

Retirement Demand and the Market for Accounting Doctorates

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ABSTRACT: The continued quality of accounting education presumably depends on the availability of qualified accounting faculty. To assess the future availability of doctorally-qualified accounting faculty, this study examines the effect of potential retirement demand and estimated growth demand on the long-term market situation. Using a new database developed by Hasselback [1990a], retirement demand is estimated more directly and accurately than previously possible. In addition, growth demand is projected under three possible market conditions. The results of this study suggest that, unless significant changes occur in the market for accounting doctorates, there exists the potential for a serious cumulative shortage of doctorally-qualified accounting faculty.

THE American Accounting Association (AAA) monitors the short-term supply of and demand for accounting faculty by performing annual surveys of academic institutions. These surveys provide information regarding the current supply of accounting doctoral candidates and the projected demand for new accounting faculty on an annual basis. The most recent survey [AAA, 1990] indicates that there were approximately 1.43 available faculty positions for each doctoral candidate in 1989-90 and estimates that there will be 1.40 positions per candidate in 1990-91. This information is consistent with the supply shortage condition that has existed for the last several years.

Although this monitoring process by the AAA is helpful in describing the short-term market for accounting faculty, it does not address the long-term market situation. The objective of the present study is to assess the longer-term demand for accounting faculty with

particular attention to the effect of impending retirements. Although retirements of faculty holding accounting doctorates have been relatively insignificant in the past, they will be very significant in the mid-1990s. Hasselback's database [1990a] shows that during the 27-year period from 1962 to 1989, a total of approximately 197 faculty with accounting doctorates retired. According to our projections, by the late 1990s, approximately this same number will retire every four years and, starting in

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the next decade, approximately this same number will retire every two years. Retirements of tenure-track accounting faculty without accounting doctorates will also be significant. Other factors affecting total demand for accounting faculty, such as transfers into and out of academe and faculty deaths, are likely to change to a much lesser extent. Our analysis suggests that a severe shortage of faculty with accounting doctorates will develop unless supply is increased dramatically.

PREVIOUS RESEARCH ON MARKET FOR ACCOUNTING DOCTORATES

Two major studies have addressed the long-term supply of and demand for accounting faculty. The first study was a combined report of the 1971-72 and 1972-73 Committees on Future Professorial Supply and Demand [AAA, 1974]. The report presented a model for forecasting faculty supply and demand for the period 1972 through 1985 and projected a steadily decreasing demand for and increasing supply of faculty, resulting in a projected oversupply beginning in 1976. Thus, the report recommended that doctoral candidates be aware of this projected oversupply in planning for their future [AAA, 1974, p. 5].

Despite the oversupply predicted by the 1974 report, there were signs by 1975 that the historical faculty shortage would continue for some time. Using this historical perspective and data from a survey sent to the chairpersons at accounting doctoral degree-granting universities, Hermanson and Miles [1976] sought to discover where the AAA committee report had erred in its projections. They examined each of the variables in the report's supply and demand functions and argued that the principal causes for the erroneous projections were (1) insufficient recognition

of "backlog demand" (unfilled positions from previous years) in the demand function, and (2) overly optimistic supply projections. Hermanson and Miles added a backlog demand component to the demand function and lowered the estimated supply figures. Based on their revisions, these authors concluded that an oversupply of accounting faculty would not develop until at least the early to mid-1980s.

The actual supply and demand quantities have been quite different from those predicted by either the AAA committee report [AAA, 1974] or Hermanson and Miles [1976], and the oversupply predicted by the AAA report never developed. In fact, the American Accounting Association's data [1987, 1988, 1989, 1990] continue to reflect a cumulative accounting faculty shortage.

SUPPLY OF AND DEMAND FOR ACCOUNTING DOCTORATES

The AAA report [1974] and the Hermanson and Miles study [1976] both projected a constantly increasing supply of accounting doctorates. However, the supply has been somewhat erratic over the period 1978-89 and has averaged 176 per year. Of the degrees granted after 1974, 82.3 percent of the degree recipients are at one of the 592 schools in the Hasselback database [1990a]. Applying this percentage to the average annual supply yields a new supply of accounting doctorates of approximately 145 per year. We expect this level of supply to continue under current conditions. Factors affecting supply are discussed in a later section.

