transfers.

As of this writing, we have not attempted to reconcile the effect of the MOU on the 60:40 ratio with these enrollment demand projections. The Master Plan expects UC to maintain a 60:40 ratio of upper-division to lower-division students in order to guarantee sufficient access to community college transfers. The ratio will vary given different estimates of new freshman enrollment. We assume that the campuses will continue to determine the appropriate mix of new freshmen, transfers and continuing students to maintain a 60:40 ratio.

C.   PROJECTING CONTINUING STUDENTS

To determine how many continuing students to plan for in future years, we calculated continuation rates (year-to-year retention and graduation rates) for first-time freshmen and for transfers separately.

Continuation rate coefficients for freshmen and transfers were calculated using actual enrollment data from our longitudinal enrollment database (Fall 1989 – Fall 1996). We took the difference between DOF's and UC's freshman projections for each year through 2010. We applied the UC continuation rate coefficients to these differences for each year, thereby generating a number of continuing students for each year. We added these additional numbers of continuing students for each year to the number already projected by DOF. We repeated this process for transfer students, and then added the two sets of continuing students together. These adjusted DOF projections became the UC projections of continuing students.

D. PROJECTING TOTAL UNDERGRADUATE ENROLLMENT

Total UC general campus undergraduate enrollment consists of freshmen, transfer students, and continuing students. To arrive at projections of total UC undergraduate enrollment demand, we incorporated the following:

- Projected first-time freshmen (based on various assumptions about participation rates);
- Projected transfer students (using the new UC-California Community College transfer goals);
- Projected continuing students (using the projected first-time freshmen and projected transfer students lagged and diminished by attrition and graduation over time).

We summed the various estimates of new freshmen, transfers, and continuing students by year. The resulting totals over time, converted to year-average headcount, form our projection of the range of UC general campus total undergraduate enrollment demand, thus forming an empirically derived framework in which to plan.[7]

E. PROJECTING NON-RESIDENT ENROLLMENT

Our enrollment projections include new UC first time freshmen from all California public and private high schools as well as non-resident students and resident students who graduated from other than California high schools.

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[7] Total undergraduate enrollment demand is reported here as year-average headcount, although the components, (freshmen, transfers, and continuing students) are computed in Fall headcount. Projected Fall headcount was converted to year-average headcount using the current .97 conversion ratio (1997).

II.   SUMMARY OF PROJECTIONS

A. DOF PROJECTIONS

1.   *Projected High School Graduates (DOF–1998 Series)*

Figure 2

California Public High School Graduates
Actual (1989-90 to 1996-97) and Projected (1997-98 to 2016-17)
DOF 1998 Series

Note: Projections after 2008 are unofficial.
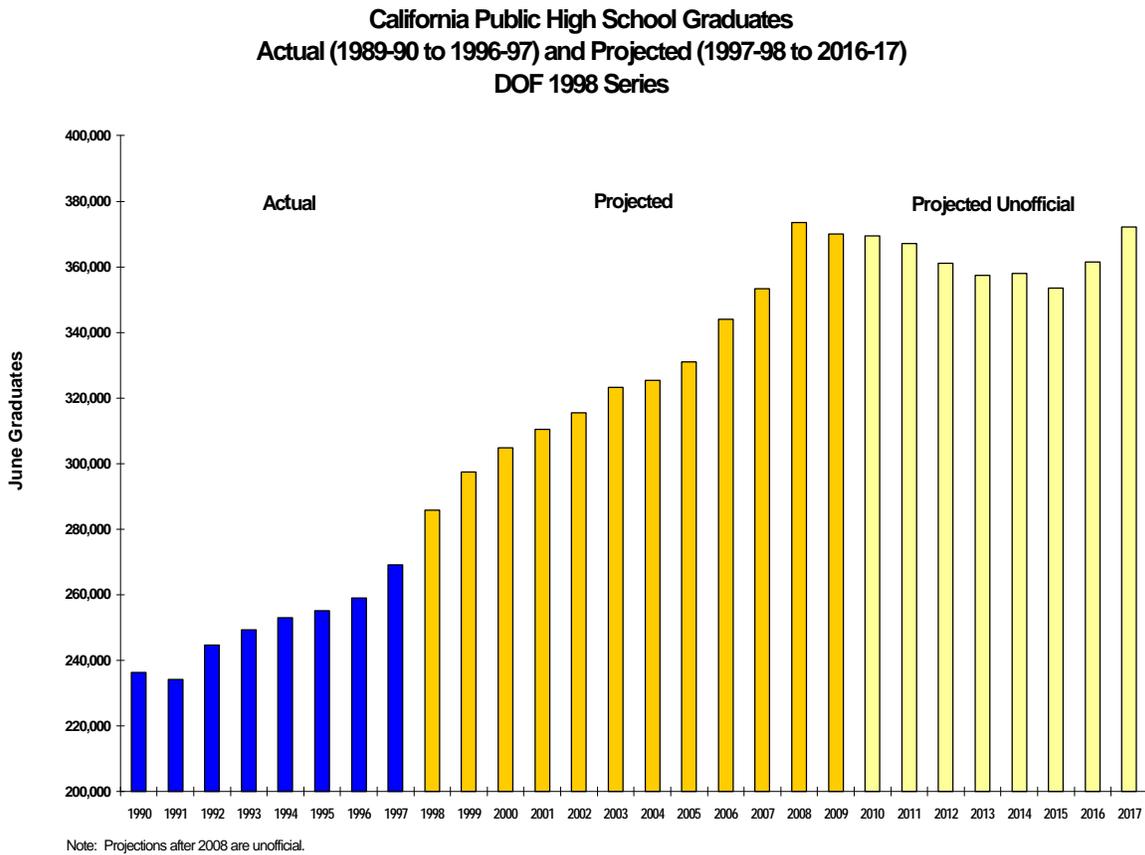
Figure 3

