# A Survey of Ph.D. Candidate Shortage in Business Schools

***Sarah K. Bryant***
***Shippensburg University***
***Shippensburg, Pennsylvania***
**skbryant@ship.edu**

***Maling Ebrahimpour***
***University of South Florida***
***Saint Petersburg, Florida***
**bizdean@stpete.usf.edu**

## Introduction

Discussions of the issue of Ph.D. candidate shortages have been held in many forums during the past few decades. In fact, *Business Week* (October 23, 2006) reports that the number of new business doctorates declined about eight percent from 2000 to 2004. To complicate the problem more, not all new doctorates in business enter the academic world.

In 2003, AACSB International published an informative study, "Sustaining Scholarship in Business Schools," followed by a second article in 2004 written by committee members entitled, "Supply, Demand, and the Making of Tomorrow's Business Scholars," published by the American Council on Education. Using the same data, these articles first establish that there is a continuing shortage of Ph.D.s in all specializations of business education. The articles then discuss the issues of shortages of Ph.D.s, and list several methods by which schools could address these shortages. In addition, the AACSB website includes an informative section to encourage potential candidates to apply to Ph.D. programs. Efforts are being made on other fronts, as well, to address this critical issue. There appears to be disconnect, however, between what the degree-granting universities can and will do and the needs of the market.

AACSB (2003) calls on Ph.D.-granting universities to take action to help alleviate this shortage. It is our contention that, while there are many reasons for the shortage, to a large extent, Ph.D. degree-granting universities are part of the cause of this problem. Funding for programs has been reduced. However, with the large number of applicants and excess capacity within Ph.D. programs, perhaps more could be done by these schools to alleviate shortages.

In the following section, we discuss the literature that exists on this topic. The literature review will provide a deeper understanding of the existence of shortage of doctoral students in various business doctoral specializations. The next section discusses the research methodology used in this research. We use the survey method and utilize a survey instrument that the authors developed to help us identify the number of specializations in doctoral programs in business schools and number of applicants accepted into each specialization. The remainder of the paper discusses our findings and ends with a summary and conclusions.

# Review of the Literature

## A Continuing Concern

The issue of the Ph.D. shortage is not new. During the 1970s and early 1980s, several articles were written that highlighted the needs of universities to find solutions to the shortages that existed at that time. Three studies focused on the accounting discipline. Stone (1974) surveyed fourteen universities and found that three and one-half positions went unfilled on average in accounting. Through reviews of job placement ads, Crum (1978) reported that only forty percent of accounting positions were being filled. Surveys of hiring schools in 1980 led McCullough and Wooten (1981) to conclude that the areas of accounting and finance were reaching critical shortages of terminally-qualified faculty. The Association to Advance Collegiate Schools of Business[1] (AACSB International) formed a task force in the late 1970s to study the issue, but from an overall view, rather than examining certain disciplines, as the aforementioned articles did, the task force published its findings in 1981 (Kaplan, 1981). Surveys indicated that there was excess capacity in Ph.D. programs. Drawing from Crum (1981) and the AACSB (Kaplan, 1981) studies, Shipley and Engle (1982) cite that increased standards by AACSB increased the need for Ph.D.-qualified faculty, and they highlight the shortage of accounting Ph.D. candidates at all stages of study.

More recently, AACSB presented evidence that the shortage continues. AACSB (2003) states that:

> Data from the National Science Foundation reveal that the annual production of business doctorates by U.S. schools decreased more than 19 percent between 1995 and 2000, when U.S. schools awarded 1,071 such degrees. Exacerbating this trend is the fact that only 62 percent of graduates of U.S. doctoral programs in business in 2000 had plans for employment in educational institutions. In Canada, although 75 percent of recent doctoral recipients took employment in academia, one-third of them joined institutions outside Canada (19 percent accepted employment at U.S. schools). Although new doctoral programs started in Europe and the United States in recent years have led to increasing enrollments—for example, enrollment in U.K. postgraduate research programs increased 23 percent from 1994 to 1999 (from 3,792 students to 4,667 students)—current doctoral enrollments do not indicate significant improvements for the foreseeable future.
>
> Meanwhile, expanding business enrollments, especially at the undergraduate level, and increases in the numbers of faculty retirements—more than 30 percent of U.S. business faculty members are age 55 or older, compared with less than 20 percent only a decade ago—have escalated the demand for faculty and intensified

[1] Then called "The American Assembly of Collegiate Schools of Business."