The demand forecasting model employed by both the AAA committee report [AAA, 1974] and Hermanson and Miles [1976] calculates demand for accounting doctorates as the sum of two components—growth demand and replacement demand. Growth demand is

the number of new accounting faculty positions. These positions result from factors such as increased enrollments, lower teaching loads, new degree programs, and longer (e.g., five-year) degree programs. Replacement demand is the sum of retirements, deaths, and net transfers (the difference between the number of departures from academe and the number of arrivals to academe).

POTENTIAL RETIREMENT DEMAND

We define potential retirement demand as the replacing, at retirement, of all current tenure-track accounting faculty members with persons holding accounting doctorates. The creation of the Hasselback database [Hasselback, 1990a], which was not available for use in the earlier studies, enables us to estimate retirement demand much more directly and accurately than was formerly possible. The 1990 *Accounting Faculty Directory* [Hasselback, 1990b], which is incorporated in the database, reveals that 5,314 accounting faculty are currently employed in tenure-track positions by colleges and universities in the United States. This total can be divided between 2,936 tenure-track faculty holding an accounting doctorate and 2,378 not holding such a degree, as

shown in Table 1; those without accounting doctorates hold a master's degree, a doctorate in some other discipline, or some other degree.

In recent years, James Hasselback has requested listed institutions to report the ages of their faculty members. At this time, age information is available for 86.5 percent of tenure-track faculty holding an accounting doctorate and 68.1 percent of tenure-track faculty without an accounting doctorate. The age distributions for faculty with and without doctorates are presented in columns (1) and (2) of Table 2. Columns (3) and (4) extrapolate these distributions to their respective populations by simply dividing each reported frequency by the appropriate reporting percentage.

Table 3 shows the retirements projected for both groups holding tenure-track positions under the assumption that individuals in each age group retire at age 65. The group of individuals who are now 65 or older were assumed to retire at a uniform rate during the five years 1990 through 1994. Thus the 58 individuals holding an accounting doctorate who are 65 or older are projected to retire at the rate of 12 per year during 1990, 1991, and 1992 and at the rate of 11 per year during 1993 and 1994. The 125 individuals without an accounting

TABLE 1

Accounting Faculty in Tenure-Track Positions at Colleges and Universities in the United States, 1990

Faculty holding accounting doctorate	2,936
Faculty without accounting doctorate	<u>2,378</u>
Total	<u>5,314</u>

Note: There are 592 nonforeign four-year colleges and universities, located in the United States, Guam, and Puerto Rico, listed in the 1990 *Accounting Faculty Directory* [Hasselback, 1990b]. The directory is compiled from self-reported information from accounting faculties, departments, or schools at the various four-year colleges and universities listed.

TABLE 2
Age Frequencies of Tenure-Track Accounting Faculty*

Age	Reported Age Frequencies for Tenure-Track Faculty		Estimated Age Frequencies for All Tenure-Track Faculty	
	Holding Accounting Doctorate (Col. 1)	Without Accounting Doctorate (Col. 2)	Holding Accounting Doctorate (Col. 1/.865)	Without Accounting Doctorate (Col. 2/.681)
65 or over	50	85	58	125
64	19	27	22	40
63	16	18	19	26
62	19	33	22	48
61	34	29	39	43
60	32	40	37	59
59	39	33	45	48
58	48	28	56	41
57	41	30	47	44
56	45	52	52	76
55	60	36	69	53
54	78	37	90	54
53	46	41	53	60
52	54	53	62	78
51	67	56	78	82
50	82	55	95	81
49	81	49	94	72
48	99	71	115	104
47	130	61	150	90
46	115	58	133	85
45	119	69	138	101
44	101	71	117	104
43	157	65	182	95
42	142	79	164	116
41	100	51	116	75
40	110	42	127	62
Under 40	<u>654</u>	<u>350</u>	<u>756**</u>	<u>516**</u>
Total	<u>2,538</u>	<u>1,619</u>	<u>2,936</u>	<u>2,378</u>

*Derived from the Hasselback database [1990a]

**Rounded.

doctorate who are 65 or older were projected to retire at a rate of 25 per year during 1990, 1991, 1992, 1993, and 1994.

In our judgment, retirement demand is by far the most significant and variable component of replacement demand. Taken together, deaths and net transfers represent negligible components of replacement demand; therefore, we approximate replacement demand by the number of retirements.