Comparison of Projections of Growth of High School Graduates			
	From DOF 1998 series:		
1997-98* to 2004-05		**1997-98 to 2009-10 (UC planning target year)****	
increase	45,118	increase	83,607
percent increase	15.8%	percent increase	29.2%
annual rate	2.1%	annual rate	2.2%
1997-98 to 2007-08 (peak year)		**1997-98 to 2014-15 (low year after peak)**	
increase	87,686	increase	67,784
percent increase	30.7%	percent increase	23.7%
annual rate	2.7%	annual rate	1.3%

*1997-98 is estimated, not actual. ** Projections of UC Freshmen in 2010-11 (the last year of the planning
period) are based on the number of high school graduates in 2009-10.

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DOF projects that the demographic profile (race/ethnicity) of future cohorts of high school graduates also will change significantly in the coming years:

Figure 4

K-12 Public High School Graduates by Ethnicity
History and Projection - DOF 1998 Series

	SCHOOL YEAR	TOTAL	AMERICAN INDIAN	ASIAN	BLACK	FILIPINO	HISPANIC	PACIFIC ISLANDER	WHITE
Actual	1984-85	225,448	1,833	16,693	19,013	4,483	41,958	1,205	140,263
	1985-86	229,026	1,658	17,882	18,387	4,976	43,556	1,153	141,414
	1986-87	237,414	1,729	19,543	18,809	5,199	45,872	1,097	145,165
	1987-88	249,518	1,872	21,622	19,247	6,882	48,312	1,207	150,376
	1988-89	244,629	1,929	22,352	18,568	6,344	51,809	1,336	142,291
	1989-90	236,291	1,886	24,801	17,460	6,739	55,152	1,326	128,927
	1990-91	234,164	1,997	24,850	17,119	6,782	59,240	1,309	122,867
	1991-92	244,594	2,112	26,342	17,656	7,167	66,199	1,412	123,706
	1992-93	249,320	2,138	27,897	18,219	7,339	71,466	1,408	120,853
	1993-94	253,083	2,119	29,119	18,979	7,810	75,026	1,450	118,580
	1994-95	255,200	2,262	27,168	18,864	8,496	76,557	1,365	120,488
	1995-96	259,071	2,290	27,394	19,436	8,395	78,619	1,645	121,292
	1996-97	269,071	2,364	28,832	20,742	9,034	82,015	1,588	124,496
Projected	1997-98	285,847	2,524	31,246	21,558	9,420	89,416	1,760	129,923
	1998-99	297,533	2,591	32,676	22,334	9,887	94,558	1,821	133,666
	1999-00	304,718	2,670	34,114	22,437	9,850	97,284	1,910	136,452
	2000-01	310,413	2,679	34,222	22,798	10,380	100,299	2,112	137,924
	2001-02	315,544	2,846	34,354	23,358	10,371	104,214	2,185	138,216
	2002-03	323,204	2,818	33,933	24,197	10,763	108,228	2,387	140,879
	2003-04	325,444	2,899	32,874	25,202	10,803	112,229	2,437	138,999
	2004-05	330,965	2,950	33,861	26,365	11,178	116,977	2,578	137,056
	2005-06	343,953	2,971	35,932	27,481	11,563	124,250	2,680	139,076
	2006-07	353,448	3,188	35,958	29,037	11,649	130,577	2,812	140,228
	2007-08	373,533	3,297	36,652	29,783	12,293	144,956	2,954	143,598
Unofficial	*2008-09*	*370,083*	*3,149*	*36,791*	*29,231*	*11,939*	*149,640*	*2,958*	*136,376*
Projected	*2009-10*	*369,454*	*3,235*	*37,944*	*27,992*	*12,085*	*154,545*	*3,038*	*130,616*
	2010-11	*367,179*	*3,368*	*38,174*	*27,204*	*12,101*	*158,185*	*3,004*	*125,142*
	2011-12	*361,060*	*3,325*	*38,919*	*25,708*	*12,295*	*158,373*	*3,018*	*119,423*
	2012-13	*357,358*	*3,413*	*39,260*	*24,372*	*12,361*	*159,826*	*2,996*	*115,130*
	2013-14	*357,979*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
	2014-15	*353,631*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
	2015-16	*361,502*	*na*	*na*	*na*	*na*	*na*	*na*	*na*

Note: Values have been independently rounded; sums may not add to total.
Source: Actual high school graduates through 1996-97, Department of Education, CA Basic Education Data system. Projected graduates, Department of Finance, Demographic Research Unit. "DOF California Public K-12 Enrollment Projections By Ethnicity -- 1998 Series." Projections after 2007-08 are unofficial.

