

# AACSB International Accreditation And The Earnings Of College Graduates

Teresa Hutchins, Ramapo College of New Jersey, USA  
Alexandre Olbrecht, Ramapo College of New Jersey, USA

## ABSTRACT

*In this paper, data from the Baccalaureate & Beyond 93/97/03 survey is used to examine the link between college graduate earnings and the number of years a school has been accredited by AACSB International. We find that there is no monetary benefit to attending an institution of higher learning which has been accredited longer, which suggests that AACSB International applies its accrediting and re-accrediting standards in a consistent manner.*

**Keywords:** AACSB, wage, earnings

## I. INTRODUCTION

Signaling quality is especially important in markets with asymmetric information. Higher education is one of these markets. Third party rankings, such as U.S. News & World Report and The Princeton Review, have been used to signal academic excellence to prospective students, parents, employers and other economic agents. Increasingly, accreditation by discipline based entities has gained more prominence as a means of signaling quality. Rankings and accreditation status may be used by prospective students and their parents or guardians when deciding whether to apply to, or attend a particular institution. Employers may view these characteristics as a signal of quality or as a way to differentiate between graduates of different institutions when deciding whom to hire and/or how much to pay a particular individual. Trustee boards may even use these measures as a way to evaluate college presidents and their school's administrative and academic performances.

Overall, accreditation agencies set minimum standards and goals which each accredited school must maintain, as Pinkham (1955) first noted. The agency overseeing a particular accreditation is expected to be a neutral arbiter when deciding which schools have achieved and continued to maintain those minimum standards.

One such accrediting agency is The Association to Advance Collegiate Schools of Business International (AACSB) which has been accrediting both undergraduate and graduate programs in business and accounting since 1916. The standards set forth by this agency are meant to insure that schools achieving this accreditation have provided students with the skills necessary to enrich their lives and make meaningful contributions to corporate organizations (see the report by the AACSB International Task Force on Issues in Management Education, 2005). The organization also requires that faculty who teach business courses are qualified, by requiring instructors to possess the appropriate educational background and be active scholars or practitioners in the business discipline they teach. More recently, the agency has required schools to identify learning goals for their graduates, to devise ways to assess if these goals are met, and to make changes in their curriculum.

Essentially, AACSB suggests that graduates from an accredited program are more valuable to employers and are better prepared to make significant contributions in the business world. However, few empirical tests of these claims exist, partly due to the relative difficulty inherent in measuring these types of claims. Very often data is unavailable and controlling for exogenous factors are problematic. Of the handful of tests conducted, researchers have examined the pass rates on disciplinary exams, investigated post-graduate earnings, and conducted surveys of faculty as to "their thoughts" on the effects of accreditation (see Corcoran, 2006).

An early paper, which attempted to measure the link between accreditation and career, Marts et al. (1988), reported that accounting students who graduated from AACSB accredited business schools were more likely to pass the Certified Public Accounting exam than those which did not attend an accredited school. Their argument was that AACSB students would be better prepared and thus should have a higher pass rate on standardized exams.

The alternative approach prevalent in the literature is to compare the earnings of AACSB graduates with their non-accredited peers. Kim et al. (1996) was the first to try this methodology. Using a relatively small sample of 59 schools, they found that the average starting salaries of AACSB accounting graduates were higher than the earnings of accounting students who had not graduated from an AACSB school. Most recently, in a much more comprehensive study, Olbrecht and Yeaton (2008) detailed similar results. Using a college sample of over 200 schools from 1993 to 2003, they found that business degrees from AACSB accredited schools were positively correlated with earnings.<sup>1</sup> Further, these authors pointed out that the AACSB wage premium was most prevalent among schools that were not ranked in 1993, and the returns to this degree differed among the different tiers. This finding suggests that the effects of accreditation may not be homogenous among different institutions of higher learning.

