Economics Bulletin

Volume 33, Issue 1

Campus competition and co-ed allure: An institution-level analysis of collegiate dating markets

Franklin G. Mixon Jr.
Columbus State University

Steven B. Caudill
Rhodes College

Abstract

The current study examines the political economy of collegiate dating markets by employing institution-level data from the national colleges and universities included in U.S. News & World Report's Best Colleges 2012. This is a more comprehensive sample than has been used in previous studies and includes 250 colleges and universities across all regions of the United States. We also make use of female student attractiveness ratings from collegeprowler.com to assess the relationship between the extent of competition among for dates, as captured in the percentage of the student body accounted for by females, and the attractiveness of the female students involved in that competition. Results from OLS, two-stage least squares, ordered probit and simultaneous probit models all converge on the outcome wherein female student attractiveness increases as dating competition becomes more intense. Two of these models also suggest that the percent of a college's student body accounted for by female students does not depend on attractiveness.

The authors thank two anonymous referees and Stéphane Mussard for helpful comments on an earlier version of this study. Any remaining errors are our own.

Citation: Franklin G. Mixon Jr. and Steven B. Caudill, (2013) "Campus competition and co-ed allure: An institution-level analysis of collegiate dating markets", *Economics Bulletin*, Vol. 33 No. 1 pp. 442-453.

Contact: Franklin G. Mixon Jr. - mixon_franklin@columbusstate.edu, Steven B. Caudill - caudills@rhodes.edu.

Submitted: December 16, 2012. **Published:** February 21, 2013.

1. Introduction

The relatively new stream of research on the economics of beauty has produced some interesting results. One of the earliest studies in this stream (Hamermesh and Biddle, 1994) finds that above-average looking individuals earn wage premiums ranging from one to 13 percent, while their below-average looking counterparts suffer wage penalties ranging from one to 15 percent.[1] The study also finds that unattractive women exhibit lower participation rates in labor market activities than their attractive counterparts, while they marry men with less human capital than their attractive counterparts. Attractive men and women are also more likely to self-select occupations where their good looks will generate higher returns (Hamermesh and Biddle, 1994). This particular study was followed by Biddle and Hamermesh (1998), which provides statistical evidence indicating that better-looking law school graduates (in the 1970s) matriculated into private sector legal work, where their good looks are advantageous in garnering clientele, while their less attractive counterparts were more likely to opt for public sector legal work.[2] This finding is supported by Green, Mixon and Treviño (2005 and 2013), who provide a number of statistical estimations indicating that more-attractive university professors exhibit higher probabilities of choosing liberal arts colleges/universities over research-oriented colleges/universities than their less-attractive counterparts. As in Biddle and Hamermesh (1998), the working hypothesis in Green, et al. (2005 and 2013) is that teaching, where attractiveness is positively related to student ratings of teaching quality (see Hamermesh and Parker, 2005; Smith, 2005), has a greater return at liberal arts colleges/universities than at research-oriented academic institutions.

The work of Pfann, Biddle, Hamermesh and Bosman (2000) adds another element to the hypothesis. Using a sample of advertising firms, they find that firms employing attractive executives exhibit accelerated growth and garner greater revenues than, *ceteris paribus*, those hiring less-attractive executives. These results indicate that there is also a productivity element to attractiveness. However, as Pfann, et al. (2000) state, such productivity gains do not likely appear in the wages of good-looking agency managers.[3] The authors also reiterate the importance of attractiveness in service industries, philanthropic efforts, and voting. For example, Salter, Mixon and King (2012) find that in real estate markets, the beauty of both the listing and selling agent are positively related to transactions prices, and that a real estate agent's beauty is positively related to that agent's earnings per listing and earnings per sale. In terms of philanthropy, Price (2008) finds that, (1) depending on the race of the donor, a solicitor's attractiveness positively influences donations, and (2) blonde females raise significantly more funds than brunette females. In the latter case, the estimated return to a one standard deviation increase in attractiveness is, *ceteris paribus*, more than 82 percent greater for blonde females than brunette females (Price, 2008: 352). Lastly, Hamermesh (2006) uncovers a positive beauty effect in the election of economists to executive offices in the American Economic Association (AEA). AEA elections data from 1966 through 2004 – a period encompassing 312 candidacies

---

[1] Some estimates of the impact of attractiveness on wages for men and women are equivalent to that of an additional 1.5 years of schooling (Hamermesh and Biddle, 1994: 1,186). The general result here is supported in Hamermesh, Meng and Zhang (2002).

[2] In the latter case, one's client is the government (local, state, etc.) and its affiliated agencies (Biddle and Hamermesh, 1998).