Figure 5

Comparison of Projections of High School Graduates by Ethnicity, 1997-98 to 2009-10							
	TOTAL	AMERICAN INDIAN	ASIAN	BLACK	FILIPINO	HISPANIC	PACIFIC ISLANDER	WHITE
increase	83,607	711	6,698	6,434	2,665	65,129	1,278	693
percent change	29.25%	28.17%	21.44%	29.85%	28.29%	72.84%	72.61%	0.53%
annual rate	2.16%	2.09%	1.63%	2.20%	2.10%	4.67%	4.65%	0.04%

Figure 6

Percent of California Public High School Graduates
by Major Population Group (Race/Ethnicity)
Actual (1997-98) and Projected (2009-10)
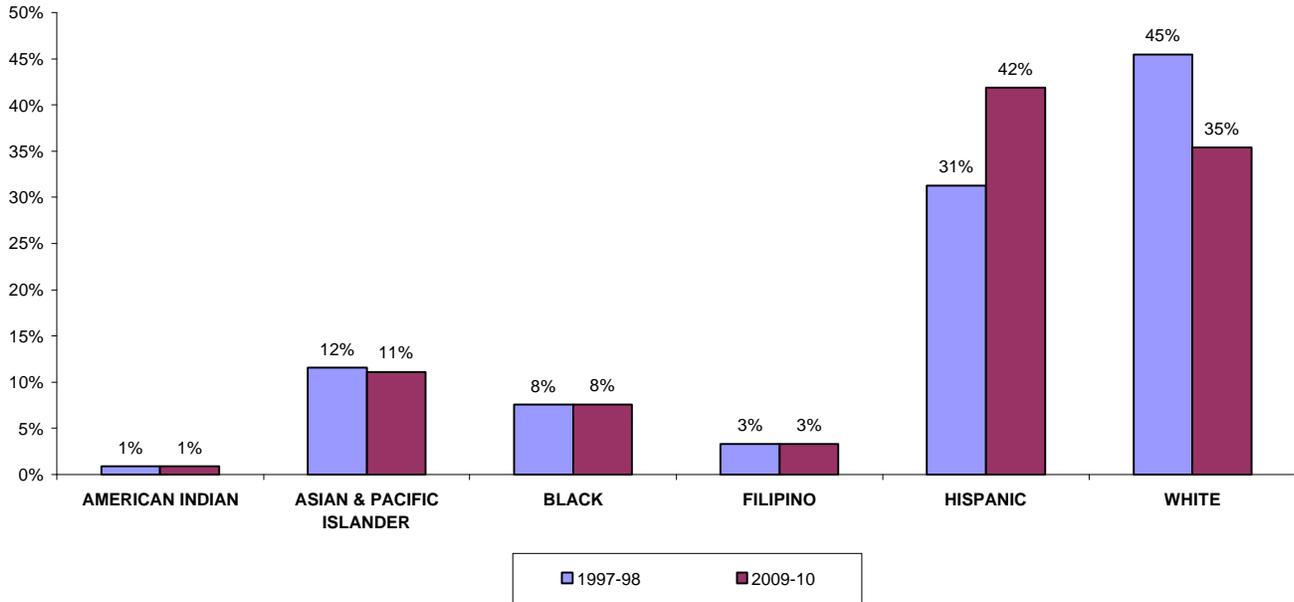
2. *Projected UC Freshmen (DOF–1998 Series)*

The latest DOF projections (DOF-1998 Series), shown in Figure 7, anticipate a significant increase in UC freshman enrollment over the next 12 years which are described in the Figure 7.

Figure 7

DOF Projection of UC First-Time Freshmen
Actual (Fall 1989 to Fall 1997) and Projected (Fall 1998 to Fall 2016)
DOF 1998 Series

