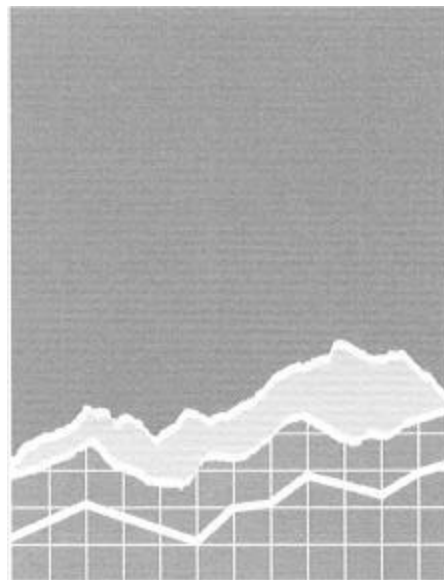


A Success Index for an Academic Internship Course in Economics

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Abstract

Many students understand that majoring in economics will give them access to numerous entry level careers. Upon graduating, however, they may have a great deal of uncertainty about career direction without the information and skills necessary to make the successful transition from classrooms to employment. This may be due to a gap between university professors' views of appropriate preparation of graduating students and the stated need for preparatory skills that managers of multinational companies require when hiring recent university graduates. To address this gap, the Economics Department at San Diego State University offers an Internship course that is integrated as an academic program within the major's curriculum. The intent is to provide job experiences that allow economics majors to apply theoretical concepts in the global workplace. In operation for 17 years, the internship program has enrolled over 2,700 students.

In this paper, we analyze data obtained from student interns to estimate the success of professional internships before graduation at SDSU. While returns from students' general work experience before graduation have been identified in wage estimation models, the type of work experience has not been investigated, nor have other benefits that students experience when internships are a part of their education. To analyze the benefits of internships, we develop a Success Index that incorporates seventeen variables addressing programmatic goals. Within our sample of students completing internships, we find that economics majors achieve half of these success indicators, on average. The success index is positively associated with hours worked, spring semester enrollment, high tech job descriptions, and experience in non-governmental organizations. In addition, we discover that adding skills to the bundle acquired through an internship leads to a higher probability of a job offer.

I. Introduction

Nationwide, academic institutions are being asked to provide assessment evidence of the learning outcomes achieved by students graduating in all disciplines. While faculty members recognize that student learning occurs both within and outside the classroom, determining which learning outcomes are relevant and then measuring them requires the academic community to look at learning modes beyond traditional tests and classroom assignments. Internships have been suggested as a means to help students open intellectual avenues in their major fields (Boyer Commission 1998). The College Placement Council, in asking about the need for a global workforce responding to new technologies and international firms' competitiveness, has suggested that internships can make students more marketable and better prepared for employment (Bikson 1996). Yet, despite the potential benefit that students can and believe they do receive from taking an internship course, experiential learning methods have traditionally been undervalued by academia. Part of the reason for this is the limited amount of research that has gone into studying the effectiveness of internship programs. Most of the evidence about the success of an internship is anecdotal, in the form of case studies and testimonials.

In this paper, we posit that student interns gain not only valuable work experience, especially in skills areas neglected by traditional academic institutions -- but internships also provide students opportunities to apply classroom theories in real world settings. In addition, students benefit from networking opportunities, developing invaluable contacts through completing internships off-campus. At the same time, supervising companies, government offices, and non-profit organizations benefit from low- or no-cost student workers who contribute fresh ideas and enthusiasm.

Using data taken from student interns' reports written upon completion of an internship course offered in the Economics Department at San Diego State University (SDSU), we develop a Success Index to assess seventeen factors contributing to the interns' performance. The factors included in the index are based upon the results of a national study undertaken by the RAND Institute in the mid-1990's (Bikson and Law 1994) that investigated multinational corporations' preferences for entry level employees recently completing undergraduate university degrees. Six human resource categories

were found to be consistently valued: cognitive, social and personal skills (such as decision-making ability and communication skills), on-the-job training, students' academic knowledge of their major field (defined as "domain knowledge"), and cross-cultural/foreign language expertise.

The Success Index developed in this paper investigates whether student internships enhance traditional classroom education by developing 15 factors delineated from the six categories of the RAND study. Also, we have added two additional outcomes to further determine if internships are successful at bridging the gap between classrooms and careers: enhanced computer skills (indicated as desirable by employers of our interns), and the offer of a full-time job resulting from the internship, a valued outcome to many students completing their internships with graduation on the horizon.

The section which follows presents a review of the literature on internships and a discussion of the results delineated in the RAND report that provide the motivation for our study. In Section III, we describe the objectives and operations of SDSU's internship course for students majoring in economics and international business. Data and descriptive statistics are presented in Section IV. In Section V, the empirical specifications and results are provided, followed by caveats and conclusions.

