

came out just behind the United States and Canada as the country with the third-largest spread from entry- to top-level salaries. Thus, in absolute terms, South African academics can expect to grow their salaries more robustly over the course of their careers than those in Australia, New Zealand, Japan, the United Kingdom, Germany, or France. Meanwhile, when looking at salary progressions over time, an even larger number of developing countries outpace wealthier nations. China, South Africa, Malaysia, and Colombia all register salary increases of over 100 percent over the course of a career. Indeed, the data for China suggest the potential for academics to grow their salaries over 170 percent from entry- through top levels on the academic employment ladder, with salary increases for German and France hovering at just around 39 and 32 percent, respectively.

ACADEMIC SALARIES AND NATIONAL INCOME AVERAGES

Comparing faculty salaries to average per capita-income estimates indicates that the academic profession pays well in many parts of the developing world. In India, for example, average faculty salaries are a whopping 8.7 times greater than that country's average World Bank GDP monthly per capita estimate. On average, South African and Colombian academics make salaries 5.8 and 5.4 times greater, respectively, than their countries' GDP per capita figures. In contrast, more developed countries—like the United States, Australia, Japan, the United Kingdom, France, Germany, Canada, and New Zealand—present faculty incomes that are only 1.4 to 2.2 times above their country's GDP per capita-per month figures.

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POLICY IMPLICATIONS

These findings highlight different kinds of issues for the world's less-developed and more highly developed countries. The CIHE study indicates that faculty in at least some less-developed countries are not poorly compensated in comparison with their own national GDP per capita-income estimates. However, a global market for talent means that more competitive salary packages may be necessary to compete with overseas employment offers. If not, brain drain will continue to beleaguer many already struggling poorer nations.

Meanwhile, while it is true that faculty in “high human development” countries enjoy better salaries on average than their colleagues in other parts of the world, our GDP comparison exercise indicates that the academic salaries in more developed countries are not much higher than their average per capita-income estimates. In countries where an egalitarian approach to remuneration across society is an important cul-

tural norm, this trend may not be an issue. But in contexts in which academics may find themselves earning an “average” salary following many more years of schooling than the average citizen—or making far less than other professionals (for example, in the legal, medical, or high technology fields)—it may be difficult to retain top talent in higher education. Of course, this study does not compare faculty salaries with those of other professions, and more work in this area clearly needs to be done.

A RESEARCH AGENDA

Meaningful comparative analysis of faculty salaries requires more and better data on compensation and the application of interdisciplinary expertise to make good sense of the financial, economic, and contextual variables. At the same time, the development of an academic purchasing power parity tool—a “professor's basket of goods,” if such a thing could be crafted—might provide a much more relevant way to reflect how salaries relate to the needs, expenses, and lifestyles of the academics who receive them. Future research in this area needs to address the salary realities of growing numbers of part-time faculty; must compare income across academic disciplines; and should include a comparison to the salaries earned by other highly trained professionals within and across countries.

CONCLUSION

Both merit and interest are provided in understanding how faculty are compensated around the world. Universities and the highly qualified academics who staff them play a key role in helping nations achieve and maintain a competitive position in a global marketplace of economic activities and ideas. Given this simple reality, faculty salaries stand out as a subtle but important consideration in any national development conversation and in the race for international relevance. ■

Research Careers: Some Reflections from Europe

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In Europe, extension in the number of researchers and improvement of research quality are widely seen as necessary to cope with the challenges expressed by the terms

“knowledge society” and “knowledge economy.” In this framework, considerable attention is paid across Europe to the formative years of scholars—the career period between graduation from a university and the eventual appointment to a senior, supervisory position at a higher education or research institution.

A LIFELONG CAREER?

In Europe, as in other parts of the world, the percentage of young persons embarking on research activities after graduation substantially exceeds the percentage of persons still active

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in research before retirement.

A degree from an institution of higher education is usually viewed as the entry qualification for a career as a researcher. Thus, follow-up studies of graduates from higher education institutions can provide information about the proportion of those embarking on the first stage of a research career. The Careers after Higher Education: A European Research Study, a survey of 1994/95 graduates from 11 European countries and Japan about four years later, provides the best comparative database on this topic: 22 percent of graduates from higher education institutions in the 12 countries continued with further academic studies; 28 percent of all graduates were working as researchers four years after graduation; the percentage of researchers ranged from 23 percent (Netherlands) to 37 percent (Germany); 59 percent of all graduates in science and technology fields were working as researchers four years after graduation.

The German Microcensus provides relevant data on the percentage of higher education graduates professionally active in research at later stages of their careers: in 2004, 29 percent of the 35–39 age group, 27 percent of the 40–44 age group, 24 percent of the 45–49 age group, 20 percent of the 50–54 age group, 18 percent of the 55–59 age group, and 13 percent of the 60–64 age group. Among graduates in science and engineering fields, 53 percent are active in research of the 35–39 age group, but this proportion shrinks annually by about one percent to 25 percent in the 60–64 age group. Thus, the data reveal an amazingly regular process of decline in the proportion of researchers among the highly trained persons during the course of their professional career.

MOBILITY

Among researchers, mobility is thought to be increasing rapidly. Data regarding foreign researchers are often used to exam-

ine this hypothesis. Actually, Eurostat (Statistical Office of the European Communities) data suggest that 5.0 percent of the trained research personnel in the European Union in 2000 were foreigners. This ratio only increased to 5.3 percent in 2005. In Germany, for example, a more substantial increase is noted—from 5.1 to 6.4 percent—during the same period.