[3] In the labor economics sense, it is likely, *ceteris paribus*, that (MRP – wage) is greater for unattractive managers than for attractive managers, at least given the results in Pfann, et al. (2000). For more on the relationship between attractiveness and other productivity-related characteristics such as confidence, effort, intelligence, oratory skills and organizational skills, see Mobius and Rosenblat (2006) and Salter, Mixon and King (2012).

for AEA executive positions – reveal that the probability of winning an election increases by 0.12 as a candidate's beauty rises from one standard deviation below the mean beauty to one standard deviation above it (Hamermesh, 2006: 406-409).[4]

In his recent review of the economics of beauty, Hamermesh (2011: 130) points out that "[m]ost of the interest in non-market exchange of beauty is in its role in two-person relationships." Hamermesh (2011: 132) adds, however, that while social psychologists "have long been interested in the determinants of dating preferences . . . [and] the role of looks in this exchange," economists are relatively new to this area of academic inquiry.[5] One recent political-economic study by Fisk (2008) of co-educational colleges in the U.S. South examines the relationship between the average attractiveness of female students and the percentage of the student body accounted for by female students.[6] Fisk's (2008) study is based on 2006 data from 30 southern colleges and universities whose student bodies consist of 47 percent to 85 percent female students. To assess female students' attractiveness at these institutions, students rated the Facebook photographs of 1,500 representative female students (an average of 50 students per institution) on a 1 to 10 scale (Hamermesh, 2011). The governing hypothesis is that on campuses where male students (female students) are relatively scarce (abundant), competition among female students for the relatively scarce males in campus (collegiate) dating markets leads to more attractive female students on campus.

Fisk (2008) finds that female students' attractiveness increases as the percentage of female students rises up to 60 percent (well above the national average), a result that Hamermesh (2011) suggests indicates some recognition by female students of the role of attractiveness in the dating exchange (Hamermesh, 2011).[7] However, as the percentage of female students extends beyond 60 percent, Fisk (2008) finds that female student attractiveness declines. According to Hamermesh (2011: 133-134), these findings by Fisk (2008) "might arise if high school girls, being aware of conditions in different schools, sorted themselves in part by the sex ratio . . . at prospective colleges . . .," wherein relatively unattractive female students seek campus (collegiate) dating markets (i.e., college campuses) where male students are relatively more abundant, and competition among female student rivals is relatively less intense, and yet such pre-college sorting disappears with *extremely* low percentages of male students. Hamermesh (2011: 133) also adds that the results found by Fisk (2008) ". . . might occur because the college women, finding dates scarce, made special efforts to enhance their physical attractiveness, and these efforts showed up in their Facebook pictures (Hamermesh, 2011: 133)." These hypotheses are referred to in this study as "self-sorting" and "meeting the competition," respectively.

The current study re-examines the political economy of the dating exchange by extending the approach developed in Fisk (2008). We extend Fisk's analysis by gathering institution-level data

[4] The impact of beauty on electoral success in a professional political environment is examined in Klein and Rosar (2005).

[5] Hamermesh (2011: 132) correctly adds that, even though relatively new to this area of research, economists have "added some new twists" to it.

[6] Unfortunately, the Fisk (2008) study is an unpublished one that is not currently available on the internet. An excellent summary of Fisk (2008) is, however, available in Hamermesh (2011: 133-134).

[7] Hamermesh (2011: 134-135) adds that economists have found general support for hypotheses like that in Fisk (2008) from examinations of speed-dating festivals and online dating services. For more, see Fisman, Iyengar, Kamenica and Simonson (2006) and Hitsch, Hortaçsu and Ariely (2006 and 2010).

from the *national* colleges and universities included in *U.S. News & World Report's Best Colleges 2012.* This sample includes almost 250 colleges and universities across all regions of the U.S. We combine the institution-level demographic data with average female student attractiveness grades from collegeprowler.com, an internet site dedicated to collecting students' ratings on virtually all aspects of life on college campuses in the United States. We use this extensive and rich dataset to explore the relationship between the extent of competition among females students for dates, as captured in the percentage of the student body accounted for by females, and the attractiveness of the female students involved in that competition. Lastly, our study offers estimations of simultaneous systems of equations that allow us to parse the two hypotheses – the self-sorting and meeting the competition hypotheses – offered by Hamermesh (2011). Our results not only corroborate those in Fisk (2008), they also point out that the fraction of a student body accounted for by female students does not depend on average attractiveness of female students, thus supporting Hamermesh's (2011) contention that a female student's approach to the collegiate dating market is one that emphasizes the importance of human capital investments in beauty as a way of meeting the competition.