II. Background on Internships and Past Research

The merits of student internships in business education have been noted in isolated instances. Johnson (1977) found that students in the field of insurance/risk reported that internships were "worthwhile" learning experiences. A study by Hite and Bellizzi (1986) analyzed student expectations of internships by questioning 441 college marketing students about various aspects of their programs, revealing that the students did view internships as valuable learning experiences. Another study by Cannon and Arnold (1998), in which 164 marketing internship students were questioned, revealed that on a scale where 1 indicates strong agreement and 5 indicates strong disagreement, the statement that "the internship is a valuable learning experience to supplement college coursework" received a rating of 1.47. The statement that the student would expect an internship to lead to a permanent job offer later received a score of 2.18, and a rating of

1.78 was given to the statement that an internship would be more valuable than a case-based course.

In an alumni survey of former international business interns, Lange et al (1992) reported that 20% of respondents were working at the same company where they interned as students. In a separate report, Davis and Mello (2003) extolled the importance of personal growth through international internships for science/technical or liberal arts majors, but no mention was made of internships for economics or business majors. While returns from work experience before graduation have been identified in wage estimation models (Light 2001), the type of work experience has not been investigated, nor have other benefits that students experience when internships are a part of their education.

In a seminal study at the RAND Institute, Bikson & Law (1995) explore the ways in which college programs prepare undergraduate students for success upon entering the global corporate arena as new employees. Case studies are reported for sixteen corporations and sixteen academic institutions in the Los Angeles, New York, Chicago, and Houston/Dallas areas. Over 350 representatives, evenly divided between corporate and academic sites, were asked questions about how well academic institutions are preparing students to meet the human resources needs of multinational firms competing in the expanding global economy. The study results provide rankings of the factors that contribute to a successful work performance for freshly minted university graduates.

The ranked order of 6 major categories in the RAND results was similar for both corporate and academic respondents. Cognitive skills, such as problem-solving ability and decision-making skills, were rated as the most important factor in success, ranked first by both corporate representatives and academics. Next most important were social skills, such as working well in teams and communication skills, followed by personal traits such as innovativeness. Previous work experience was ranked next most important. The factor ranked fifth by corporate officials and academics was “domain knowledge,” defined as the recent graduate’s knowledge in his/her academic major. However, domain knowledge was rated less important by corporate respondents than by academics.

The sixth category, cross-cultural skills and competency in another language, was ranked as important, but less so than the top five. While both corporate and academic officials nation-wide rated recent undergraduates' cognitive-social-personal skills and prior work experience significantly ahead of classroom knowledge of academic subject matter, with additional value assigned to cross-cultural knowledge and language expertise, professors in the RAND report cited limited fiscal resources and an already heavy set of academic curriculum requirements as major impediments to incorporating skills development, work experience, and cross-cultural/language ability within current classrooms at American universities. The consequence is that "corporate representatives do not believe that colleges focus on developing these skills and qualities" (p. x).

All respondents agreed that no specific coursework at university level was being offered to develop these needed abilities. For universities to adequately instruct students in these areas within the classroom would mean significant changes in curriculum, course design, and teaching and assessment methods. The RAND report does suggest a way for students to acquire these skills before graduating: *by participating in internships and other forms of experiential learning*. Internships represent a promising solution to filling the gaps left by a traditional classroom education and helping to smooth the transition from the academic to the corporate world.

The RAND Report notes that multinational corporations seek job candidates who have successfully demonstrated knowledge and on-the-job skills in their specific career field. The report states: "corporate representatives do not believe that colleges encourage students to gain work experience relevant to their professional goals" and they believe that "faculty for the most part are likely to regard work while completing a baccalaureate degree as a necessary evil rather than a learning and developmental opportunity" (p.24).

In this project, we have the unique opportunity to analyze the outcomes of a large undergraduate internship program by assessing these indicators of success, as delineated in the RAND report's findings on the criteria of both academicians and potential employers. In other words, we can evaluate RAND's recommendation of "participating in internships" to fill the gaps left by traditional classroom approaches. At SDSU, the internship experiences of students over the past 17 years reveal the rich variation in

outcomes from this active learning environment. The goal of the discussion that follows is to show how specific objectives in an economics internship class can be assessed based upon the reported successes of students completing a variety of internship experiences.

III. San Diego State University's Model Internship Program

Academic internship opportunities in undergraduate economics and business departments are relatively rare. Of the 100 top-ranked American universities (non-doctoral programs), only 42% offer an internship course for economics students (*U.S. News and World Report* 2003) and only 3 universities have an internship requirement for economics majors. Of the top 50 doctorate-granting institutions, 36% have internship courses offered for credit, though 5 (Harvard and two University of California programs, for example) recommend that students majoring in economics complete internships as undergraduates. Without this component, students completing an undergraduate degree in economics are not entering the workforce¹ with the same practicum required of many professionals, such as in the fields of law, medicine, engineering, journalism and education.

At SDSU, the undergraduate economics program offers a one to two semester internship as part of its upper division course offerings. A faculty member directs the program, with staff assistance from student interns who complete their own internships in program administration, website management, and market research. Currently, 270 students enroll in the program annually, which serves two groups of student interns: 43% majoring in Economics and 56% in International Business (and a small number of other majors.) Over one thousand students in economics have successfully completed the internship class since it was established in 1987.