Note: Unofficial estimate after 2008.
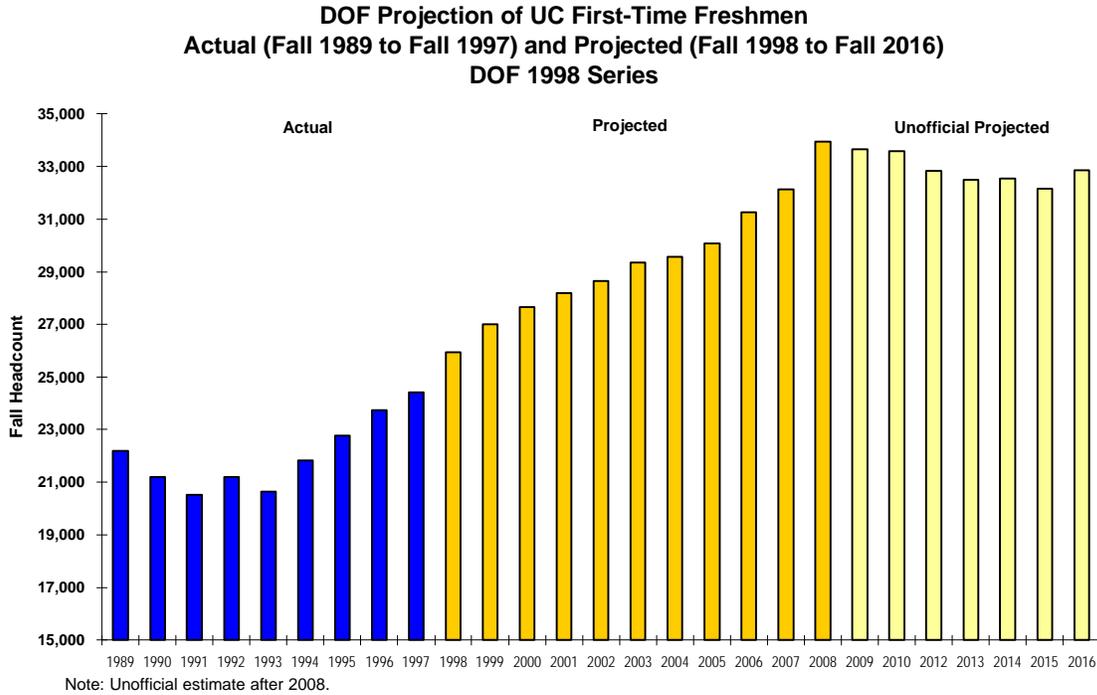
B. UCOP 1998-99 PROJECTIONS

1.   *Projected First-Time Freshmen*

Using Our Traditional Method: Projected UC Freshman Enrollment Using A Gross Participation Rate

The UC gross participation rate has varied considerably over time.[8] Participation rates were substantially lower in the 1960s and 1970s than they are today. The proportion of high school graduates enrolling at UC reached its lowest point in 1969, rose to its highest point in 1986, and experienced a moderate decline until 1993. The rate in 1993 was 8.3 percent; that rate increased in 1994 to 8.75 percent, in 1995 to 8.9 percent and in 1996 to 9.2 percent. There was a slight drop in 1997 to 9.1 percent.

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[8] The gross participation rate is calculated by dividing all new freshmen (Fall headcount) by the number of California public high school graduates from the previous June.

Applying the latest UC freshman gross participation rate, 9.1 percent in 1997, to the current DOF projection of California *public* high school graduates, 369,454 in 2009-10 (DOF-1998 Series), results in an estimated 33,525 UC first-time freshmen in Fall 2010. This calculation is noted here for reference. It was not used in the planning document; however, it compares with an estimated 33,587 UC first-time freshmen in Fall 2010 projected by the Department of Finance (DOF–1998 Series).

Figure 8

**Ratios of New UC Freshmen to
California Public High School Graduates**
All Freshmen and Freshmen from California Public High Schools

Sources: Total UC Freshmen from Fall Headcount Enrollments, New Freshmen, UC Corporate System files (1975-1982);
             UC Freshmen from California Public High Schools from UC Longitudinal Enrollment database (1989-1997);
             CA Public High School Graduates from DOF enrollment series, 1983-1998.
             (*Includes 150-300 non-CA residents who graduated from CA public high schools).
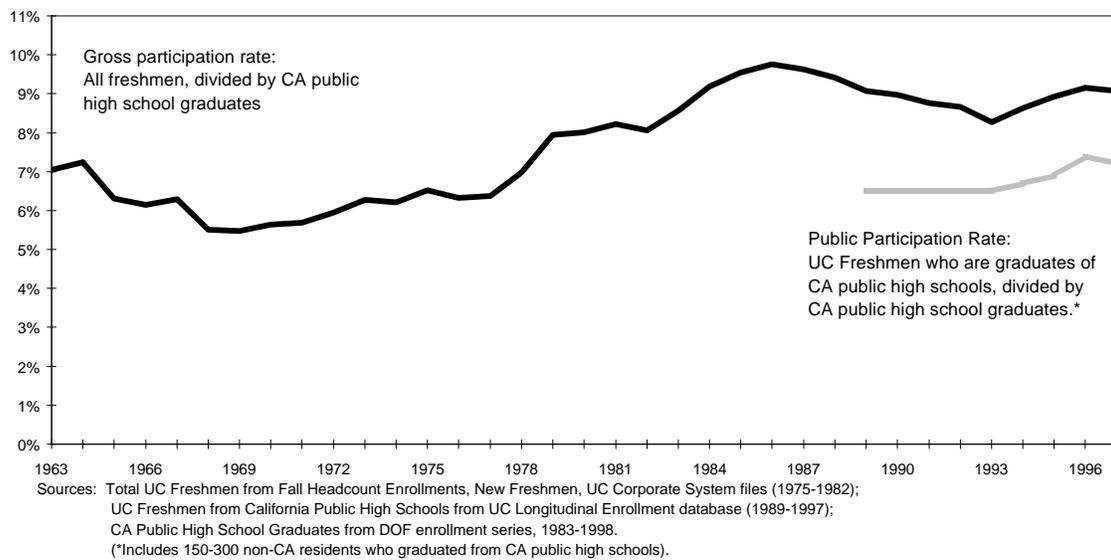
Using Our Population Groups Model:

1998-99 Projections

We selected four approaches from the 19 scenarios studied in 1997-98. Two provide a maximum and minimum range—the outer boundaries of possible demand. These are shown in Figure 9. The other two set narrower boundaries shown in Figure 10.