There are numerous ways in which institutions of higher learning may be heterogeneous, many of which can be controlled for when estimating earnings regress. One way in which schools differ from each other is the number of years they have been accredited by AACSB. Intuitively, there exist several reasons why this indicator may be correlated to earnings.

A case can be made that there is a positive relationship between years of accreditation and earnings; thus, the longer a school has been accredited the higher the graduates' earnings. There may be a learning-by-doing effect. For example, the longer an accredited curriculum has been in place, the more efficient instructors of that school should be in its delivery. It may also be the case that newly accredited schools may only achieve the minimal qualifications set forth by the accrediting agency while schools that have been accredited longer may have had the opportunity to exceed those minimum qualifications, thus producing better graduates. In addition, there may be a learning curve on the part of employers, such that as the number of cumulative graduates increases, firms recognize the value of AACSB graduates and compensate them at a higher rate.

As a second hypothesis, a negative relationship between earnings and years of accreditation could exist. During its history AACSB has updated its criteria for achieving and maintaining accredited status by its members. Currently, each school goes through a review every five years where each institution must demonstrate that it meets all the current standards. If AACSB applies its standards more forcefully to schools attempting accreditation for the first time, one could expect the returns to accreditation to be higher for newly accredited schools. In this case, one would expect earnings to be negatively correlated to the number of years a school has been accredited.

Finally, it could also be the case that AACSB imposes the exact same criteria for its current members as it does for schools who are newly accredited. Should that be the case, there should be no statistical difference in wage premiums associated with AACSB degrees and the length of time the school has been accredited.

In this paper, our main contribution is to test whether there exists a statistical correlation between the earnings of college graduates from AACSB institutions and the length of time that the school has maintained its accredited status. The sample used consists of the records of 5,540 individuals who graduated in 1993 from 207 colleges and universities accredited by AACSB. We find no statistical correlation between earnings and the length of accreditation, holding all else constant. Our results suggest that AACSB International applies its standards evenly among all member schools. While we mention some theories as to why we may observe certain results, any

---

<sup>1</sup> Additionally, like Weisbrod and Karpoff (1968), Reed and Miller (1970), Wales (1973), Solman (1973, 1975), Solmon and Wachtel (1975), Wise (1975), Wachtel (1976), Griffin and Alexander (1978), and Morgan and Duncan (1979), Pascarella and Terenzini (1991), Behrman et al. (1996), Brewer and Ehrenberg (1996), Brewer et al. (1999), Dale and Krueger (2002), and Thomas (2000, 2003), Olbrecht and Yeaton (2008) found earnings to be positively correlated to various academic ranking measures.

statistical relationship does not necessarily imply causation, and thus our statistical inference cannot serve as a perfect test of any hypothesis.

The results described in this paper will be an important additional factor for prospective students and their parents or guardians to consider when choosing a school. Further, this will be additional information for administrators of higher learning institutions to consider when deciding whether or not to pursue accreditation of their business programs.

## II. DATA

In order to test whether the length of accreditation is statistically related to earnings, one requires a longitudinal survey that contains information on earnings, specific demographic and biographical details, and school specific characteristics. This paper uses the Baccalaureate & Beyond 93/97/03 (B&B hereafter) data set, which is administered by the National Center for Education Statistics. Its main purpose is to track the employment and educational attainments of a cohort of individuals who graduated from college in 1993. Respondents were initially included in the National Postsecondary Student Aid Survey, and, upon successful completion of their undergraduate degrees were included in the B&B. The original emphasis of this survey was to track individuals going into the teaching professions, but the survey is in no way limited to education majors. The survey collected financial and educational information on each participant in 1993, 1994, 1997 and 2003.

For this study, the survey is the best available data because it includes very specific information on a large number of graduates (5,540) from a wide range of institutions of higher learning accredited by AACSB (155 schools). This data was combined with a list of accredited schools and their year of accreditation which was obtained from AACSB. We focus on earnings ten years after graduation because a significant portion of observations attended graduate schools after their undergraduate programs, and thus earned no income in some of the intermittent years. Using earnings in 2003 allows estimation using the most inclusive sample possible.