Students intern in a variety of firms and organizations, performing tasks in a wide range of fields including (but not limited to) marketing, business research and analysis, sales, finance/investments and accounting, high-tech services, human resources, and

¹ At San Diego State University, a large liberal arts public university, the majority of economics majors receive their terminal degree and enter the labor force. Hence, internships are conducted primarily in business and government offices. Students interested in graduate study complete internships within the department on research projects or with research organizations.

general administration. Every year, the Internship Program generates position listings from 85 private businesses annually, as well as 25 government offices, 20 business-networking associations, and a wide variety of non-governmental (non-profit) organizations. Interest from the business community arises from student research and program alumni who, in effect, provide free advertising of the benefits to organizations that employ interns from this university program. Companies contact SDSU's Internship Program after hearing of successful internships either from business contacts that have listed with us, or from our student alumni who become established business persons. Companies range in size from one-person entrepreneurs to multinational corporations. These have included such diverse industries as Sony (offering internships both in U.S. offices and offices in Japan), IBM, Sun Systems, Qualcomm, Mercedes-Benz, Kyocera, Deutsche Bank, Hewlett Packard, AT&T's International Division, Marriott Hotels, Merrill Lynch, Costco, Siemens, Paramount Pictures, Gallo Wine Co., and the Los Angeles Dodgers.

Course Objectives and Procedures: The internship course requires a minimum 150 hours of work that serve as the content for a three-credit course.² The student's primary responsibility is to secure a successful interview and complete the internship within a one-year period. This amount of time is considered to be roughly equivalent to the in-class and out-of-class study time that would be spent on a traditional three-unit business course.

The academic goal of the internship program is to educate students in the realm of career definition/planning, resume development, and networking. Confidence building and skills development, especially in terms of improved abilities that will be valuable for generating job offers, are potential outcomes for students who enroll in this course. Ultimately, many students determine a field they want to pursue after graduation, perhaps even being offered a full-time position. Another outcome is that networking opportunities lead to one or more job offers in a related field. Or, just as valuable a result occurs if a student intern eliminates a career field (s)he had wanted to explore but decides not to continue after the internship experience.

² See Adler (2002), *The Complete Guide to Internships* and *The Program Manager's Guide to Internships* for a detailed discussion of course requirements and operations.

The majority of internships are unpaid. The economics faculty member directing the program believes that the experience garnered in the internship far surpasses the value of a salary earned during the internship. The time commitment is not significantly greater than that required in a traditional senior level course.

The unique nature of the internship program for economics students is that the economics department considers it to be an academic part of the curriculum in the major. While most students in business or liberal arts must rely on a campus-wide career services center for employment direction, economics students at SDSU work with a professor in their own discipline to focus on field-specific positions made available exclusively through program contacts with the regional business community and government agencies, and select non-governmental organizations. In addition, the benefit of receiving course credit for completing the internship provides compensation to students for the opportunity cost of time. Without this incentive, many students would not choose to do an internship.

The Perfect Match: One of the questions posed most frequently by new participants in the internship course is: "How does an academic program place these numbers of students in internship positions that match each student's needs with the company's needs?" The answer speaks to the nature of an academic program, as opposed to an employment agency or a career service office. The program's mission is to educate students about the nature of one or more potential careers and to develop career-specific skills, but the program does not place interns in jobs. The professor's role is to guide students in exploring the possibilities of those careers, and inspire students to acquire experiences that will further the wide variety of individual goals regarding those careers after graduation. The key to successful internships is reliance on a self-selection process that occurs between the student and the company supervisor. Each party has a vested interest in making the best possible choice about the match between a student intern and a company where success is likely.

The internet is a valuable tool for creating potential matches. The website for the course (ibintern.sdsu.edu) lists company details for firms seeking interns. This position list can be accessed on-line by both students and companies with passwords. Furthermore, students are required to create a one-page résumé on the internship's

website that can be accessed on-line by companies seeking interns with specific qualifications.

Maintaining a detailed, user-friendly interactive website for the internship course is critical for providing on-going information updates and for enhancing participants' ability to interact as a class.³ The nature of the internship course is that students are required to complete course requirements off-campus. A necessary consequence is the lack of weekly interaction with their professor and other students in the class. Furthermore, creating the transition between the classroom and the world of work is an outcome that is not commonly shared by most academic courses that end after one semester. For these reasons, the professor provides year-round support to students via office hours and Internet contacts -- email and on-line discussions -- so that students' and employers' specific issues can be addressed or can be shared with other program participants.

Before beginning an internship, each intern submits personal demographic information, the job description of the internship (s)he will be completing, and background information about the organization where (s)he will be interning. Upon completion of the internship, every student is required to write a 10-page essay detailing what (s)he learned and accomplished. In the following section, we describe the data for this project that were gathered from the files of the Economics Department's Internship Program at SDSU. Our model for evaluating students' success in the internship course is based on analysis of the data taken from 261 randomly selected interns' reports.

³ There are 7,000 website visits annually.

IV. *The Model, Data and Descriptive Statistics*

The Success Index: The Success Index is defined as follows:

$$S = S(D, CSP_i, T, X, C, J)$$

where:

S = Success Index

D = Domain knowledge (academic courses) applied in a real world setting;

CSP = cognitive-social-personal skills; $i=1, 12$

T = training on-the-job (experience in the field);

X = cross-cultural training;

C = computer skills;

J = job offer from the sponsoring or related company.