2. Female Student Allure and Collegiate Dating Markets: Framing the Hypotheses

Our conceptual model for exploring the role of female student attractiveness in collegiate dating markets is presented in equation (1) below,

$$HOT_i = \alpha + \beta_1 FEM\%_i + \beta_2 FEM\%SQ_i + \beta_3 SIZE_i + \beta_4 PRIVATE_i + \varepsilon_i \,, \qquad (1)$$

wherein the dependent variable, HOT_i, is the average rating of female student attractiveness (hotness) at college/university *i*, as established by the attractiveness (hotness) ratings at collegeprowler.com. The attractiveness ratings provided by collegeprowler.com are qualitative in nature, following the grading scale used often by educators. The highest rating is A+, from where ratings descend to A, A−, B+, B, and so on. At this point in the analysis we make an approximate conversion of HOT_i to a cardinal measure. The conversion presented in Table 1 is used. That conversion results in a high female student attractiveness score of 4.3, and scores descend from there to 4, 3.7, 3.3, 3, and so on.

Table 1
Female Student Attractiveness Grade Conversion

Female Student Attractiveness Grade	Conversion Score
A+	4.3
A	4
A−	3.7
B+	3.3
B	3
B−	2.7
C+	2.3
C	2
C−	1.7

Note: The female student attractiveness grades are provided by collegeprowler.com.

Following Fisk (2008), the key regressors in equation (1) above are $FEM\%_i$ and $FEM\%SQ_i$. These are, respectively, equal to the percentage of the student body at each institution, *i*, accounted for by female students, and its square. Inclusion of these variables captures the expected positive and nonlinear relationship between female student attractiveness and dating market competition found by Fisk (2008). We expect that β_1 will be positive and β_2 will be negative, reflecting the diminishing marginal returns in female student attractiveness to greater campus competition (Fisk, 2008). In addition to these two regressors, we include a pair of institution-based variables that are expected to impact average attractiveness on college and university campuses. The first of these, $SIZE_i$, is equal to the overall enrollment at each college and university in our sample. If larger colleges and universities exhibit higher attractiveness averages, then *SIZE* will be positively related to *HOT*. Of course, a negative sign attached to the estimate of β_3 would reflect the opposite. In terms of this study, the particular relationship between *SIZE* and *HOT* is simply an empirical question.

Lastly, $PRIVATE_i$ is a dummy variable equal to one for private institutions, and zero otherwise. As Hamermesh (2011: 133) states regarding the Fisk (2008) study, female student attractiveness may be sensitive to both the school-sorting process undertaken by high school girls and human capital investments made by college women that enhance their physical attractiveness. Either, or both, of these effects will be exhibited in the Facebook photographs employed by Fisk (2008), as well as in ratings compiled by an online college selection service such as collegeprowler.com, both of which measure female student attractiveness at the institution. Students at private colleges and universities generally possess greater economic capacity for making the types of human capital investments (in physical attractiveness) noted above. Many, in fact, have had access to investments in beauty throughout their lives that have not been available to some of their counterparts in the public universities system. Thus, we expect that average female student attractiveness will be greater at private institutions, *ceteris paribus*, than at their public university counterparts. This is consistent with the expectation that β_4 will be positive. In the section that follows, we examine the data used in our study, as well as several econometric approaches to testing the hypotheses above.

3. Data and Econometric Tests

The institution-level data used in this study come from the national institutions listed in *U.S. News & World Report's Best Colleges 2012*. As stated above, the female student attractiveness ratings are from collegeprowler.com. In a handful of individual cases, collegeprowler.com did not include female student attractiveness information. Additionally, one institution, Texas Women's University, was omitted from the sample, given that its name implies a non-coeducational institution, which could produce an outlier. After these considerations, data from the 245 institutions listed in the Appendix are included in the study. The institutions listed in the Appendix are generally regarded as the best *national* colleges and universities in the United States, and they encompass both large and small, public and private colleges and universities. Summary statistics from the data are included in Table 2, along with the variable names and descriptions.

Table 2
Variable Descriptions and Summary Statistics

Variables	Description	Summary Statistics
HOT	The female student attractiveness score for each institution according to conversions shown in Table 1 [collegeprowler.com].	3.106 (0.587)

FEM%	The percentage of an institution's student body accounted for by female students [*U.S. News & World Report's Best Colleges 2012*].	52.306 (7.187)
FEM%SQ	The squared percentage of an institution's student body accounted for by female students [*U.S. News & World Report's Best Colleges 2012*].	2,787.4 (724.6)
SIZE	The number of students enrolled at each institution [*U.S. News & World Report's Best Colleges 2012*].	15,082.3 (9,408)
PRIVATE	A dummy variable equal to 1 for private institutions, and 0 otherwise [*U.S. News & World Report's Best Colleges 2012*].	0.327 (0.470)
TECH	A dummy variable equal to 1 for institutions whose names include the term "Technology," "Technological," or "Polytechnic," and 0 otherwise [*U.S. News & World Report's Best Colleges 2012*].	0.053 (0.225)

***Notes*:** Data sources for the variables above are denoted in brackets. The summary statistics above are means (standard deviations).