1998-99 Projections – A Minimum and Maximum Planning Range

These two methods (shown in Figure 9) define an outer range of enrollment demand. The maximum represents achievement of a policy goal of improving population group access to the University to at least the average recent rate of public high school graduate

participation for all population groups. The minimum is based on the lowest recently observed participation rate for each population group occurring simultaneously.

By way of comparison, the minimum (Method 1) and maximum (Method 4) projections of freshman demand in 2010 are equivalent in magnitude to a single gross participation rate of 7.6 percent and 11.1 percent, respectively.[9] The mid-point of that range in 2010 is approximately 33,200 freshmen (Fall headcount), comparable to a gross participation rate of about 9.0-9.1 percent.

Figure 9

Range of Minimum and Maximum Estimated New Freshman Demand 1998-2016

Note: Projections after 2008 are based on unofficial DOF projections of California public high school graduates.
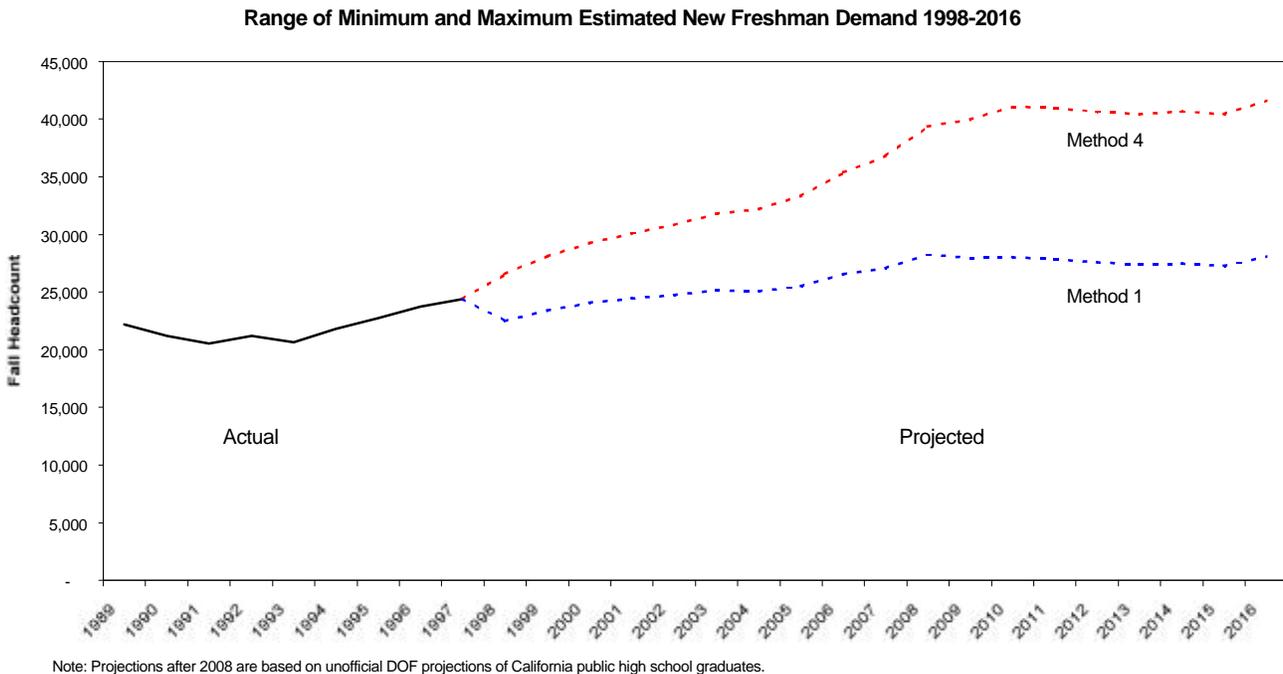
1998-99 Projections – A Reasonable Planning Range

Within this broad range of estimates of freshman demand, we identified a narrower, more focused range (shown in Figure 10). The planning range we selected corresponds to a set of assumptions about future UC participation rates based on participation rates which actually occurred sometime during the past eight years rather than on the hypothetical scenarios underlying the calculations of the minimum and maximum range.

The top of our reasonable planning range is defined by the assumption that each population group will move to a participation rate equal to its highest rate over the past 9 years by 2010 (Method 3). The bottom of our planning range (Method 2) is defined by the assumption that future participation rates will be equivalent to a gross participation

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[9] Recall that the current gross participation rate (Fall 1997, estimated) is 9.1 percent – the gross participation rate having increased in three of the last four years from a recent low of 8.3 percent in 1993.

rate of 8.3% (the actual gross rate in 1993, which is the lowest gross rate for the 1989-97 period).