> competition. In Europe, where management education generally dates from only the 1970s, schools will confront particularly acute shortages as the first major wave of faculty retirements occurs in the next five years (p. 13).

Using the data as reported by AACSB, Davis and McCarthy (2005), Basil and Basil (2006), Marshall, Dombroski, and Garner (2006), as well as AACSB International (2002, 2003) all weigh in on the continuing problems with attracting and retaining candidates in all specializations in business education. Davis and McCarthy (2005) report a severe shortage in the area of marketing. They use data from the AACSB (2003) study, and survey marketing doctoral program coordinators and students. Davis and McCarthy (2005, p. 17) say "eighty-six percent of respondents from U.S. programs reported having a limit on doctoral program enrollments. Among the 23 schools responding to our marketing coordinator survey, more than half were under-enrolled for the most recent year and for the 5-year period from 1996 to 2000. On average, two new students enrolled each year, whereas marketing doctoral program capacity was three students per year." They cite two key factors that cause the shortage, faculty retirements and demand for business school education. Basil and Basil add to this factor list for all specializations by citing the decline in the number of PhDs awarded between 1995 and 2000, as reported by AACSB, the decline in the number of US citizens obtaining a doctoral degree, and the reduction in the number of PhDs taking jobs in academe.

The articles reviewed show that a shortage exists. However, Owen (2009) tries to negate the findings of others to argue that there is no shortage. He argues that baby-boom retirements have not occurred in large numbers, students enrollments are declining, and AACSB over-estimated business school needs for faculty in their prior studies, leading to higher salaries for new business faculty and more students enrolling in Ph.D. programs. Owen is also critical as to the effects of broader accreditation efforts by AACSB to include schools not only in the top tier, but at lower-tier schools, as well. Some of these effects were to increase demand for Ph.D.-qualified faculty in smaller- to middle-sized schools.

The current paper accepts that there is a continuing shortage of PhDs in general, and that there is a need to find workable solutions. There is a need to understand the shortage from many angles, including what potential candidates may perceive as reasons to attend a Ph.D. program, as well as the needs of degree-granting universities, to see if reasons and needs mesh.

## Ph.D.-Granting Institutions' Perceptions

The current study reports findings of surveys conducted through telephone and email of Ph.D. program directors and deans. There were several concerns uncovered while conducting the surveys for which we found no evidence in the literature. First, Ph.D. program funding has been reduced, so that deans and program directors have had to

accept much smaller entrance numbers.[2] However, there is evidence also of excess capacity, as slots go unfilled. Second, faculty members in departments that are recruiting candidates are held to the highest research standards by accrediting bodies. As a result, rational choice on the parts of research faculty cause them to emphasize research skills of prospective candidates to assist faculty with their research, and to create as strong a pool of graduates as possible, in their estimation. However, as rational as these choices are from the degree-granting university's perspective, this structure may not be optimal from the hiring market's perspective.

In the perceptions and experiences of the authors, in the production of Ph.D.s, there may be a perceived mismatch in market needs. For the most part, Ph.D.-granting business schools are top-tier research universities. This level of school is supported by rankings as to where they place their Ph.D. graduates, as well as by the level of academic qualification that their professors are required to maintain for AACSB International accreditation. Therefore, these schools look for top research candidates and turn down good potential teacher/researchers. However, most other universities need teachers who research and publish, not researchers who teach. There is a difference. Researchers who do end up at a more teaching-oriented business school can find themselves frustrated with the amounts of teaching, not leaving time for the research that led them into higher education in the first place.

Students get frustrated with the lack of attention such professors offer to them. This can lead to another problem, as undergraduate and master's-level students experience poor quality interaction with their faculty. As a result, this translates into poor customer service that can cause these students not to want to continue in higher education.

## Hiring Universities' and Market Perceptions

Hiring Ph.D.-qualified faculty in some disciplines is particularly difficult and expensive. Many undergraduate- and masters-level universities do not have access to student-teachers, and therefore, use adjuncts as they can recruit them. Whereas many adjuncts can be much better teachers than regular, full-time faculty, the market perceives the extensive use of adjunct faculty as a weakness on the part of universities. Even accrediting bodies limit this source of teachers, who cannot devote much time to participate in the life of the university and are "only" professionally qualified.