Results from two ordinary least squares (OLS) estimations, one including only *FEM%* and *FEM%SQ*, and the other specified as in equation (1) above, are included in Table 3. In version (1) of Table 3, the regressors are jointly significant (*F*-statistic = 13.01), and both retain their expected positive and negative signs, respectively, and both are significant at the .01 level. Interestingly, the estimates of β_1 and β_2 indicate that average female student attractiveness reaches a maximum at a FEM% value of about 56 percent, beyond which average female student attractiveness on campus begins to decline. This finding is similar to that in Fisk (2008), which indicates a maximum female student attractiveness value at a female proportion of about 60 percent.

Table 3
Summary of Econometric Results

	OLS Models (dep. var. = HOT)		*2SLS Models* dep. var.:	
Variables	(1)	(2)	HOT	FEM%
constant	−0.793 (−1.00)	−0.365 (−0.47)	−2.435 (−1.45)	+39.852* (+5.71)
FEM%	+0.144* (+4.58)	+0.108* (+3.44)	–	–
*pred*FEM%	–	–	+0.193* (+2.80)	–
FEM%SQ	−0.129e−2* (−4.17)	−0.936e−3* (−3.01)	−0.178e−2* (−2.62)	–
SIZE	–	+0.234e-4* (+5.06)	+0.2e-4* (+3.87)	–
PRIVATE	–	+0.318* (+3.54)	+0.314* (+3.44)	–
*pred*HOT	–	–	–	+4.222 (+1.90)
TECH	–	–	–	−12.398* (−5.13)
n	245	245	245	245
F-statistic	13.01*	13.76*	12.44*	34.43*
R^2	0.097	0.187	0.172	0.222
HOT-maximizing FEM%	56	58	54	–

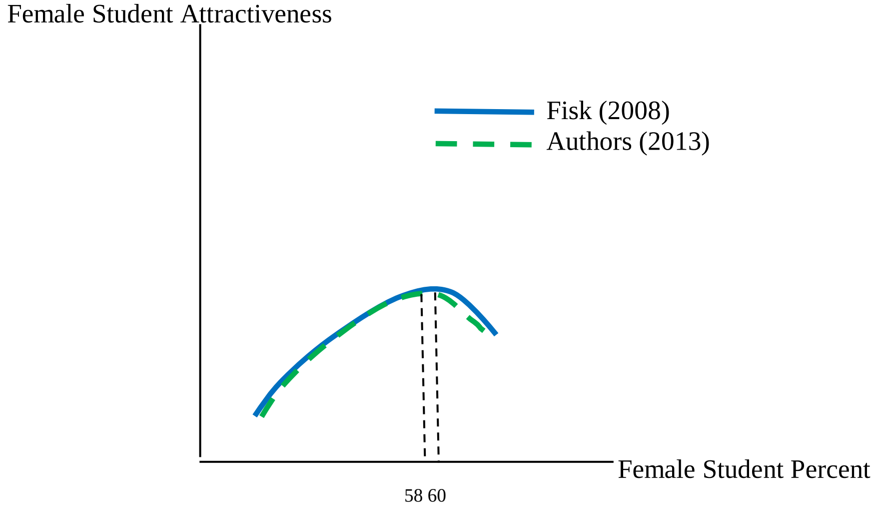
Notes: The numbers in parentheses below the parameter estimates are *t*-statistics, where * denotes the .01 level of significance. The *HOT-maximizing FEM%* figures are rounded to the nearest 0.5.

Results from the unrestricted model in equation (1) are also presented in Table 3. This model, presented as version (2) of Table 3, is also jointly significant, based on an *F*-statistic of 13.8.

The key variables, *FEM%* and *FEM%SQ*, are also again positively and negatively related to *HOT*, respectively, and significant at the .01 level. In this case, the estimates of β_1 and β_2 indicate that average female student attractiveness reaches a maximum at a *FEM%* value of about 58 percent, beyond which average female student attractiveness on campus begins to decline. This result is remarkably similar to that in Fisk (2008). The close proximity of the two sets of results is perhaps best depicted as in Figure 1.