GROWTH DEMAND

As noted earlier, growth demand is the number of new accounting faculty positions. In our judgment, a reasonable estimate of future growth demand is a simple average of past growth demand. The number of accounting doctorates granted during the years 1962 through 1989 totals 3,789. Only 82.3 percent or 3,118 of these accounting doctorates filled accounting faculty positions at the

colleges and universities included in the Hasselback database. During the same period, 278 individuals with accounting doctorates retired or died. The difference of 2,840 (3,118 - 278) represents the total growth demand for that 27-year period; therefore, the average annual growth demand during that period was 105 faculty.

Table 4 shows the cumulative estimated shortage of accounting faculty that would result if this historical growth demand of 105 continues into the future, assuming the new supply also follows the historical average of 145. This cumulative estimated shortage is caused by the significant projected retirements.

Figure 1 emphasizes the potential for growth in this cumulative shortage situation.

Although we believe average historical growth to be a reasonable estimate of future growth demand, various factors could be interpreted to call for an increase or decrease in that estimate. These factors and their impact on the market for accounting doctorates are discussed in the next two sections. The first section considers factors that might call for an estimate that is lower than the historical average, and the second considers factors that might call for an estimate that is higher than the historical average.

TABLE 3
Projected Retirements of Tenure-Track Accounting Faculty

Year	Tenure-Track Faculty*		Total
	Holding Accounting Doctorate	Without Accounting Doctorate	
1990	34	65	99
1991	31	51	82
1992	34	73	107
1993	50	68	118
1994	48	84	132
1995	45	48	93
1996	58	41	97
1997	47	44	91
1998	52	76	128
1999	69	53	122
2000	90	54	144
2001	53	60	113
2002	62	78	140
2003	78	82	160
2004	95	81	176
2005	94	72	166
2006	115	104	219
2007	150	90	240
2008	133	85	218
2009	138	101	239
2010	117	104	221
2011	182	95	277
2012	164	116	280
2013	116	75	191
2014	127	62	189

*Those now 65 or older are projected to retire evenly over the period 1990-1994.

TABLE 4
Excess of Estimated Total Demand Over Estimated New Supply
Assuming Continuance of Historical Growth Demand

<u>Year</u>	<u>New Supply*</u>	<u>Estimated Retirement Demand</u>	<u>Estimated Growth Demand**</u>	<u>Estimated Total Demand</u>	<u>Annual Estimated Shortage Of Faculty</u>	<u>Cumulative Estimated Shortage of Faculty</u>
1990	145	99	105	204	59	59***
1991	145	82	105	187	42	101
1992	145	107	105	212	67	168
1993	145	118	105	223	78	246
1994	145	132	105	237	92	338
1995	145	93	105	198	53	391
1996	145	97	105	202	57	448
1997	145	91	105	196	51	499
1998	145	128	105	233	88	587
1999	145	122	105	227	82	669
2000	145	144	105	249	104	773
2001	145	113	105	218	73	846
2002	145	140	105	245	100	946
2003	145	160	105	265	120	1,066
2004	145	176	105	281	136	1,202
2005	145	166	105	271	126	1,328
2006	145	219	105	324	179	1,507
2007	145	240	105	345	200	1,707
2008	145	218	105	323	178	1,885
2009	145	239	105	344	199	2,084
2010	145	221	105	326	181	2,265
2011	145	277	105	382	237	2,502
2012	145	280	105	385	240	2,742
2013	145	191	105	296	151	2,893
2014	145	189	105	294	149	3,042

*New Supply was determined as follows: 176 (average annual supply) \times 82.3% (percentage that remain in academe) = 145.

**Estimated growth demand was determined as follows: 3,789 (accounting doctorates granted 1962-1989) \times 82.3% (percentage that remain in academe) = 3,118 (accounting doctorates employed in U.S. universities); 3,118 - 278 (number of retirements and deaths of accounting doctorates 1962-1989) = 2,840 (total growth demand for 1962-1989); 2,840/27 years (1962-1989) = 105 annual (historical) growth demand for 1962-1989.

***This amount agrees with the shortfall projected by the AAA [1990] for 1990.

Factors that Could Decrease the Estimate of Growth Demand

The "baby boom" in the United States began in 1946 and lasted about 18 years. The last of the "baby boomers" finished college in the 1980s. This fact would suggest that college enrollments could level off or even decline in the future, making the future growth demand lower than it has been historically.

Also, a greater emphasis on higher education during the period 1962-1989,

coupled with the increased availability of resources devoted to higher education during this same period, may have led to a rapid growth of universities and of faculties in general. In the future, emerging concerns, such as environmental improvements, additional health treatment programs, and similar issues, could compete for funds and reduce the portion of funds devoted to higher education. Thus, the historical rate of growth might not continue in the future.