The means and standard deviations of the main variables in our sample are illustrated in Table 1. For the sake of brevity the values for the occupation and college major categorical variables are not included, but are available upon request.

**Table 1: Variable Means and Standard Deviations**

<i>Variable</i>	<i>Mean</i>	<i>Std. Deviation</i>
Income in 2003	\$57,621.71	38,399.11
ACT or SAT Quartile	2.34	1.33
Age in 2003	34.69	4.75
Attended Best Ranked School	0.06	0.24
Attended Regional Best School	0.04	0.21
Attended Specialty School	0.00	0.04
Attended Tier Four School	0.13	0.34
Attended Tier One School	0.12	0.33
Attended Tier Three School	0.18	0.38
Attended Tier Two School	0.23	0.42
Earned Masters Degree	0.35	0.48
Earned Ph.D. or Professional Degree	0.13	0.34
GPA (4.0 scale)	2.95	0.90
Job has Medical Benefits	0.82	0.38
Live in Northeast	0.14	0.35
Live in South	0.38	0.49
Live in West	0.23	0.42
Married or living with partner	0.74	0.44
Number of job hours	43.73	12.67
Number of kids	1.00	1.13
Respondent is Caucasian	0.83	0.38
Respondent is male	0.45	0.50
Number of Observations	5,540	

As mentioned, we include 155 schools which have been accredited by AACSB in our data. On average, each school has been accredited for 34.4 years. However, the distribution of the number of years each school has been accredited varies greatly. We show graphical representations of the distribution in Figures 1 and 2. Overall, these two graphs suggest a relatively continuous distribution of schools earning accreditation over time.