The Data: Information on skills development and job offers is based on interns' self-reporting. The sample of randomly selected reports includes both economics students and international business students, since the internship course serves both majors. Reports were from students who completed internships during the seven-year period from 1997 to 2003. Descriptive statistics for the data are provided in Table A.1 of the Appendix.

We tallied 17 indicators of enhanced education as measures of success (see the list below). Each student's report was studied, and a count was kept of all of the education factors that the student acquired or refined while completing his or her internship. For the fifteen RAND factors, plus computer skill acquisition, each student was given a point for each of the skills acquired. Another point was assigned if the intern acquired a full-time position from the supervising company or a related company. Thus, an internship where the student acquired or refined only one success factor receives a rating of one point, and an internship that achieved all seventeen possible outcomes receives seventeen points. The higher the rating, the more skills acquired, and the more successful the internship.

The factors included in the Success Index are the following:

(1) Application of Academic Major (Domain Knowledge)

(2) – (5) Cognitive Skills:

- Problem-solving ability;
- Decision -making ability;
- Self-managing ability;

- “Knowing how to learn;”
- (6) – (9) Social Skills:
- Ability to work well in groups (teamwork);
 - Ability to negotiate/compromise;
 - Communication skills (written and oral);
 - Cooperation;
- (10) – (13) Personal Traits:
- An appreciation of others’ points of view (empathy);
 - Flexibility and adaptability;
 - Openness to new ideas;
 - Commitment to quality work;
- (14) On-the-Job Training:
- (15) Cross-Cultural Experience (also, using a second language):
- (16) Computer Skills:
- (17) Job Offer: Offered full-time employment at the internship site or through a networking opportunity.

Descriptive Statistics: Summary statistics for the 17 variables in the Success Index are provided in the Table A.2 of the Appendix. As previously stated, the success of the internship in terms of acquired skills may be related to the student’s characteristics, the type of internship tasks (e.g., marketing versus high tech), and the type of supervising office. For the student, we have data on the following characteristics: the gender of the student, his /her Grade Point Average, the number of months remaining to graduation (which is used as a proxy for grade level) and a series of employer evaluated personal characteristics (which are a proxy both for ability and enthusiasm): the student’s level of initiative, dependability, judgment and quality of work. For the firm, we know the type of firm [for-profit, government agency, or non-governmental agency (NGO)] and the location of the firm (San Diego County, rest of California, rest of the United States, Mexico, or any other country). Lastly, for the type of position, we have information on the semester that the internship was completed (Fall, Spring, or Summer), the number of hours that the student worked per week (all students are required to complete 150 hours of work to receive credit, though hours worked per week are up to the individual), the number of weeks worked, and the year that the internship was completed (to control for exogenous conditions in the economy and labor market).

Figure 1 shows the Success Index for 261 students in the 7-year sample. Of these, 52% are students who majored in economics. For the 17 factors in the index, the average

measure for economics interns is 8.32 – that is, on average about half of the possible successful outcomes are present for economics students in sample. The “bundle” of successful outcomes can be analyzed by looking at internship characteristics.

Table 1 presents the average success index by job, student, and internship characteristics. While most tabulations indicate that students received 8-10 successful outcomes on average, there is some variation worth noting. When analyzing success by location of the internship, it appears that internships in other parts of the U.S. are about as successful as those completed in the vicinity of campus, but internships abroad are more successful than those in San Diego. Table 1 also shows that most occupations exhibit a Success measure of near 9, though High Tech jobs exhibit more successful factors. Across industries (For Profit, Non-Profit, and Government), the Success Index is greatest for non-profit organizations, followed by government agencies. When choosing a time of year, it is important to note that students achieve over 8 success indicators in any semester in which the internship is completed, though success in the spring and summer sessions is slightly greater.

The results in Table 2 show the percentage of students whose skills were developed in various locations, occupations, and industries. Looking at the results for the 4 cognitive skills (ranked first by both corporations and academics in the RAND report), problem-solving ability is the most developed in internships abroad, and in high tech positions or those in finance and accounting, or with government agencies. Decision-making skills are developed in few positions except those with high tech job descriptions. Ability to self-manage is developed more in American firms, rather than abroad, and is especially developed in high tech positions or in NGO’s. The ability to learn is also enhanced more in the U.S. internships, and for about half of the interns in most occupations and industries.

Among the social skills (ranked second in the RAND report,) developing communication skills is a very successful outcome that results from internship experiences. Learning effective communication through internships occurs in 75-80% of occupations and industries – most strongly in high tech job descriptions. Negotiation and compromise is a learned skill in 1/3 or less of the internships, occurring least often abroad or in NGO’s. Developing the skills of teamwork and cooperation occurs in about 1/3 of

internships, most often in high tech jobs. Teamwork is also developed in 50% or more during internships in marketing, program administration, and NGO's.