In addition, the relatively high cost of hiring accounting doctorates could also limit growth demand. Other alternatives, such as the increased hiring of retired practitioners and part-time instructors, might be used to fill faculty positions.

In our judgment, these three trends, taken together, could justify reducing our estimate of future growth demand for accounting doctorates by as much as 25 percent. Table 5 and Figure 2 show the impact of a 25-percent reduction in growth demand. This projection would still result in a significant shortage under present supply conditions.

Factors that Could Increase the Estimate of Growth Demand

In contrast to the factors that may decrease growth demand, there are indications that growth demand might be higher than the historical average. For example, the American Institute of Certified Public Accountants has approved

a 150-hour education requirement for persons applying for membership after the year 2000. Also, many states have either passed a 150-hour requirement to sit for the CPA exam or are likely to pass such a requirement in the near future. These developments could result in a substantial increase in the number of accounting courses taught, with a resulting increase in the demand for accounting faculty, depending on the structure of five-year curricula.

The new emphasis on quality teaching as a result of *Perspectives on Education: Capabilities for Success in the Accounting Profession* [1989] and the initiatives of the Accounting Education Change Commission may lead to smaller student-faculty ratios and more sections of accounting courses. Unless more faculty are hired, this could lead to higher individual faculty teaching loads. However, the pressure to publish leads many individual faculty to seek lower teach-

FIGURE 1
Cumulative Estimated Shortage of Accounting Doctoral Faculty
Assuming Historical Growth Demand

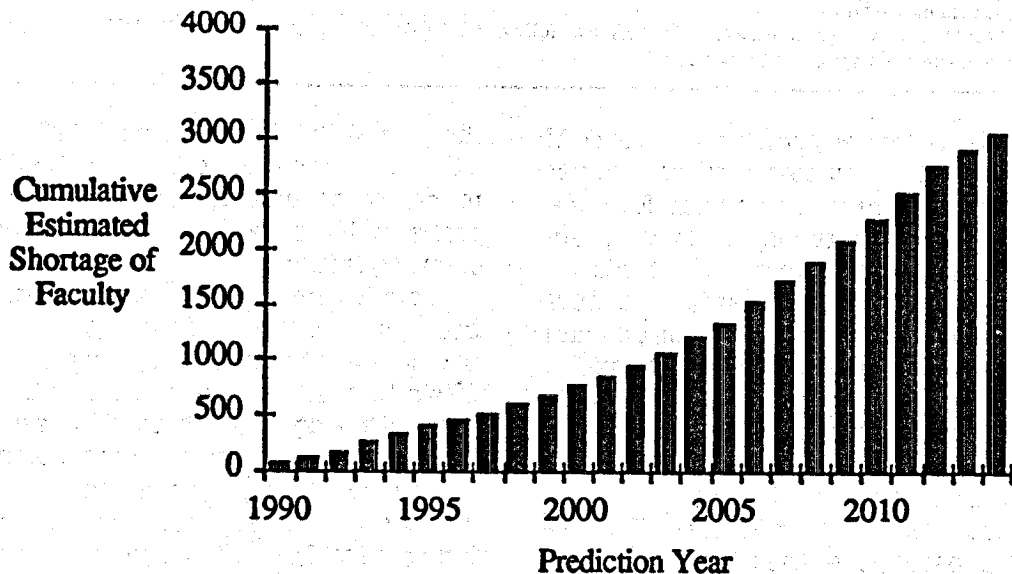


TABLE 5
Excess of Estimated Total Demand Over Estimated New Supply
Assuming Growth Demand 25 Percent Below Historical Average

<u>Year</u>	<u>New Supply*</u>	<u>Estimated Retirement Demand</u>	<u>Estimated Growth Demand**</u>	<u>Estimated Total Demand</u>	<u>Annual Estimated Shortage of Faculty</u>	<u>Cumulative Estimated Shortage of Faculty</u>
1990	145	99	79	178	33	33
1991	145	82	79	161	16	49
1992	145	107	79	186	41	90
1993	145	118	79	197	52	142
1994	145	132	79	211	66	208
1995	145	93	79	172	27	235
1996	145	97	79	176	31	266
1997	145	91	79	170	25	291
1998	145	128	79	207	62	353
1999	145	122	79	201	56	409
2000	145	144	79	223	78	487
2001	145	113	79	192	47	534
2002	145	140	79	219	74	608
2003	145	160	79	239	94	702
2004	145	176	79	255	110	812
2005	145	166	79	245	100	912
2006	145	219	79	298	153	1,065
2007	145	240	79	319	174	1,239
2008	145	218	79	297	152	1,391
2009	145	239	79	318	173	1,564
2010	145	221	79	300	155	1,719
2011	145	277	79	356	211	1,930
2012	145	280	79	359	214	2,144
2013	145	191	79	270	125	2,269
2014	145	189	79	268	123	2,392