Figure 1: Distribution of the number of Years of Accreditation

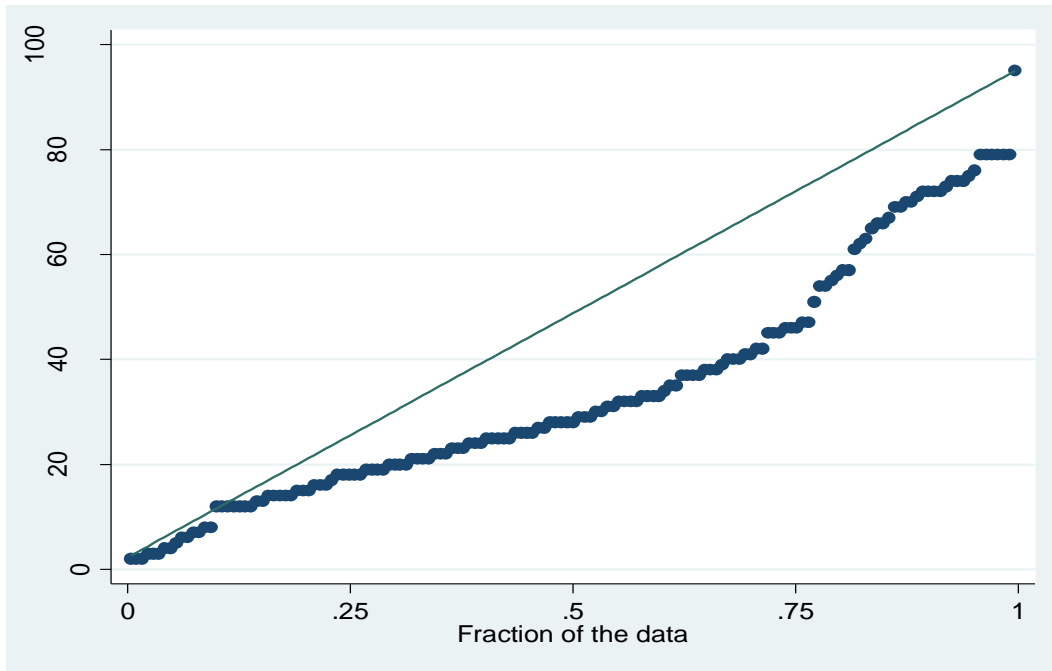
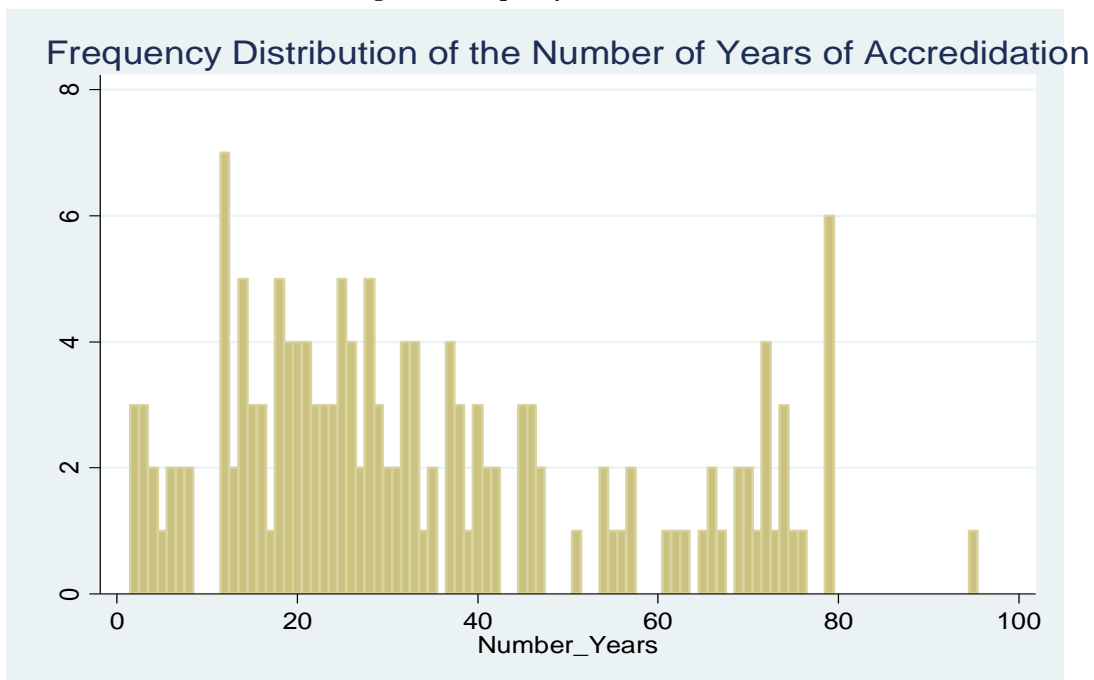


Figure 2: Frequency Distribution



### III. METHODOLOGY AND ECONOMETRIC RESULTS

In order to estimate the correlation between earnings and the number of years a school has been accredited, we need to estimate a version of Mincer's (YEAR) log linear earnings function which we define as:

$$\ln(\text{Wage}_{2003}) = \alpha + \beta_1 \text{AACSBY} + \beta_2 \text{STUDENT} + \beta_3 \text{OCCUPATION} + \varepsilon \quad (1)$$

where wage is the annual income from work in 2003, AACSBY is the number of years a graduate's school has been accredited by AACSB International, STUDENT is a vector of student characteristics, OCCUPATION is a vector of occupational variables,  $\beta_i$  is a vector of coefficients and the error term is assumed  $\varepsilon \sim N(0, \sigma^2)$ . Generally the first step is to estimate the function by ordinary least squares (OLS). Assuming OLS is the appropriate estimation methodology, a positive and significant coefficient on the AACSBY variable can be interpreted as a percentage wage premium for each additional year a graduate's school has been accredited, all else constant.