Among the reported personal traits in Table 2, the ability to empathize and openness to new ideas are skills developed in 40-50% of internships across most job descriptions, though much less so in finance/investments and internships with government agencies. Flexibility/adaptability are enhanced for about half the students for all internships except in government agencies. Again, about half the interns learn the importance of commitment to quality while working at their internship sites, especially in the more technical fields like accounting, finance, and high tech jobs.

Finally, on-the-job training and computer skills are acquired by most interns across occupations, locations and industries. Cross-cultural skills are predictably developed during internships abroad, and are more industry-specific to trade or NGO's.

The vast majority of economics majors enhance their communication skills (83%) and computer skills (84%), with more than half of them attaining better self-management skills, flexibility/adaptability, and an enhanced ability to learn. Of note is the fact that a high percentage of economics interns (74%) report valuable on-the-job training, leading to 39% of them receiving job offers as a direct result of their internships. Economics majors do not tend to acquire cross-cultural skills nor do they enhance second language ability, for the most part, while international business majors find internships that enhance these cross-cultural aspects of their education. This factor may explain the lower Success Index reported by interns in economics – though economics majors report a slightly higher number of job offers.

Both majors report a high level of enhanced “domain knowledge,” the application of classroom theories on the job. These results are true across all occupations and industries. Hence, internships serve to create a transition between university classrooms and the world of work, as reported by this sample of students after completing SDSU's internship course.

V. *Empirical Specifications and Results*

In Table 3, the results of regressing student characteristics, job type, and internship characteristics on the Success index are shown. The specification is as follows:

$$\begin{aligned} \text{Success}_i = & \beta_0 + \beta_1 \text{GPA}_i + \beta_2 \text{Female}_i + \beta_3 \text{IBMaj}_i + \beta_4 \text{Abroad}_i + \dots \\ & + \beta_5 \text{Post-2001}_i + \beta_6 \text{Spring}_i + \beta_7 \text{Summer}_i + \beta_8 \text{Hours}_i + \dots \\ & + \beta_9 \text{Hours}^2_i + \beta_{10} \text{HiTech}_i + \beta_{11} \text{NGO}_i + \beta_{12} \text{Govt}_i + \varepsilon_i \end{aligned}$$

For 261 observations, neither the students' grade point average nor gender are significant, which implies that in our sample over the past 7 years, interns' success is not dependent upon their grades in other courses or their gender. International Business majors have a slightly higher level of success attainment (by about 1 extra skill), possibly due to their consistently enhanced cross-cultural experiences while participating in internships. The coefficient on internships abroad is not significant.

The results indicate that more success occurs for internships in the Spring or Summer semesters. This is possibly because more students are graduating at the end of the internship and hence are more seriously motivated to succeed in order to enter the full-time job market. Success also appears to increase when the number of hours per week increases, but at a diminishing rate. This might occur because students who go to their internships only a few hours per week may not be incorporated into the office as well as those who are at work more frequently.

Success is greater for internships before 2002, indicating perhaps that labor market changes occurred in the most recent years (post 9-11). The greatest effect on success is working at an internship with high tech tasks. Among industries, internships with non-governmental organizations have a positive effect on acquiring the most success factors, perhaps due to the fact that many NGO's in SDSU's program are networking associations such as the Chamber of Commerce where students meet a large number of potential employers. Internships in government agencies also raised the skill level by a smaller amount. However, in all cases, the impact on the success index is a marginal improvement of less than 2, which implies that:

- many different student interns of both genders, and not only those with high grades, receive skills and/or job offers resulting from internships;

- numerous types of job descriptions result in learning several skills and/or receiving a job offer, though high tech duties result in more successful outcomes;
- internships can be conducted according to any weekly schedule, though small skills gains can be made by increasing the number of hours worked per week;
- internships during any semester have many successful outcomes, though Spring semester is somewhat more successful;
- exogenous effects in the economy over time can have small effects on the level of success;
- many enhanced skills and/or job offers result from internships across different industry sectors and geographical locations, including internships in other countries.

Finally, in Table 4 we provide results of a probit model of the probability of receiving a job offer as a function of the number of skills (out of 16 possible) enhanced during the internship experience. The specification is as follows:

$$Prob (Job_i = 1) = \Phi (\beta_0 + \beta_1 \text{NumberofSkills}_i + \varepsilon_i)$$

where Φ denotes the cumulative standard normal distribution.

As shown by the positive and significant coefficient on the skills variable, the development of a larger bundle of skills by undergraduates who complete an internship in SDSU's program leads to a higher probability of a job offer.⁴ For each additional skill added to the bundle, the marginal effect is a 3% increase in the likelihood of receiving an offer. While it would be preferable to have data on salary effects, this result does provide some evidence that internships are enhancing the students' skills that lead to employment after graduation.

⁴ Note: for the probit analysis, we have limited the sample to those who have completed an internship in the U.S., since it is typically not possible for an American student to continue working abroad.

VI. Caveats and Conclusions

Based on results drawn from a 7-year sample of San Diego State University interns, we find that on average half of the 17 success indicators described in Bikson and Law's RAND report (1994) can be achieved by completing SDSU's internship course. The success index is enhanced with increased hours worked per week, high tech duties, experience in the non-profit sector, and spring semester enrollment. In addition, we discover that adding skills to the bundle acquired through an internship leads to a greater likelihood of a job offer being made to student interns. This result is consistent with the RAND report's finding that necessary skills acquisition leads to successful job searches for graduates from American universities.