Data merely on foreigners, however, become less useful as more people become internationally mobile during various points in their lives. This trend was revealed in a study comparing the statistics of foreign students and of mobile students, the latter defined either by education prior to study or by the residence prior to study (Maria Kelo, Ulrich Teichler, and Bernd Wächter, eds. *Eurodata: Student Mobility in European Higher Education*. Bonn: Lemmons, 2006). This study showed, for example, that in 2003, (1) 8.5 percent of students in German higher education were foreigners who came to study, (2) 3.4 percent were foreign students already in Germany prior to study, and (3) 1.5 percent were mobile German students who returned to Germany for the purpose of study.

These three student mobility figures were somewhat higher in the United Kingdom (13.0%, 4.6%, and 0.6%) and even higher in Switzerland (14.1%, 5.3%, and 2.0%). The overall magnitude of mobility is not revealed through data at a certain point. Rather, a retrospective analysis is required to determine how many persons were mobile for a certain period (e.g., at a certain career stage). Again, more detailed data exist on the mobility of students than of researchers. Based on general student statistics, in 2003 the number of German students studying abroad represented about 3.5 percent of all German students. A survey undertaken of German students in Germany shortly before graduation, however, showed that 15 percent of them had spent a period studying in another country. This discrepancy can be explained in part by the fact that, for example, a student studying abroad one of the four years may be regis-

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tered once as a foreign student and three times as a home student. In addition, temporarily mobile students are not included in the regular student statistics of many countries.

A survey published in 2001 showed that about 10 percent of Germans being awarded a doctoral degree spent some time abroad within the subsequent 10 years. We have reasons to assume that this proportion has increased in recent years.

CAREER RISKS

Research careers are highly selective at higher education institutions. As a rule, only a small proportion of young scholars entering an academic career eventually will become senior aca-

demics (professors, in general), while most others will not remain as scholars in higher education. In many European countries, scholars not only run the risk of a small success rate but also have to spend many years on a short-term contract while most other professionals from the same age cohort already enjoy stable employment conditions. A study on academic careers in a number of European countries shows that employment conditions and career patterns for young academics vary substantially by country. However, short-term employment until about the age of 40 and high levels of selectivity are common in many countries

In some European countries, the situation of young academics is often deplored with the claim that the employment of young academics in the United States was far more favorable. For example, a further brain drain to the United States was anticipated by Germans if the employment conditions in Germany were not improved. A recent study, however, concluded that career conditions for young academics in Germany were not as unfavorable in comparison to the United States as public rumors suggest.

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ties are employed by their university at least on a part-time temporary contract, and doctoral candidates have better chances than US doctoral candidates to fund their doctoral work with the help of the university or fellowships. The period from a doctoral degree to a professorial position in Germany (8 years, on average, from age 33 to 41) is similar to the period from a doctoral degree to the appointment as associate professor in the United States (most likely 7 years, from age 33 to 40). More than 30 percent of academics with a doctoral degree employed at a German higher education institution have an indeterminate work contract, but less than 10 percent of US assistant professors have such a status. Salaries at German institutions of higher education at all levels are on average slightly higher than at US universities.

The study shows, in addition, that about one-tenth of graduates from German institutions of higher education will eventually be awarded a doctorate, and about one-tenth of those awarded a doctorate eventually will become a professor. In the United States as well, one of about 100 graduates will become a professor, but the levels of selection are different: one out of about 20 students will be awarded a PhD, while one-fifth of the PhD holders eventually will become associate or full professors. ■

The Crisis of the American Academic Workforce

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The former New York governor, Eliot Spitzer, declared the desire to improve public higher education by adding 2,000 new faculty members and creating an endowment of \$4 billion to make his state more competitive. Editorials in the *New York Times* and the *Boston Globe* agreed that higher education must be a priority for competitiveness. Nationwide, financial allocations to public higher education are up 7.5 percent, the greatest increase in a decade. The stakes are high in the knowledge economy, and higher education is central to winning. Colleges and universities train the next generation of bright entrepreneurs and scientists, generate the research that fuels the knowledge economy, and sustain local economic development.

Key to an improvement in so labor intensive an industry as higher education is its workforce: the professoriate. The American academic profession is, however, widely acknowledged to be in "critical"—and deteriorating—condition. The problem is in part demographic. The average professor is now over 50 years of age and nearly one in five over 60. Perhaps half will be retiring in the coming decade. Many disciplines, especially in ones related to science and technology, suffer a dearth of new PhDs to fill the ranks of those who will retire or the new positions that might be added.

Another problem concerns remuneration. Academic salaries, on average, are not competitive with comparable jobs outside higher education. While the "best and the brightest" have never been lured to academe by money alone, salaries must be adequate to support a middle-class lifestyle. While a small percentage of senior professors at top universities receive six-figure salaries, the average professor earns below \$70,000—on a par with newly graduating nurses. Salaries at the top institutions, especially the prestigious private universities, have expanded much more rapidly than those at the public colleges and universities, which 80 percent of American students attend. Even institutions like Berkeley and Wisconsin worry that they can no longer compete with the best private universities.

Many experts feel qualms about the future attractiveness of the profession. Some concerns involve a dwindling supply of qualified PhDs, the high dropout rates in doctoral programs, and lengthening time-to-degree. The Harvard-based Collaborative on Academic Careers in Higher Education sees a risk in the attrition among faculty who actually enter the aca-