Thus, the reasonable planning range encompasses the majority of enrollment projections we feel have a stronger likelihood of occurring because the range of assumed future participation rates for each population group actually occurred in the recent past. Our projections of first-time freshman demand within our planning range vary between a low of 30,665 and a high of 37,056 freshmen (Fall headcount) by 2010.

Figure 10

Minimum, Maximum and Reasonable Planning Range of Estimated New Freshman Demand, 1998-2016
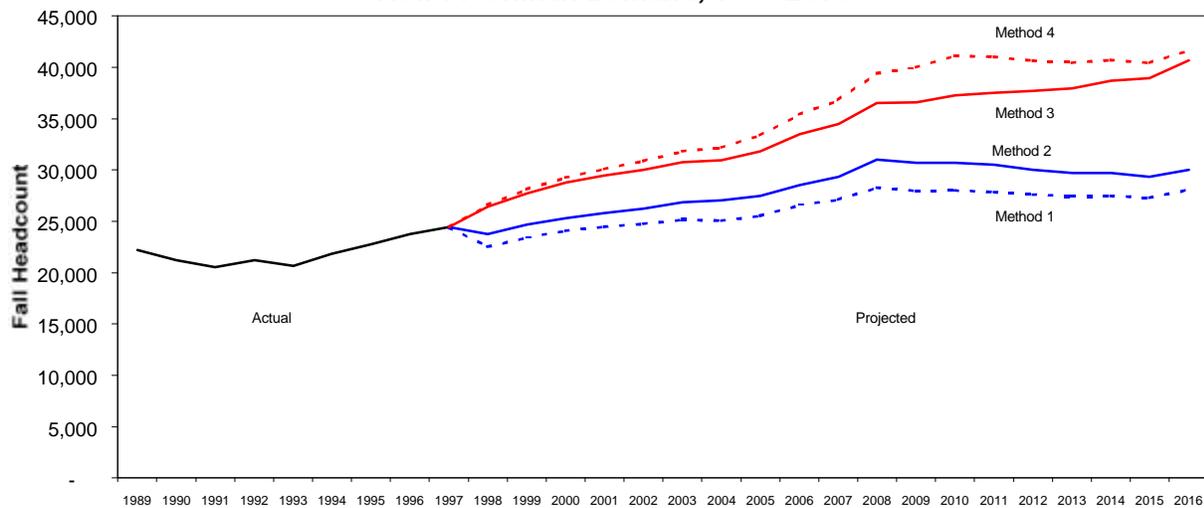
Note: Projections after 2008 are based on unofficial DOF projections of California public high school graduates.

Figure 11

Maximum, Minimum, and Reasonable Range of Estimated New Freshman
Demand with DOF Projection 1998-2016

Note: Projections past 2008 are based on unofficial DOF projections of California public high school graduates.
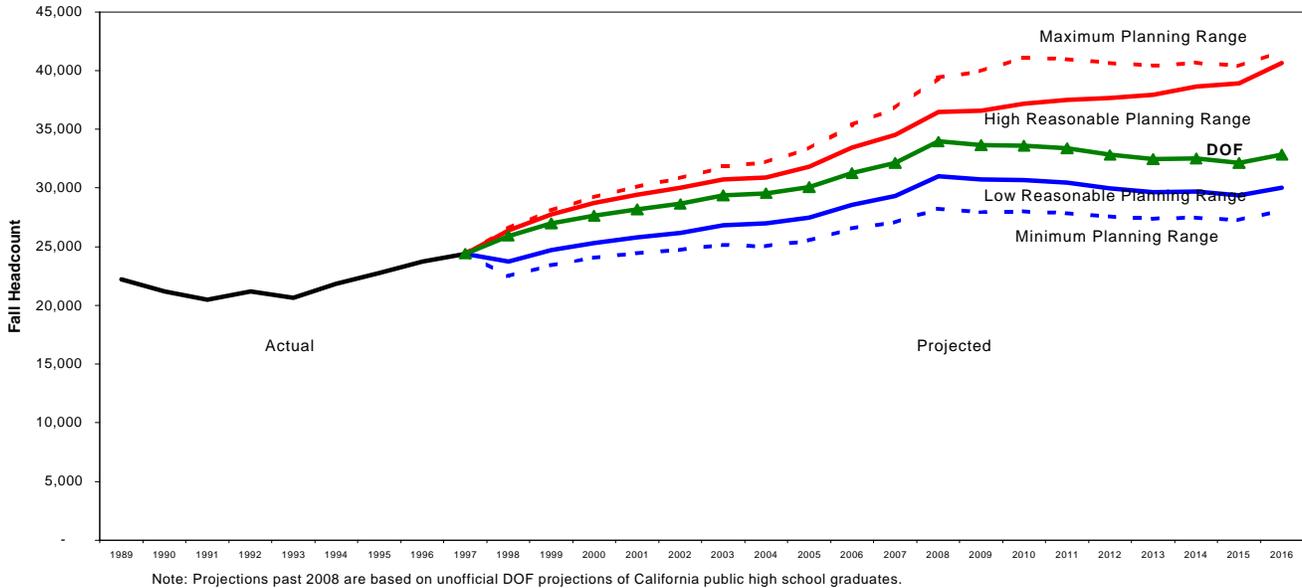
2.   *Projected Transfer Students*

Our current projections of transfer students assume that by 2010 the total number of transfer students—the vast majority of which will continue to be California Community College transfers—will reach about 15,800 students (Fall headcount).