Our assessment of outcomes from the internship course at SDSU includes only students who have completed an internship, which is not a requirement for all students graduating in the economics major. A more complete analysis would include information on the 17 possible outcomes for all students, but study limitations did not permit this more comprehensive approach. Likewise, alumni data are not available, which would provide further evidence. However, given these limitations, analysis of the reported experiences from the sample of students completing the internship course over a 7-year period supports the conclusion that internships for economics students provide successful learning outcomes.

Other professional schools, like the medical-legal-education fields, would not consider sending students into their professional arenas without having first completed internships in the field. Yet, economics departments have largely ignored this critical experiential dimension of professional education, and the business community is very cognizant of it. Our findings indicate that an internship course for economics majors can meet educational goals and generate on-the-job training and job offers for recent graduates. Furthermore, we present a means of assessing the program's success at attaining an academic department's objectives for educating its majors.

Bikson and Law (1994) point out the disconnect between the need for internship experience and academia's response. One reason is the resource commitment required at a time of tightening the university's fiscal belt. The discussion in this paper shows how a large number of students can be aided in making the transition from the classroom to the

global workforce by pursuing various internship experiences within an academic department and without excessive resource commitments. To meet the needs of many different economics students, a rich variety of internships in many locations, of many lengths, and in varied types of companies and job descriptions can generate successful outcomes, one of which may be a job offer.

Enhanced knowledge within the specific major is an outcome highly valued by both academic advisors and employers of university undergraduates – hence, another important result of our research is that internships provide a means for student interns to apply classroom theories in real world situations while training on-the job. These results provide evidence that internships for economics students can result in success as measured by a bundle of outcomes that enhance and enrich the academic experience.

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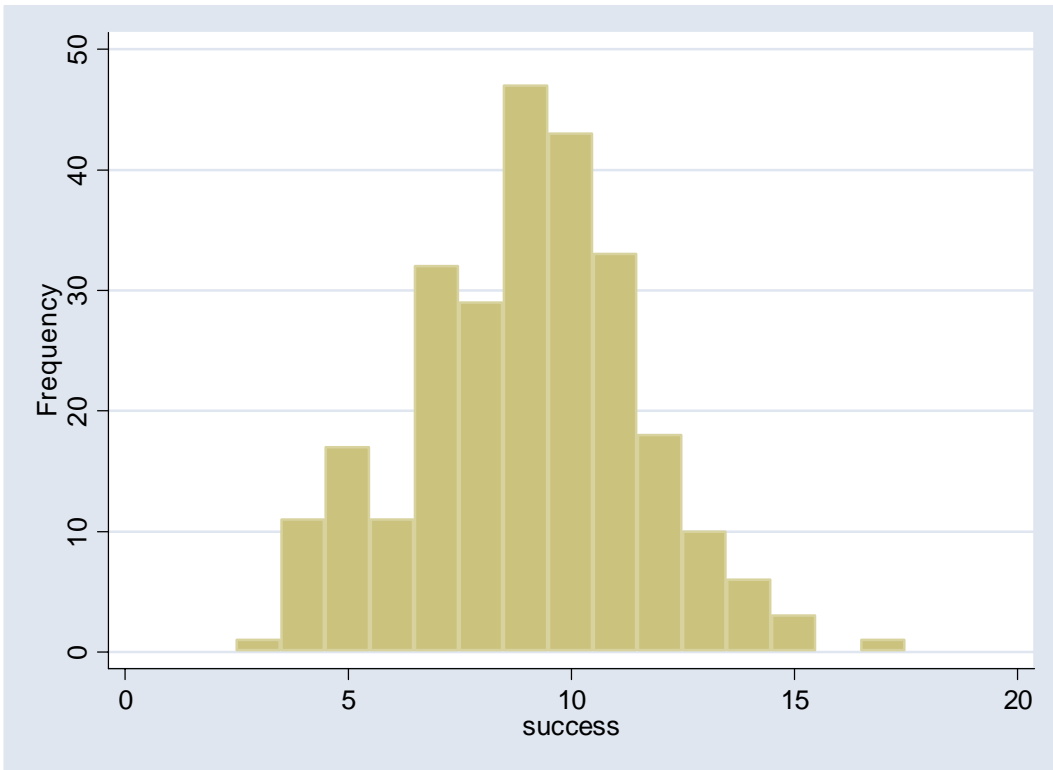


Figure 1. Frequency of Success^a

^aSample of 261 students in the economics major and international business major, 1997 – 2003.