*New Supply was determined as follows: 176 (average annual supply) \times 82.3% (percentage that remain in academe) = 145.

**Estimated growth demand was determined as follows: 105 (historical growth demand) \times 75% (assuming 25% decrease in growth demand) = 79.

ing loads (fewer sections per year). If individual faculty members teach fewer sections, there will be a need for more accounting faculty just to cover the accounting courses presently offered.

A more complex business environment will probably increase the demand for accounting services and, therefore, increase the demand for accounting graduates. In fact, the Bureau of Labor Statistics predicts that the demand for accountants and auditors will rise much faster than in the recent past. The Bureau estimates that an additional 376,000 accountants will be needed by

the year 2000 [*Projections...* 1989, p. 14]. This dramatic increase in the demand for accounting graduates will probably increase the demand for accounting faculty.

In addition, even though the baby boom is over, the children of the baby boomers will become college age in the 1990s. The last of these children will not pass college age until about 2010, resulting in increased enrollments during these years. This phenomenon, in conjunction with recent increases in starting salaries for staff accountants, may increase enrollments in accounting and

thereby increase the demand for accounting faculty. Also, much of the effort of the Accounting Education Change Commission will be directed at increasing the number of high quality accounting graduates.

In our judgment, these diverse factors, taken together, could justify an increase in our estimate of future growth demand for accounting doctorates by as much as 25 percent. Table 6 and Figure 3 show the estimated cumulative shortage that would develop if a 25-percent increase in growth demand occurred. This projection indicates a severe shortage of doctorally-qualified accounting faculty.

FACTORS AFFECTING THE SUPPLY OF DOCTORATES

All three projections of the long-term market for accounting faculty, as reported in Tables 4 through 6, indicate a significant shortage of accounting doctorates. To address this faculty shortage,

the supply of accounting doctorates needs to be increased. However, increasing the supply of doctorally-qualified faculty involves focusing on two challenging aspects of the problem. First, qualified candidates must be found to pursue doctoral degrees in accounting. Second, universities currently offering accounting doctorates must be willing to expand their doctoral programs, or additional universities will have to establish new doctoral programs.

Attracting qualified candidates to pursue doctoral studies is a continuing challenge for the academic community. The opportunity cost to the candidate of pursuing a doctoral degree can be considerable, since it takes a minimum of three to four years beyond a master's degree for even the most qualified candidate to complete the degree requirements.¹ A potential candidate has cur-

¹In fact, Campbell and Hermanson [1990, p. vi] state that most programs will take four to six years (beyond the bachelor's degree) to complete.

FIGURE 2
Cumulative Estimated Shortage of Accounting Doctoral Faculty
Assuming Decreased Growth Demand