There are other potential reasons for the shortage. Ph.D. programs often wait for students to go to them, thereby missing opportunities to encourage a broader array of students to apply. Career fairs for undergraduate and graduate students seldom advertise careers in higher education. The aforementioned AACSB International Ph.D. area of their website does make mention of some efforts to recruit students directly. However, deans, MBA

[2] One school reported in a phone conversation with one of the authors that their program had lost over 100 Ph.D. student slots in the past five years.

and other masters-level program directors, and faculty could be rich sources of potential candidates, if Ph.D. granting schools marketed to them, asking for nominees. Included in this marketing effort could be information on cycles of recruitment, student recruitment areas, required skills and aptitudes, as well as questions concerning potential for success and completion. The one exception is the Ph.D. Project sponsored by KPMG that focuses on introducing minority students at undergraduate and master levels to Ph.D. programs and encouraging them to attend business doctoral programs. However, Ph.D. Project is more of an exception than the rule, and potential students must have knowledge to use this program.

There are also shortages of Ph.D. graduates, once the decision has been made to attend a Ph.D. program. There are Ph.D. candidates who do not finish. Some do not pass their comprehensive exams; some quit before working on their dissertations; while others never complete their dissertations. Using "ABDs"[3] to teach courses may hinder progress on dissertations, especially for those who may prefer teaching to research, anyway. Time and motivation become negative factors preventing completion. However, ABDs are a ready source of part-time teachers who do what they are asked, sometimes out of fear of saying "no" or due to the need of income.

# Methodology

At the time of this study, the AACSB International website identified 110 AACSB-accredited universities as having doctoral programs. All Ph.D. program directors were contacted as listed on the website. Telephone calls and/or emails were sued to contact these program directors. If they agreed then to participate, an email with a list of questions was sent to them. The survey instrument was embedded within the email, and respondents were asked to hit the reply key and then answer the questions. The questionnaire was focused on: types of specializations and number of students in each specialization area, applicants' demographics, number of applications, and statistics regarding acceptance and matriculation. Of the 110 program directors, 73 responded to the survey questionnaire regarding the nature and status of the fall 2006 entering class of students for their Ph.D. programs. Although not all 73 respondents answered all the questions, they covered most of the questions, and as such, they all were included in the analysis. In the analysis section, where appropriate, number of respondents was indicated.

# Analysis

As Table 1 indicates, based on the responses received from the 73 program directors, a total of 14,210 applications for Ph.D. programs were received. Of this number, only 1637 (or about 12 percent) were accepted by the universities. However, only 855 students

[3] ABD means "All But Dissertation."

started the programs (only about six percent of the total applicants).[4] Ninety-two percent of all schools accepted students in the fall semester only.

Table 1: University Focus and Selectivity

| | Teaching | Research | Both |
|---|---|---|---|
| Total No. of Responses (73 Universities) | 0 | 57 | 16 |
| Focus | 0% | 78% | 22% |
| | | | |
| | Applicants* | Accepted* | Matriculated |
| Applications | 14,210 | 1637 | 855 |
| Acceptance rate | | 12% | |
| Yield | | | 52% |
| Actual Yield** | 6% | | |
| * The number does not show the number of individuals, rather it is the number of applications<br>** Actual yield is higher as each applicant could have applied to more than one school | | | |

Overwhelming, the majority of all schools (78 percent) stated that the main focus of their doctoral program is on research, with the remaining 22 percent indicated that both research and teaching are the focus. However, from the latter group, almost all indicated teaching has a lower priority.

The result of the survey, as shown in Table 2, reveals that there were nine areas of study listed, most in traditional areas, offered by these schools. Areas of specialization have been aggregated into the major areas of study. They are: Accounting (54); Entrepreneurship (4); Finance (52), including, International Finance, Risk Management/Insurance, and Real Estate Management; Information Systems (36), General Management (44), including Human Resource Management; Organizational Behavior/Organizational Theory (16); Marketing (58); Operations Management (28); Operations Research/Management Science (14), including Statistics; and Policy/Strategy (20). In addition, very few schools indicated that they offer specializations in areas such

[4] The authors do note that probably there is overlap in the number of applicants, as prospective students applied to more than one school or even program within a school.

as Ethic/Law, Tourism, Health Care Management, and System Dynamics. However, several PhD directors indicated that Economics is housed within their schools, as well.