Including *SIZE* and *PRIVATE*, as in version (2) of Table 3, increases the R^2 to 18.7 percent – a respectable result for cross-section analysis – and each of these two variables is significant at the .01 level. The positive sign on *SIZE* suggests that, *ceteris paribus*, larger collegiate dating markets produce more attractive female students on average, while the positive parameter attached to *PRIVATE* suggests that average female student attractiveness is greater at private colleges and universities, *ceteris paribus*, than at their public college and university counterparts.

Figure 1
Results Comparison



One limitation with the OLS results is that they fail to account for the notion that *HOT* and *FEM%* are jointly determined, as in Hamermesh's (2011) proposition that both are a function of the university-sorting process in which high-school girls take part. As such, the estimates presented to this point are potentially biased and inconsistent (Greene, 2011). To address this statistical issue, equations (2) and (3) below are employed, thus creating a two-equation system wherein both *pred*FEM%$_i$ and *pred*HOT$_i$ represent the endogenous treatment of HOT_i and $FEM\%SQ_i$, respectively.

$$HOT_i = \alpha + \beta_1 pred\text{FEM\%}_i + \beta_2 FEM\%SQ_i + \beta_3 SIZE_i + \beta_4 PRIVATE_i + u_i \quad (2)$$
$$FEM\%_i = \gamma + \delta_1 pred\text{HOT}_i + \delta_2 TECH_i + v_i \quad (3)$$

This system of equations is estimated by two-stage least squares (2SLS), and includes an additional regressor in equation (2), $TECH_i$. Given the relative paucity of females choosing engineering, science and other technical fields (Hill, Corbett and St. Rose, 2010), universities specializing in these areas will exhibit an underrepresentation of female students. This is captured by the dummy variable $TECH_i$, which is equal to one for national universities whose names include the terms "Technology," "Technological," "Technical" or "Polytechnic," and zero otherwise.

Results from two-stage least squares estimation of the system of equations in (1) and (2) above are presented in Table 3. In the *HOT* equation, both *pred*FEM% and *FEM%SQ* are correctly signed and significant at the .01 level. The estimates also indicate that average female student attractiveness reaches a maximum at a FEM% value of about 54 percent, which is close to previous estimates of 56 to 58 percent. Additionally, both *SIZE* and *PRIVATE* retain their positive and significant (at the .01 level) parameters, reflecting that, in the usual *ceteris paribus* cases, larger collegiate dating markets and private collegiate dating markets attract female students of greater allure or attractiveness. Lastly, the specification including *HOT* as the dependent variable is jointly significant (F-statistic = 12.41) and produces an R^2 of 17.2 percent.

The *FEM%* specification in the simultaneous system is also jointly significant (F-statistic = 34.43) at the .01 level, and it produces an R^2 of 22.2 percent. Although *TECH* retains its expected negative sign and is significant at the .01 level, *pred*HOT is *positively* signed and *in*significant. The insignificance of *pred*HOT in equation (2) is a new result that suggests perhaps that, in terms of the possibilities addressed by Hamermesh (2011), female students' approach to collegiate dating markets is less about self-sorting on the basis of an institution's enrollment composition than it is about emphasizing the importance of human capital investments in beauty as a way of meeting the competition. This conclusion may inform future approaches to this subject.

A second limitation to the analysis here involves what is essentially the ordered nature of *HOT*, the dependent variable in equation (1) above. The conversion of the collegeprowler.com attractiveness grades resulted in a numerical rating system. However, the information contained in *HOT* is ordered or hierarchical, as higher values reflect the idea that average allure on campus is greater. As such, *HOT* is an ordered dependent variable amenable to analysis by (maximum likelihood) ordered probit (Greene, 2011). Results from ordered probit estimations, wherein *HOTORDER* replaces *HOT*, of the restricted and unrestricted versions of equation (1) above are presented in Table 4. In these estimations, a higher category is associated with greater attractiveness (see Table 1).

Table 4
Summary of Econometric Results

	Ordered Probit Models (dep. var. = HOTORDER)		*Simultaneous Ordered Probit Models* dep. var.:	
Variables	(1)	(2)	HOTORDER	FEM%
constant	−5.118*	−4.624*	−8.156*	+48.095*
	(−3.39)	(−2.99)	(−2.54)	(+17.14)
FEM%	+0.265*	+0.212*	–	–
	(+4.41)	(+3.40)		
*pred*FEM%	–	–	+0.357*	–
			(+2.71)	
FEM%SQ	−0.239e-2*	−0.185e-2*	−0.329e−2*	–
	(−4.04)	(−3.00)	(−2.53)	
SIZE	–	+0.436e-4*	+0.374e-4*	–
		(+4.81)	(+3.74)	
PRIVATE	–	+0.617*	+0.601*	–

		(+3.54)	(+3.45)	
*pred*HOTORDER	–	–	–	+1.158
				(1.81)
TECH	–	–	–	−13.278*
				(−6.30)
n	245	245	245	245
Model χ^2	24.17*	–	43.98*	–
F-statistic	–	48.32*	–	37.81*
Estrella R^2	0.095	–	0.168	–
R^2	–	0.183	–	0.238
HOT-maximizing FEM%	56.5	58	55	–

Notes: The numbers in parentheses below the parameter estimates are *t*-statistics, where * denotes the .01 level of significance. The *HOT-maximizing FEM%* figures are rounded to the nearest 0.5.