Estimation by OLS and the correct interpretation of the AACSBY coefficient assumes that one is able to properly control for the differences in student quality, a task which can be particularly tricky. The question is how to properly model these differences. In addition to the measurable characteristics of academic ability, like student's undergraduate GPA, test scores on SAT and ACT, and graduate training, there are a host of unobservable characteristics, such as a student's motivation and self-discipline that may affect earnings (for example, see Long, 1995, or Duncan and Dunifon, 1998). These variables are often difficult, but not impossible, to quantify in an earnings regression.

In general, economists use several approaches to deal with this issue (see Long, 1995), of which the most popular is to estimate the earnings function without attempting to control for these factors. However, this approach potentially introduces omitted variable bias and Long (1995) suggests several strategies to minimize this chance, though each approach is imperfect and dependent on the type of data available. In our particular case, the only suitable approach mentioned by Long (1995) is to introduce variables into the regression which may serve as a proxy for these unobservable student characteristics (these are unobservable because the longitudinal survey did not include these variables).

In our particular case, we introduce tier rankings measures by *U.S. News and World Report* to control for student heterogeneities (using the same data, Zhang, 1995, reports that various rankings measures are essentially interchangeable with each other when estimating these types of earnings regressions, thus selection of which rankings to use is a matter of personal preference). In addition to being the most widely used rankings by prospective students and parents, and the colleges and universities themselves, the construction of these rankings include, among other factors, student selectivity measures, retention rates, and graduate performance, all factors which one would expect to be positively correlated with earnings. Essentially, the rankings measures provide enough information to control for these unobservable characteristics in addition to controlling for the differences in the academic characteristics of the various schools.

In the survey provided by *U.S. News and World Report*, U.S. colleges and universities are divided into the categories of (1) the "Top 25 Schools" or best category, (2) schools in quartiles one through four, (3) regionally best schools, and (4) specialized schools. In this paper, dummy variables for each of the tiers and groups were created. Schools not ranked by the magazine are hereafter referred to as unranked.

For the select few undergraduate institutions located in Canada, the 1993 tier rankings provided by *Maclean's Magazine* were used. While the ranking criteria and scales used between the two magazines are slightly different (see Shale and Liu, 2002), in both cases they are the most appropriate and compatible measures available, given that we know of no survey which includes both Canadian and American schools.

To control for other known factors which are positively correlated with earnings, demographic information on sex, race, number of children, and marital or cohabitation status was included. Occupational categorical variables

were coded as they were collected in the survey. Additionally, information on average number of hours worked, job location (four census regions), and the existence of medical benefits were all included as control variables.

In order to differentiate the effect of graduating from an AACSB accredited school with a business degree, and graduating from an AACSB accredited school with any major, further adjustments in our methodology were made. Specifically, we estimate the regressions using the full sample (all individuals who graduated from AACSB accredited schools regardless of major) and a more limited sample, including only those individuals who graduated with a business or management degree.

The results are summarized in Table 2. When estimating the most simple forms of the models, the coefficient on the number of years of accreditation is marginally positive for both samples, suggesting that the longer a school has been accredited by AACSB, the greater a graduate’s earnings. However, given the relatively small magnitude of the coefficients, it is not clear how important this wage premium may be. Further, once the tier ranking of the schools is added, which is a proxy to capture both the motivation and ability of students and the quality of the school, the estimate for number of years of accreditation becomes insignificant, indicating that there is no return to being accredited longer. Overall, these results seem to support the hypothesis that AACSB International applies the same accreditation standards across all of its member schools.

The signs of the unreported variables were as expected. Like previous researchers, such as Zhang (2005), we found school rankings measures to be positively correlated with earnings. On average, men earned more than women, as do individuals with higher grades. Like Buchmuller and Valletta (1998), having health benefits at one’s current job was positively correlated with earnings. Earnings also increased with work hours, *ceteris paribus*.