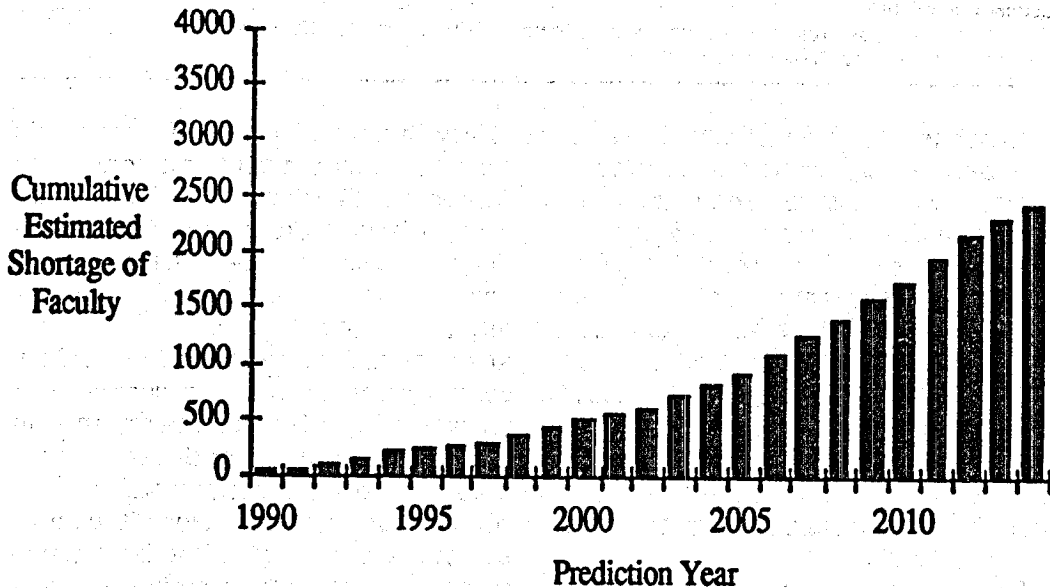


TABLE 6
Excess of Estimated Total Demand Over Estimated New Supply
Assuming Growth Demand 25 Percent Above Historical Average

Year	New Supply*	Estimated Retirement Demand	Estimated Growth Demand**	Estimated Total Demand	Annual Estimated Shortage of Faculty	Cumulative Estimated Shortage of Faculty
1990	145	99	131	230	85	85
1991	145	82	131	213	68	153
1992	145	107	131	238	93	246
1993	145	118	131	249	104	350
1994	145	132	131	263	118	468
1995	145	93	131	224	79	547
1996	145	97	131	228	83	630
1997	145	91	131	222	77	707
1998	145	128	131	260	114	821
1999	145	122	131	253	108	929
2000	145	144	131	275	130	1,059
2001	145	113	131	244	99	1,158
2002	145	140	131	271	126	1,284
2003	145	160	131	291	146	1,430
2004	145	176	131	307	162	1,592
2005	145	166	131	297	152	1,744
2006	145	219	131	350	205	1,949
2007	145	240	131	371	226	2,175
2008	145	218	131	349	204	2,379
2009	145	239	131	370	225	2,604
2010	145	221	131	352	207	2,811
2011	145	277	131	408	263	3,074
2012	145	280	131	411	266	3,340
2013	145	191	131	322	177	3,517
2014	145	189	131	320	175	3,692

*New Supply was determined as follows: 176 (average annual supply) \times 82.3% (percentage that remain in academe) = 145.

**Estimated growth demand was determined as follows: 105 (historical growth demand) \times 125% (assuming 25% increase in growth demand) = 131.

rent earnings and expectations of future earnings that represent a substantial opportunity cost if given up to pursue a doctoral degree. Ways must be found to decrease this opportunity cost. Offering doctoral fellowships and scholarships is one approach, but the amounts of such support must be significant enough to provide a real monetary incentive that would substantially reduce the opportunity cost involved. Another approach would be to seek corporate or public accounting sponsorships of individual doctoral candidates.

Serious salary compression (even

salary inversion) makes an academic career in accounting less attractive [see Jacobs and Herring, 1987]. New assistant professors are being offered salaries of \$60,000 or more on a nine-month basis. Many associate and full professors make only slightly more than that amount, and some make less. Salary compression is likely to continue or worsen in the future. Therefore, the long-term salary potential of an academic career may not compare favorably with other alternatives. Of course, senior faculty salaries can be supplemented by consulting activities, text-

book authorships, professorships, and endowed chairs. These opportunities mitigate the salary problem and should be communicated to potential doctoral students.

Convincing universities currently offering accounting doctorates to increase the sizes of their doctoral programs or motivating other universities to establish new doctoral programs is difficult. Doctoral education is very expensive for the institution as well as for the candidate. Doctoral class sizes are small, individual faculty attention is necessary, and other costs, such as computer time and database acquisition, can be significant. Faculty members sometimes resist enrolling additional doctoral students, since doctoral courses are time-consuming to teach, and tasks such as dissertation supervision tend to demand extensive amounts of faculty time yet carry little if any teaching credit. Clearly, removing some of the faculty disincentives connected with doctoral