As Table 4 indicates, when equation (3) is restricted to only *FEM%* and *FEM%SQ*, the results are much the same, at least in terms of omnibus statistics and the sign and significance of the regressors, as those from OLS estimations. The ordered probit model in version (1) of Table 4 is jointly significant, based on a Model χ^2 of 24.17. In terms of specific results, *FEM%* and *FEM%SQ* retain positive and negative signs, respectively, and both are significant at the .01 level. These results are also similar to their Table 3 counterparts (OLS). Here, the value of *FEM%* that maximizes female student allure is 56.5 percent.[8] The unrestricted model in version (2) of Table 4 is also jointly significant, producing a Model χ^2 of 48.32; this is accompanied by an Estrella R^2 (Estrella, 1998) of 18.3 percent. Again, both *FEM%* and *FEM%SQ* retain positive and negative signs, respectively, and both are significant at the .01 level. In terms of *SIZE* and *PRIVATE*, again the results are similar to those using OLS. Both are positively related to *HOT* and significant at the .01 level. In this model, female student allure is maximized at a *FEM%* of 58 percent, a figure consistent with that in Fisk (2008).

Although the ordered probit results support those using OLS, the endogeneity issue surrounding *FEM%* that is discussed above remains. In this case, however, estimation by 2SLS is not feasible, given the limited nature of the variable *HOT*. To address this issue, we employ a simultaneous probit process similar to that in Upadhyaya, Raymond and Mixon (1997), which is based on Maddala (1983). Results from the simultaneous ordered probit model are presented in the last column of Table 4. The results for equation (1) indicate that this model is jointly significant (Model χ^2 of 43.98) with an Estrella R^2 of 16.8 percent. These results closely mirror those from the ordered probit model discussed above. Again, both *pred*FEM% and *FEMSQ%* retain their expected positive and negative signs, respectively, and both are significant at the .01 level. Thus, all six sets of results – OLS, 2SLS, ordered probit and simultaneous probit – support those in Fisk (2008). The remaining regressors, *SIZE* and *PRIVATE*, also remain positive and significant (at the .01 level), as in earlier estimations. Lastly, female student attractiveness is maximized when *FEM%* is equal to 55 percent, a result similar to that from prior estimations.

The second equation in the system is also jointly significant, based on an *F*-statistic of 37.8; this model also produces an R^2 of 23.8 percent. *TECH* is again negative and significant at the .01 level. Lastly, as it is in the 2SLS estimation, *pred*HOT is *positively* signed yet *in*significant. This result reemphasizes the possibility raised by the new result using two-stage least squares

[8] In the ordered probit models, this percentage is that where the probability of the occurrence of the highest ordered value is maximized.

that is discussed above. That is, in terms of the possibilities addressed by Hamermesh (2011), female students' approach to collegiate dating markets is less about self-sorting and more about the importance of human capital investments in beauty as a way of meeting the competition.

4. Concluding Comments

With the work of Hamermesh and Biddle (1994), economists have begun to investigate to role of beauty in markets. In an important study of the political economy of the dating exchange (market), Fisk (2008) uses data from 2006 on 30 southern colleges and universities. Fisk (2008) finds that dating market competition leads to a maximum attractiveness of the female study body when the female fraction of the student body is about 60 percent. We extend Fisk's analysis to a very large national sample of colleges and universities and confirm Fisk's result. In addition, when we account for the endogeneity in, and ordinal nature of, our attractiveness variable, we find that the fraction of the student body that is female does not depend on attractiveness. Following Hamermesh (2011), this new result highlights the importance of human capital investments in beauty as a way of meeting the competition in a female student's approach to the collegiate dating market. Finally, given research findings covered by Hamermesh (2011) indicating that beauty is positively related to labor market earnings (rewards), one implication of this study and that by Fisk (2008) is that female students matriculating into colleges and universities wherein the female fraction of the student body approaches 58-60 percent will, in the future (i.e., upon entering the workforce after graduation), receive earnings exceeding those of their counterparts from institutions comprised of smaller fractions of female students. A test of this implication would, of course, make for a useful extension of this line of research.