Table 2: Number of Universities with Specific Majors and Number of Doctoral Students by Specialization in Business Schools

| Specialization | Number of Schools (60) | Number of Students |
|---|---|---|
| Accounting | 54 | 88 |
| Entrepreneurship | 4 | 2 |
| Finance | 52 | 128 |
| Information Systems | 36 | 47 |
| General Management | 44 | 105 |
| Organizational Behavior/Theory | 16 | 28 |
| Marketing | 58 | 95 |
| Operations Management | 28 | 30 |
| Operations Research/Management Science | 14 | 22 |
| Strategy | 20 | 19 |

The most popular major was Finance (128 students), followed by Management (105), Marketing (95), and Accounting (88). However, if one considers areas such as OB/OT under Management, then this area would be the most popular, with a total of 133 students entering in 2006. Of course, popularity of majors such as Finance and Accounting is understandable, since during the last few years, Ph.D. graduates in these two areas have been in high demand. This environment has attracted new students who expect to command higher salary than students who graduate from other majors. Logistics and supply chain management are other areas cited as experiencing particular shortages. Table 2 shows details in terms of numbers of students for each area of study and specialization, for 60 of the reporting schools.

Demographics are interesting, as well. Table 3 shows the results of applicants' demographics. First, although only 38 program directors responded to this question, according to the survey, about 34 percent of all new doctoral students were women. Therefore, the ratio of male to female students in business programs is approximately two to one. It is interesting to note that Olian, LeClair, and Milano's study in 2004 indicated the same ratio, as well. In addition, the survey found that over half of Ph.D. students in the 2006 entering class were not US citizens, as indicated also in the study by Olian, LeClair, and Milano. This is interesting, since it is perceived that under the current political climate, there are fewer students entering the US to pursue graduate study.

Table 3: Student Demographics

| | Gender | | Age Distribution | | | Origin | |
|---|---|---|---|---|---|---|---|
| Total No. of Responses (Universities) | Female | Male | 20-29 | 30-39 | Over 40 | US Citizen | Non-US Citizen |
| 38 | 34% | 66% | 50% | 42% | 8% | | |
| 54 | | | | | | 47% | 53% |

However, it should be noted that this high number of non-US citizens being accepted in US Ph.D. programs helps sustain the programs with well-qualified candidates, but it can also exacerbate the shortage, as at least some of these graduates return to their home countries. Third, the survey reveals that about 50 percent of the entering class are between 20-29 years old, 42 percent are between 30-39 years old, and only about eight percent are 40 years or older.

## Possible Solutions

Recommendations have been made in the past to alleviate the shortage. Shipley and Engle state that "there is one basic conclusion that can be drawn: Academe has excess capacity for producing doctorates in accounting and therefore could benefit from marketing efforts." One recommendation made by the AACSB study was to cross train Ph.D.s from other disciplines to fill the gaps within business schools. Marshall, Dombroski, and Garner (2006, p.46) tested this recommendation for the accounting field. They found that "(u)sing various statistical methods, . . . accounting faculty with accounting doctorates and accounting faculty with non accounting doctorates did not differ with respect to: teaching specialty, rank, tenure status, number of different universities where they taught, or number of years of work experience in public accounting, industry, government, or other work experience." They did find that non-accounting Ph.D.s had more years of experience and held degrees longer than accounting Ph.D.s.

More recently, AACSB (2004) suggested more new funding from governments and corporate sources to increase production of Ph.D.s, as well as better marketing of programs to prospective students. These are good suggestions, but more needs to be done.

Increased funding from governments and corporations are valid means to help alleviate the expense of these programs to degree-granting schools, however, other ways must be found to reduce the burden of these programs on these schools. Perhaps we might expect hiring schools to bear part of the cost. For hiring universities, students are "free goods." The cost of educating them has been borne by the Ph.D.-granting schools, as well as by the taxpayers of many states.

One suggestion to help alleviate the shortage of candidates, and to mitigate the cost, is for hiring schools to recommend one or two candidates to attend a Ph.D. program. In return, the hiring schools would help pay at least part of the cost of the student's education, depending on how much the student contributes to the Ph.D. program through teaching assignments, research, etc. In return, the hiring school would expect the newly minted Ph.D. to teach for a period of five years, perhaps, or maybe until tenure/promotion time. Final decisions could be made at that time. This model could be particularly useful to schools that are rural or little known, as in programs that small towns have to encourage primary school teachers or medical doctors to work in their communities by helping with tuition payments.