**Table 2: Regression Results**

		Full Sample	Business and Management Majors Only
Number of Years Accredited (Model does not include ranks)	Estimate	0.00054	0.00181
	T-statistic	1.79	1.76
	Model R-square	0.36	0.41
Number of Years Accredited (Model includes ranks)	Estimate	-0.00002	0.00154
	T-statistic	-0.07	1.09
	Model R-square	0.37	0.41
Number of Observations		5,540	660

**IV. CONCLUSION**

Previous researchers have identified a strong and positive correlation between the earnings of college graduates and possessing a business school degree from an AACSB accredited program. However, some of that research also suggested that the returns to that type of degree are not homogenous. These findings raised the possibility that other factors, such as length of accreditation, could play a significant role in earnings disparities.

The estimates presented in this paper suggest there is no statistical correlation between the earnings of AACSB graduates ten years after graduation and the length of time their institution has been accredited. While statistical correlations do not necessarily imply causation, our results are consistent with the theory that AACSB International applies their standards for accreditation evenly among schools seeking this elite status for the first time or for the *n*th time.

These results are important for many constituencies. Prospective students and their parents or guardians do not need to consider the length of accreditation as a factor when choosing which school to attend or apply to. Administrators at institutions of higher learning, when deciding whether or not to pursue (or maintain) their status with AACSB, can expect that their school’s graduates will reap all the benefits of accreditation immediately.

The results presented in this paper are also important for AACSB International since the estimates suggest an equal application of accreditation standards for all member schools. There does not seem to be any statistical bias towards re-accreditation, as opposed to an initial accreditation. Since the role of a third-party accreditation agency is to serve as a neutral third party arbiter, any evidence suggesting a consistency in the economic returns to AACSB accreditation helps this organization maintain its neutral and fair-handed image, which Pinkham (1955) states is required for an accreditation agency.

#### **AUTHOR INFORMATION**

**Teresa D. Hutchins** is an Assistant Professor in Economics in the Anisfield School of Business. A Ph.D. graduate from the University of North Carolina Chapel Hill, she has been at Ramapo College for twenty years. Her research interests include American Economic History and the Economics of Higher Education.

**Alex Olbrecht** is an assistant professor of economics at the Anisfield School of Business at Ramapo College of New Jersey and is a research associate of the State University of New York at Binghamton. He earned Ph.D in Economics and International Finance, and M.S. in Applied Economics from the State University of New York at Binghamton. He earned his undergraduate degree in Business & Economics From Lehigh University. He resides in Yonkers, NY.