References

Biddle, J.E. and D.S. Hamermesh (1998) "Beauty, productivity, and discrimination: Lawyers' looks and lucre," *Journal of Labor Economics* 16: 172-201.

Estrella, A. (1998) "A new measure of fit for equations with dichotomous dependent variables," *Journal of Business and Economic Statistics* 16: 198-205.

Fisk, S. (2008) "Competition and social change: Female attractiveness as an object of exchange in dating markets," Unpublished Manuscript.

Fisman, R., S.S. Iyengar, E. Kamenica and I. Simonson (2006) "Gender differences in mate selection: Evidence from speed dating experiments," *Quarterly Journal of Economics* 121: 673-697.

Green, T.G., F.G. Mixon, Jr. and L.J. Treviño (2005) "Have you seen the new econ prof? Beauty, teaching, and occupational choice in higher education," in *Shaping the Learning Curve: Essays on Economic Education*, Edited by Franklin G. Mixon, Jr., New York, NY: *i*Universe, Inc., pp. 57-67.

Green, T.G., F.G. Mixon, Jr. and L.J. Treviño (2013) "Instructor hotness and institutional choice in academe: A decomposition approach," in *At the Margin: New Developments in Economic Education*, Edited by F.G. Mixon, Jr. and R.J. Cebula, forthcoming.

Greene, W.H. (2011) *Econometric Analysis*, Upper Saddle River, NJ: Prentice Hall.

Hamermesh, D.S. (2006) "Changing looks and changing 'discrimination': The beauty of economists," *Economics Letters* 93: 405-412.

Hamermesh, D.S. (2011) *Beauty Pays: Why Attractive People are More Successful*, Princeton: Princeton University Press.

Hamermesh, D.S. and J. Abrevaya (2012) "Beauty is the promise of happiness?" Unpublished Manuscript.

Hamermesh, D.S. and J.E. Biddle (1994) "Beauty and the labor market," *American Economic Review* 84: 1,174-1,194.

Hamermesh, D.S., X. Meng and J. Zhang (2002) "Dress for success – does primping pay?" *Labour Economics* 9: 361-373.

Hamermesh, D.S. and A.M. Parker (2005) "Beauty in the classroom: Professors' pulchritude and putative pedagogical productivity," *Economics of Education Review* 24: 369-376.

Hill, C., C. Corbett and A. St. Rose (2010) *Why so Few? Women in Science, Technology, Engineering and Mathematics*, Washington, D.C.: AAUW.

Hitsch, G.J., A. Hortaçsu and D. Ariely (2006) "'What makes you click?' Mate preferences and matching: Outcomes in online dating," Unpublished Manuscript.

Hitsch, G.J., A. Hortaçsu and D. Ariely (2010) "Matching and sorting in online dating," *American Economic Review* 100: 130-163.

Klein, M. and U. Rosar (2005) "Physical atractiveness and electoral success: an empirical analysis of the example of electoral district candidates in the 2002 parliamentary election," *Politische Vierteljahresschrift* 46: 266–290.

Maddala, G.S. (1983) *Limited-Dependent and Qualitative Variables in Econometrics*, Cambridge, U.K.: Cambridge University Press.

Mobius, M.M and T.S. Rosenblat (2006) "Why beauty matters," *American Economic Review* 96: 222-235.

Pfann, G.A., J.E. Biddle, D.S. Hamermesh and C.M. Bosman (2000) "Business success and businesses' beauty capital," *Economics Letters* 67: 201-207.

Price, M.K. (2008) "Fund-raising success and a solicitor's beauty capital: Do blondes raise more funds?" *Economics Letters* 100: 351-354.

Salter, S.P., F.G. Mixon, Jr. and E.W. King (2012) "Broker beauty and boon: A study of physical attractiveness and its effect on real estate brokers' income and productivity," *Applied Financial Economics* 22: 811-825.

Smith, K. (2005) "Getting econometrics students to evaluate student evaluations," in *Shaping the Learning Curve: Essays on Economic Education*, Edited by Franklin G. Mixon, Jr., New York, NY: *i*Universe, Inc., pp. 15-25.

Stigler, G.J. and C. Friedland (1962) "What can regulators regulate? The case of electricity," *Journal of Law and Economics* 5: 1-16.

Upadhyaya, K.P., J.E. Raymond and F.G. Mixon, Jr. (1997) "The economic theory of regulation versus alternative theories for the electric utilities industry: A simultaneous probit model," *Resource and Energy Economics* 19: 191-202.

Valbrun, M. (2012) "Black males missing from college campuses," *America's Wire*, online (accessed on 11 July 2012, http://americaswire.org/drupal7/?q=content/black-males-missing-college-campuses).