Table 1

Success by Job, Student, and Internship Characteristics

Variable	Success Index	Standard Deviation
<i>Major</i>		
Economics	8.320	2.4038
International Business	9.812	2.4351
<i>Location of Internship</i>		
San Diego County	8.910	2.4856
Other California	8.177	2.5553
Other U.S.	9.000	2.5495
Mexico	10.250	1.4848
Other Abroad	10.000	2.9368
<i>Semester</i>		
Spring	9.491	2.3104
Fall	8.221	2.3821
Summer	9.071	2.7056
<i>Occupations</i>		
Marketing	9.050	2.6453
Sales	9.067	2.6578
Trade	9.676	1.9868
Finance	7.978	1.9008
Accounting	8.905	3.1766
Program Administration	10.056	2.7250
Human Resources	8.857	2.7695
General Business	8.909	2.7930
Hi-Tech Operations	10.850	3.0997
<i>Industries</i>		
For-Profit	8.837	2.5139
Non-Govt. Organization	10.065	2.2794
Government Agency	9.227	2.6355
Number of Observations	261	

Table 2
Attainment of Specific Skills by Job and Internship Characteristics
(as a percent)

Variable	Application of Domain Knowledge	Problem-Solving	Decision-Making	Self-Managing	Ability to Learn	Team-Work	Negotiation Compromise	Communication	Cooperation
OVERALL	0.935	0.316	0.256	0.603	0.485	0.389	0.248	0.809	0.347
<i>Major</i>									
Economics	0.929	0.281	0.266	0.586	0.508	0.283	0.242	0.828	0.406
International Business	0.949	0.350	0.248	0.624	0.487	0.402	0.256	0.778	0.274
<i>Location of Internship</i>									
San Diego	0.929	0.310	0.252	0.633	0.486	0.395	0.252	0.819	0.348
Other CA	0.941	0.353	0.176	0.529	0.529	0.294	0.118	0.765	0.294
Other US	1.000	0.400	0.200	0.600	0.600	0.000	0.400	1.000	0.400
Mexico	1.000	0.167	0.333	0.500	0.500	0.333	0.500	0.750	0.333
Other Abroad	0.941	0.471	0.353	0.412	0.353	0.529	0.118	0.706	0.353
<i>Occupations</i>									
Marketing	0.917	0.283	0.283	0.600	0.500	0.500	0.233	0.767	0.350
Sales	1.000	0.311	0.133	0.556	0.556	0.378	0.222	0.867	0.333
Trade	0.892	0.297	0.162	0.649	0.486	0.297	0.351	0.757	0.351
Finance	0.933	0.133	0.289	0.667	0.489	0.311	0.222	0.867	0.311
Accounting	0.905	0.429	0.190	0.571	0.476	0.286	0.143	0.714	0.429
Program Administration	0.972	0.417	0.250	0.611	0.500	0.611	0.222	0.861	0.306
Human Resources	1.00	0.357	0.286	0.500	0.429	0.429	0.214	0.786	0.429
General Business	0.864	0.318	0.227	0.500	0.273	0.318	0.227	0.818	0.409
Hi-Tech	1.000	0.600	0.500	0.700	0.550	0.450	0.350	0.900	0.450
<i>Industries</i>									
For-Profit	0.928	0.297	0.254	0.565	0.478	0.364	0.268	0.809	0.349
Non-Govt. Org'n	0.968	0.387	0.258	0.871	0.543	0.581	0.097	0.806	0.258
Govt. Agency	0.955	0.409	0.273	0.591	0.455	0.364	0.273	0.818	0.455

Table 2 (Continued)
Attainment of Specific Skills by Job and Internship Characteristics
(as a percent)

Variable	Empathy	Flexibility/ Adaptability	Openness to New Ideas	Commitment to Quality Work	On-The- Job Training	Cross- Cultural	Computer	Foreign Language	Job Offer
OVERALL	0.395	0.580	0.385	0.492	0.790	0.367	0.859	0.393	0.363
<i>Major</i>									
Economics	0.339	0.570	0.367	0.477	0.742	0.063	0.844	0.094	0.391
International Business	0.462	0.564	0.393	0.521	0.855	0.684	0.872	0.744	0.350
<i>Location of Internship</i>									
San Diego	0.354	0.538	0.386	0.510	0.814	0.301	0.862	0.338	0.381
Other CA	0.294	0.824	0.353	0.471	0.529	0.235	0.882	0.176	0.412
Other US	0.600	0.800	0.000	0.400	0.800	0.600	0.600	0.400	0.200
Mexico	0.583	0.667	0.333	0.500	0.833	0.917	0.917	1.000	0.083
Other Abroad	0.765	0.706	0.529	0.294	0.706	0.824	0.824	0.824	0.094
<i>Occupations</i>									
Marketing	0.317	0.583	0.300	0.400	0.867	0.450	0.850	0.516	0.367
Sales	0.356	0.578	0.333	0.422	0.822	0.489	0.800	0.422	0.489
Trade	0.459	0.676	0.405	0.432	0.811	0.728	0.892	0.757	0.270
Finance	0.289	0.556	0.244	0.644	0.711	0.045	0.800	0.133	0.333
Accounting	0.286	0.571	0.476	0.667	0.762	0.238	0.905	0.381	0.476
Program Administration	0.457	0.611	0.389	0.500	0.861	0.583	0.889	0.583	0.444
Human Resources	0.500	0.571	0.429	0.429	0.929	0.214	0.857	0.286	0.214
General Business	0.545	0.500	0.454	0.545	0.834	0.500	0.864	.0500	0.182
Hi-Tech	0.450	0.650	0.600	0.500	0.900	0.400	1.000	0.350	0.500
<i>Industries</i>									
For-Profit	0.402	0.608	0.368	0.493	0.789	0.313	0.837	0.359	0.354
Non-Govt. Org'n	0.419	0.516	0.387	0.452	0.871	0.677	0.935	0.645	0.387
Govt. Agency	0.286	0.409	0.545	0.545	0.682	0.455	0.954	0.492	0.410