#### **REFERENCES**

1. AACSB International Task Force on Issues in Management Education. (2005.) *Why Management Education Matters: Its Impact on Individuals, Organizations, and Society*, Tampa, Florida.
2. Behrman, J.R., Rosenzweig, M.R., and Taubman, P. (1996.) College choice and wages: Estimates using data on female twins. *Review of Economics and Statistics* 78(4): 672-685.
3. Brewer, D., Eide, E., and Ehrenberg, R. (1999.) Does it pay to attend an elite private college? Cross cohort evidence on the effect of college type on earnings. *Journal of Human Resources* 34(1): 104-123.
4. Brewer, D., and Ehrenberg, R. (1996.) Does it pay to attend an elite private college? Evidence from the senior class of 1980. *Research in Labor Economics* 15: 239-272.
5. Buchmueller, T.C. and Valletta, R.G. (1999.) The Effect of Health Insurance on Married Female Labor Supply. *The Journal of Human Resources* 34: 42-70.
6. Corcoran, Charles (2006.) AACSB Accredited Business Programs: Differences and Similarities. *Journal of Business & Economics Research* 4(8): 41-48.
7. Dale, S. and Krueger, A. (2002.) Estimating the payoff to attending a more selective college: An application of selection on observables and unobservable. *Quarterly Journal of Economics* 117(4): 1491-1527.
8. Duncan, G. J., and Dunifon, R. (1998.) ‘Soft-Skills’ and Long-Run Labor Market Success. *Research in Labor Economics* 17: 123-149.
9. Griffin, L. and Alexander, K. (1978.) Schooling and socioeconomic attainments: High school and college influences. *American Journal of Sociology* 84(2): 319-347.
10. Heckman, J. J. (Jan. 1979.) Sample Selection Bias as a Specification Error. *Econometrica* 47(1): 153-161.
11. Kim, K., Rhim, J., Henderson, W., Bizal, N., and Pitman, G. (1996.) AACSB accreditation: A positive signal in accounting job markets. *Mid-Atlantic Journal of Business* 32(2): 123-134.
12. Long, J. (1995.) The Effects of Tastes and Motivation on Individual Income. *Industrial and Labor Relations Review* 48: 338-351.
13. *Maclean’s Magazine College Rankings*, Nov. 15, 1993.
14. Marts, J. R., Baker, J. D., and Garris, J. M. (1988.) Success on the CPA examination in AACSB accredited and non-accredited schools. *Accounting Educators’ Journal*. 1: 74-91.
15. Mincer, J. (1974.) *Schooling, Experience and Earnings*. New York: Princeton University Press.
16. Morgan, J. N., and Duncan, G. (1979.) College quality and earnings. *Research in Human Capital and Development* 1: 103-121.
17. Morse, R.J. and Flanigan, S. (2007.) How We Do the Rankings. *U.S. News and World Report America’s Best Colleges* 77-79.

18. National Center for Education Statistics (NCES) (1993.) Integrated Postsecondary Education Data System ‘Completions’ and ‘Consolidated’ surveys.
19. Pascarella, E.T. and Terenzini, P.T. (1991.) *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass.
20. Pinkham, F. O. (1955.) The Accreditation Problem. *Annals of the American Academy of Political and Social Science* 301: 65-74.
21. Reed, R., and Miller, H. (1970.) Some determinants of the variation in earnings for college men. *Journal of Human Resources* 2: 537-587.
22. Shale, D. and Liu, Y. (2002.) Ranking the Rankers of Universities: Canada’s Maclean’s Magazine versus U.S. News & World Report. Unpublished paper, University of Calgary.
23. Solman, L. (1975.) The definition of college quality and its impact on earnings. *Explorations in Economic Research* 2: 537-588.
24. Solmon, L. and Wachtel P. (1975.) The effect on income of type of college attended. *Sociology of Education* 48: 75-90.
25. Solman, L. (1973.) The definition and impact of college quality. In *Does College Matter?* (L. Solman and P. Taubman, eds.). New York: Academic Press, pp. 77-105.
26. Thomas, S. (2003.) Longer-term economic effects of college selectivity and control. *Research in Higher Education*: 44(3): 263-299.
27. Thomas, S. (2000.) Deferred costs and economic returns to college quality, major, and academic performance: An analysis of recent graduates in Baccalaureate & Beyond. *Research in Higher Education* 41(3): 281-313.
28. U.S. News & World Report (1993). *College Rankings 115* (13), Oct. 4.
29. Wachtel, P. (1976.) The effect on earnings of school and college investment expenditures. *Review of Economics and Statistics* 58: 326-331.
30. Wales, T. (1973.) The effects of college quality on earnings: Results from the NBER-Thorndike data. *Journal of Human Resources* 8(3): 306-317.
31. Weisbrod, B. and Karpoff, P. (1968.) Monetary returns to college education, students’ ability, and college quality. *Review of Economics and Statistics* 50: 491-497.
32. Willis, R. J., and Rosen, S. (1979.) Education and Self-Selection. *Journal of Political Economy* 87(5): S7-36.
33. Wise, D. (1975.) Academic achievement and job performance. *American Economics Review* 65(3): 350-366.
34. Zhang, L. (2005.) Do measures of college quality matter? The effect of college quality on graduates’ earnings. *The Review of Higher Education* 28: 571-596.