Our projected range for new transfer students is between 14,300 and 15,800 transfer students. This projected range of transfer students in 2010 corresponds to 13,900-15,300 year-average headcount.

3.   *Projected Continuing Students*

Within the range of new freshmen and transfers associated with our reasonable planning range, continuing student enrollment was calculated to be approximately between 125,650 and 142,170 students (Fall headcount); or between 121,900 and 137,900 year-average headcount.

4.   *Projected Total Undergraduate Enrollment*

For 2010, we project total undergraduate enrollment demand in the reasonable planning range will be between 167,000 and 189,000 students (year-average headcount) as shown in Figure 12.[10]

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[10] Our estimates of first-time freshmen begin with Fall headcount. Subsequently, when we incorporate projected freshmen in projections of total undergraduate enrollment, we first convert Fall headcount into

Figure 12
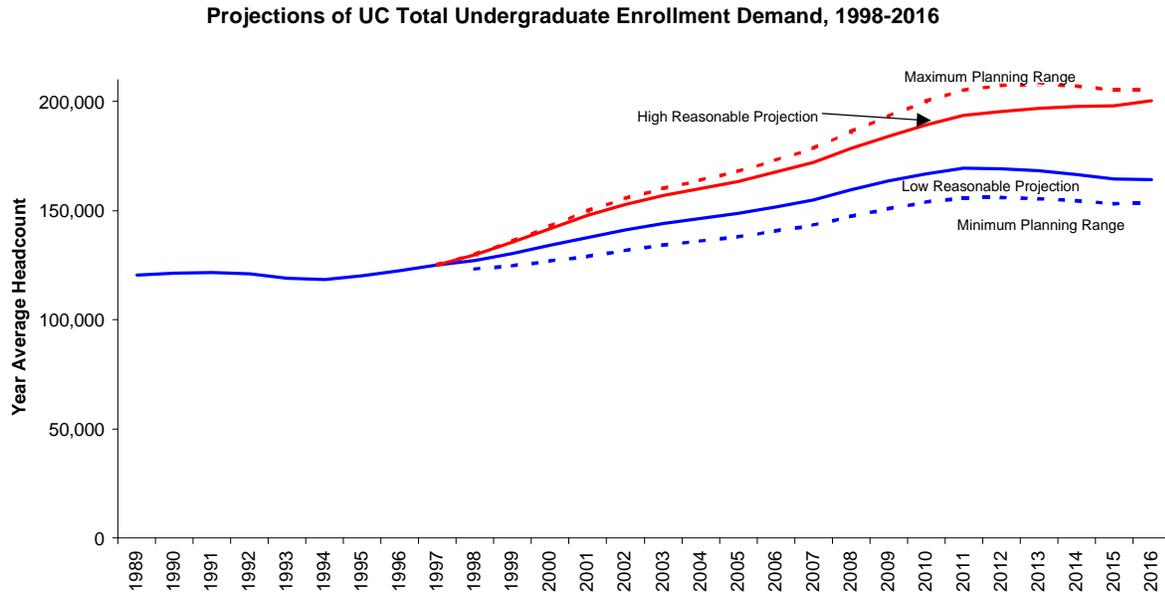
Projections of UC Total Undergraduate Enrollment Demand, 1998-2016

Note: Projections past 2008 are based on unoffical DOF projections of California public high school graduates.

The midpoint of our planning range in Fall of 2010 would place UC total undergraduate enrollment at approximately 178,000 students (year-average headcount). By comparison, DOF projects that UC undergraduate enrollment will be approximately 180,700 students (year-average headcount).

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year-average headcount using the actual ratio of Fall headcount divided by year-average headcount (currently at .97). Thus, year-average headcount equals .97 times Fall headcount.