Cohorts could develop that represent a variety of hiring schools and help direct teaching requirements. For example, if there were shortages of organizational behavior, finance, and marketing professors expected in the next five to ten years at the sponsoring schools, emphasis might be put on these areas for the cohort. This type of planning could help Ph.D.-granting schools to know of needs in advance, to assign their faculty accordingly, and to market the program to others who might fill vacant slots.

There are additional solutions that might be tried, from the results of our survey.

- Based on our findings, one recommendation is to find ways to encourage more women into Ph.D. programs in business.
- The number of US citizens was low, compared to non-US citizens. Therefore, we suggest encouraging both US men and women to work toward their degrees.
- Since only about eight percent of Ph.D. candidates are over 40 years of age, there is room to increase numbers from this age group. These are experienced professionals who may even have been adjunct teachers during their career.
- Increase the number of part-time Ph.D. programs to address the needs of working professionals. Currently only eleven schools in our survey stated that they have part-time programs. Of these eleven, only two have part-time executive doctoral programs. This additional programmatic offering would enhance career development of many executives who would like to transition into teaching. For example, in Washington, DC and in other parts of the country, many high-level federal and state government employees and military retire at relatively young ages. They are able to move to another career within normal working years, and can return to school before leaving government employ. Other senior-level private-sector employees have expressed a desire to receive Ph.D. degrees, but cannot afford to leave their full time positions to do so. In addition, this might be a profitable programmatic offering, as these mature students might be able to afford the degree on a part-time basis, as they look forward to their next career.
- Another solution may be to train high-level professionals/executives who are reaching the retirement age to be teachers and researchers, without requiring a Ph.D. This is the "bridge model" introduced by AACSB. Potentially, a model like the one used in some districts in Florida's K-12 systems could be extended and put in place. In Florida, school systems hire professionals who

are unhappy with their current jobs to attend intensive training to prepare them for teaching in classrooms. This program maybe applicable to people who have at least a graduate degree (MS, MBA, etc).

# Conclusions

The Ph.D. shortage has been long running, at least for several decades, and apparently not abating. Granted, shortages in different disciplines ebb and flow, as salaries and other factors help alleviate deficits over time. This paper accepts the findings of shortages as described in other research. The authors report their findings from surveys conducted on the issues cited by degree-granting schools. Several solutions are offered to alleviate the problem. Importantly, these solutions take pressure off of hiring schools that need good teachers, and also off the Ph.D.-granting schools that must afford these high-cost programs.

Nevertheless, this issue must be resolved in some acceptable manner. Accreditation sets limits on the use of adjuncts, as well as non-Ph.D.s teaching in our nation's college classrooms. As more and more current faculty retire, shortages are only going to get worse, especially in some disciplines. Degree-granting schools and academic departments must understand their roles in supplying the much needed final products trained in appropriate disciplines, methodologies, and research/teacher or teacher/researcher modes to satisfy a hungry market, particularly in some distressed fields, such as accounting. This discussion must continue until real actionable solutions are implemented. We challenge AACSB, Ph.D. granting universities, and hiring universities to consider our suggestions and to continue the dialogue as to necessary solutions to this problem.

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# Biography

**Sarah Bryant** is professor of finance at Shippensburg University in Pennsylvania. Prior to this position, she was as Dean of the College of Business Administration at Clarion University in May 2002. She has been instrumental in leading planning and change, as this AACSB International accredited college continues its tradition of academic quality and student-centered focus. Prior to this appointment, Dr. Bryant was Executive Director of MBA Programs and Senior Lecturer at City University of London, England. She has taught a variety of undergraduate and graduate courses in finance and economics, as well as conducted research in these areas.

**Maling Ebrahimpour** has a Ph.D. Degree in the field of Management Science and Operations Management from University of Nebraska-Lincoln. He is Dean and Professor of Management of the College of Business, University of South Florida Saint Petersburg. Professor Ebrahimpour has authored or co-authored over 60 articles that have been published in scientific journals and proceedings. Most of his work focuses on various issues of quality and process improvement in both for and not-for profit companies. Dr. Ebrahimpour has served on the editorial review board of several journals such as Journal of Quality Management (published by ASQ), Journal of Operations Management (published by APICS) and the International Journal of Production Research.