Table 3
Success Index Regression

Variable	Coefficient	Standard Error	T-Value
<i>Student Characteristics</i>			
GPA	0.1112	0.3966	0.28
Female	0.2715	0.3002	0.90
I.B. Major	1.1726***	0.3259	3.60
<i>Location</i>			
Abroad (Incl. Mexico)	0.1461	0.6113	0.24
<i>Year of Internship</i>			
Post-2001	-0.9118***	.2850	-3.20
<i>Semester</i>			
Spring	1.4221***	0.3370	4.22
Summer	0.5677	0.3517	1.61
<i>Work Schedule</i>			
Hours	0.1378**	0.0588	2.34
Hours ²	-0.0019*	0.0011	-1.79
<i>Occupation</i>			
Hi-Tech	1.7071***	0.5433	3.14
<i>Industry</i>			
Non-Govt. Org'n	1.2517***	0.4588	2.73
Government Agency	0.8913*	0.5309	1.68
Constant	5.5618***	1.3022	4.27

Number of Observations	261
R-Squared	0.2450
Adjusted R-Squared	0.2085

Note: *** Signifies statistically different from zero at the 1% level or better, **signifies statistically different from zero at the 5% level or better and *signifies statistically different from zero at the 10% level or better.

Table 4
 Probit of Probability of a Job Offer

Variable	Coefficient	Standard Error	Z
Skills	0.7561**	0.0359	2.11
Constant	-0.9534***	0.3193	-2.99

Marginal Effects

Variable	DY/DX	Standard Error	Z
Skills	0.0287**	0.0136	2.11

Number of Observations	232
Log-Likelihood	-151.7413
Pseudo R-Squared	0.0146

Note: *** Signifies statistically different from zero at the 1% level or better, **signifies statistically different from zero at the 5% level or better and *signifies statistically different from zero at the 10% level or better.

Appendix – Table A.1
Summary Statistics

Variable	Mean	Standard Deviation
Success Index	9.015	2.5203
<i>Student Characteristics</i>		
Economics major	.520	
GPA	2.985	0.3990
Female	0.435	0.4967
Month to Graduation	5.508	4.3132
<i>Location of Internship</i>		
San Diego County	0.802	0.3996
Other California	0.649	0.2468
Other U.S.	0.019	0.1371
Mexico	0.046	0.2095
Other Abroad	0.065	0.2468
<i>Year of Internship</i>		
1997	0.046	0.2095
1998	0.149	0.3566
1999	0.122	0.3281
2000	0.014	0.1066
2001	0.187	0.3907
2002	0.347	0.4770
2003	0.137	0.3449
Post-2001	0.485	0.5007
<i>Semester</i>		
Spring	0.405	0.4918
Fall	0.294	0.4564
Summer	0.322	0.4681

Appendix – Table A.1 (continued)
 Summary Statistics

Variable	Mean	Standard Deviation
<i>Work Schedule</i>		
Hours	20.132	9.9997
Hours ²	504.944	538.6005
Weeks	11.223	6.4223
Weeks ²	167.059	273.4471
<i>Occupations</i>		
Marketing	0.229	0.4210
Sales	0.171	0.3779
Trade	0.141	0.3489
Finance	0.172	0.3779
Accounting	0.080	0.2720
Program Administration	0.137	0.3449
Human Resources	0.053	0.2253
General Business	0.083	0.2779
Hi-Tech Operations	0.763	0.2660
<i>Industries</i>		
For-Profit	0.798	0.4025
Non-Govt. Office	0.118	0.3236
Government Agency	0.084	0.2779

Appendix – Table A.2
Summary Statistics – Individual Measures of Success

Variable	Mean	Standard Deviation
Job Offer	0.363	0.4817
Application of Domain Knowledge	0.935	0.2468
<i>Cognitive Skills</i>		
Problem Solving	0.317	0.4661
Decision Making	0.256	0.4371
Self-Managing	0.603	0.4902
Ability to Learn	0.485	0.5007
<i>Social Skills</i>		
Team Work	0.383	0.4885
Negotiation	0.248	0.4327
Communication	0.809	0.3937
Cooperation	0.347	0.4770
<i>Feedback from Employer</i>		
Empathy	0.395	0.4897
Flexibility/Adaptability	0.580	0.4945
Openness to New Ideas	0.385	0.4876
Commitment to Quality Work	0.492	0.5009
<i>Other Experiences</i>		
On-The-Job Training	0.790	0.4080
Cross-Cultural Experience	0.368	0.4831
Foreign Language Use	0.393	0.4894
Computer Skills	0.859	0.3489