Figure 13

			UCOP	UCOP
			Low	High
		DOF	Reasonable	Reasonable
	Fall	Projection	Range	Range

<table>
<tr><td colspan="5">Actual and Projected
UC Undergraduate Enrollment
Total (Year-Average Headcount)</td></tr>
<tr><td></td><td></td><td></td><td>UCOP
Low</td><td>UCOP
High</td></tr>
<tr><td></td><td></td><td>DOF</td><td>Reasonable</td><td>Reasonable</td></tr>
<tr><td></td><td>Fall</td><td>Projection</td><td>Range</td><td>Range</td></tr>
<tr><td>Actual</td><td>1986</td><td>108,746</td><td>108,746</td><td>108,746</td></tr>
<tr><td></td><td>1987</td><td>113,316</td><td>113,316</td><td>113,316</td></tr>
<tr><td></td><td>1988</td><td>118,087</td><td>118,087</td><td>118,087</td></tr>
<tr><td></td><td>1989</td><td>120,386</td><td>120,386</td><td>120,386</td></tr>
<tr><td></td><td>1990</td><td>121,293</td><td>121,293</td><td>121,293</td></tr>
<tr><td></td><td>1991</td><td>121,654</td><td>121,654</td><td>121,654</td></tr>
<tr><td></td><td>1992</td><td>121,045</td><td>121,045</td><td>121,045</td></tr>
<tr><td></td><td>1993</td><td>118,977</td><td>118,977</td><td>118,977</td></tr>
<tr><td></td><td>1994</td><td>118,282</td><td>118,282</td><td>118,282</td></tr>
<tr><td></td><td>1995</td><td>120,230</td><td>120,230</td><td>120,230</td></tr>
<tr><td></td><td>1996</td><td>122,472</td><td>122,472</td><td>122,472</td></tr>
<tr><td></td><td>1997</td><td>125,107</td><td>125,121</td><td>125,121</td></tr>
<tr><td>Projected</td><td>1998</td><td>128,754</td><td>127,250</td><td>129,739</td></tr>
<tr><td></td><td>1999</td><td>133,420</td><td>130,361</td><td>135,465</td></tr>
<tr><td></td><td>2000</td><td>138,683</td><td>134,053</td><td>141,698</td></tr>
<tr><td></td><td>2001</td><td>144,001</td><td>137,708</td><td>147,780</td></tr>
<tr><td></td><td>2002</td><td>148,381</td><td>141,034</td><td>152,698</td></tr>
<tr><td></td><td>2003</td><td>152,264</td><td>144,036</td><td>156,833</td></tr>
<tr><td></td><td>2004</td><td>155,604</td><td>146,475</td><td>160,076</td></tr>
<tr><td></td><td>2005</td><td>158,792</td><td>148,815</td><td>163,397</td></tr>
<tr><td></td><td>2006</td><td>162,575</td><td>151,732</td><td>167,670</td></tr>
<tr><td></td><td>2007</td><td>166,597</td><td>154,817</td><td>172,130</td></tr>
<tr><td></td><td>2008</td><td>172,127</td><td>159,550</td><td>178,376</td></tr>
<tr><td></td><td>2009</td><td>176,817</td><td>163,586</td><td>184,030</td></tr>
<tr><td></td><td>2010</td><td>180,727</td><td>166,938</td><td>189,162</td></tr>
<tr><td>Years</td><td>2011</td><td>183,626</td><td>169,408</td><td>193,431</td></tr>
<tr><td>After</td><td>2012</td><td>184,243</td><td>169,259</td><td>195,420</td></tr>
<tr><td>Planning</td><td>2013</td><td>184,123</td><td>168,161</td><td>196,661</td></tr>
<tr><td>Period</td><td>2014</td><td>183,739</td><td>166,662</td><td>197,641</td></tr>
<tr><td></td><td>2015</td><td>182,553</td><td>164,427</td><td>197,957</td></tr>
<tr><td></td><td>2016</td><td>182,947</td><td>164,111</td><td>200,308</td></tr>
</table>

Projections are based on DOF California public high school projections that are unofficial after 2008.

Figure 14

Comparison of Projections of Undergraduate Demand Growth		
UC's High *Reasonable Estimate*	*DOF's Projection*	*UC's Low* *Reasonable Estimate*
1998-99 to 2005-06	1998-99 to 2005-06	1998-99 to 2005-06
increase 33,658	increase 30,038	increase 21,565
% increase 25.9%	% increase 23.3%	% increase 16.9%
annual rate 3.4%	annual rate 3.0%	annual rate 2.3%
UC Planning Target Year		
1998-99 to 2010-11	1998-99 to 2010-11	1998-99 to 2010-11
increase 59,423	increase 51,973	increase 39,688
% increase 45.8%	% increase 40.4%	% increase 31.2%
annual rate 3.2%	annual rate 2.9%	annual rate 2.3%
UC Peak Enrollment Year		
1998-99 to 2012-13	1998-99 to 2012-13	1998-99 to 2012-13
increase 65,681	increase 55,489	increase 42,009
% increase 50.6%	% increase 43.1%	% increase 33.0%
annual rate 2.4%	annual rate 2.1%	annual rate 1.7%

Based on Year-Average Headcount. 1998-99 is the most recent Regents Budget.

Projections are based on DOF California public high school projections that are unofficial after 2008.

CONCLUDING REMARKS

Based on our estimates of undergraduate enrollment demand and our interpretation of other emerging UC application and admissions trends, we expect undergraduate demand for the University of California to continue to remain strong and to grow significantly through 2010-11.

Our current projections, reinforced by the latest DOF projection, point to a steady increase in UC undergraduate enrollment demand over the next 12 years.

We also project, based on current unofficial estimates of high school graduates, that enrollment demand will level off after 2012 and remain approximately at that year's level or slightly below it through 2016. There is considerable uncertainty in the projections past 2010, so care should be taken in making decisions based on the last five years of these projections.