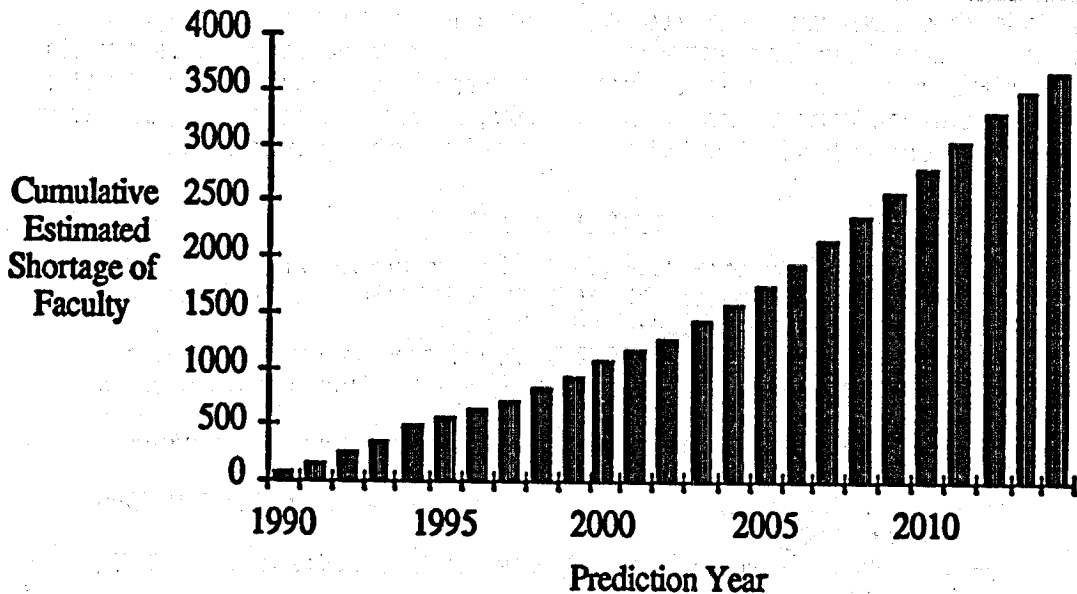
education would be an important step toward increasing doctoral program capacity. For example, granting teaching credit for chairing or serving on dissertation committees would be helpful.

CONCLUDING COMMENTS

The results of this study are conditional on the assumptions underlying the projections of both new supply and growth demand. These projections rely on historical patterns that may not continue. In addition, estimated retirement demand is based on the Hasselback database, which is comprised of self-reported information from four-year colleges and universities. These limitations should be noted in interpreting the results.

Based on the projections used in this study, the supply-demand situation over the next 25 years does not appear promising. Unless the annual supply of accounting doctorates is increased signifi-

FIGURE 3
Cumulative Estimated Shortage of Accounting Doctoral Faculty
Assuming Increased Growth Demand



cantly, serious faculty shortages probably will develop. Those who might argue that market forces will equate supply and demand ignore the fact that we have an apparent capacity problem in accounting doctoral education. Even though more candidates may be induced to pursue a doctorate because of market conditions, they may be unable to find a doctoral program opening unless universities and their faculties are willing to increase the size of their current programs or to begin new programs. In fact, anecdotal evidence suggests that just the opposite situation is occurring; some institutions have actually reduced the sizes of their doctoral programs by raising admission standards to improve quality.

Some may conclude that no action should be taken to alleviate the potential severe shortage of doctorally-qualified faculty. They may believe that such a shortage will lead to higher salaries for all accounting faculty. However, a severe shortage could actually lead to reduced salary increases for current faculty. The high salaries needed to attract new faculty in a tight market must come from somewhere. Given limited budgets, the funds for these high salaries may come, at least in part, from funds otherwise available for salary increases for current faculty members. Thus, it may be that current accounting faculty would have

higher future incomes by helping to increase the supply of accounting doctorates.

If the supply of accounting doctorates is not increased in the future, other accommodations may also have to be made. Some universities may be forced to use an increasing number of part-time instructors, doctoral students, master's students, and retired CPAs (as adjunct professors) to teach classes as a means of containing the overall cost of instruction. This development could threaten accreditation for these institutions unless accreditation standards are revised. In addition, universities may have to increase the number of large classes used to teach introductory and intermediate accounting or raise the admission standards for students wishing to major in accounting. To the extent that persons with accounting doctorates are available to hire, these strategies could be avoided.

In summary, the significant increase in the demand for accounting faculty caused by future retirements and growth will affect many individuals—present and future accounting faculty members, university administrators, and accounting students. Unless ways are found to address the potential cumulative shortage of doctorally-qualified faculty, the quality of accounting education may be seriously threatened.

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