Appendix
List of National Colleges and Universities Included in the Sample

Adelphi University
American University
Arizona State University
Ashland University
Auburn University
Azusa Pacific University
Ball State University
Barry University
Baylor University
Binghamton University – SUNY
Biola University
Boston College
Boston University
Bowie State University
Bowling Green State University
Brandeis University
Brigham Young University
Brown University
California Institute of Technology
Carnegie Mellon University
Case Western Reserve University
Catholic University of America
Central Michigan University
Clark Atlanta University
Clark University
Clemson University
Cleveland State University
College of William and Mary
Colorado School of Mines
Colorado State University
Columbia University
Cornell University
Dartmouth College
DePaul University
Drexel University
Duke University
Duquesne University
East Carolina University
East Tennessee State University
Emory University
Florida A&M University
Florida Atlantic University
Florida Institute of Technology
Florida International University
Florida State University
Fordham University
George Mason University
George Washington University
Georgetown University
Georgia Institute of Technology
Georgia Southern University
Georgia State University
Harvard University
Hofstra University
Howard University
Illinois Institute of Technology
Illinois State University
Indiana State University
Indiana University
Indiana University of Pennsylvania
Indiana University Purdue University – Indianapolis
Iowa State University
Johns Hopkins University
Kansas State University
Kent State University
Lamar University
Lehigh University
Louisiana State University
Louisiana Tech University
Loyola University – Chicago
Marquette University
Maryville University
Massachusetts Institute of Technology
Miami University
Michigan State University
Michigan Technological University
Middle Tennessee State University
Mississippi State University
Montana State University
Morgan State University
New Jersey Institute of Technology
New Mexico State University
New School
New York University
North Carolina A&T State University
North Carolina State University
North Dakota State University
Northeastern University
Northern Arizona University
Northern Illinois University
Northwestern University
Nova Southeastern University
Oakland University
Ohio State University
Ohio University
Oklahoma State University
Old Dominion University
Oregon State University
Pace University
Pennsylvania State University
Pepperdine University
Portland State University
Princeton University
Purdue University
Rensselaer Polytechnic Institute
Rice University
Rutgers University – New Brunswick
Rutgers University – Newark
Saint John's University
Saint Louis University
Saint Mary's University
Sam Houston State University
San Diego State University
Seton Hall University
South Carolina State University
South Dakota State University
Southern Illinois University
Southern Methodist University
Stanford University
Stony Brook University – SUNY
Syracuse University
Temple University
Tennessee State University
Texas A&M University – College Station
Texas A&M University – Commerce
Texas A&M University – Corpus Christi
Texas A&M University – Kingsville
Texas Christian University
Texas Southern University
Texas Tech University
Tulane University
Tufts University
University of Akron
University of Alabama – Tuscaloosa
University of Alabama – Birmingham
University of Alabama – Huntsville
University of Albany – SUNY
University of Arizona
University of Arkansas
University of Buffalo – SUNY
University of California – Berkeley
University of California – Davis
University of California – Irvine
University of California – Los Angeles
University of California – Riverside
University of California – San Diego
University of California – Santa Barbara
University of California – Santa Cruz
University of Central Florida
University of Chicago
University of Cincinnati
University of Colorado – Boulder
University of Colorado – Denver
University of Connecticut
University of Dayton
University of Delaware
University of Denver
University of Florida
University of Georgia
University of Hawai'i
University of Houston
University of Idaho
University of Illinois – Champaign
University of Illinois – Chicago
University of Iowa
University of Kansas
University of Kentucky
University of La Verne
University of Louisiana – Lafayette
University of Louisville
University of Maine
University of Maryland – College Park
University of Maryland – Baltimore County
University of Massachusetts – Amherst
University of Massachusetts – Lowell
University of Memphis
University of Miami
University of Michigan
University of Minnesota
University of Mississippi
University of Missouri – Columbia
University of Missouri – Kansas City
University of Missouri – Saint Louis
University of Montana
University of Nebraska – Lincoln
University of Nebraska – Omaha
University of Nevada – Las Vegas
University of Nevada – Reno
University of New Hampshire
University of New Mexico
University of New Orleans
University of North Carolina – Chapel Hill
University of North Carolina – Charlotte
University of North Carolina – Greensboro
University of North Dakota
University of North Texas
University of Northern Colorado
University of Notre Dame
University of Oklahoma
University of Oregon
University of the Pacific
University of Pennsylvania
University of Pittsburgh
University of Rhode Island
University of Rochester
University of Saint Thomas
University of San Diego
University of San Francisco
University of South Alabama
University of South Carolina
University of South Dakota
University of South Florida
University of Southern California
University of Southern Mississippi
University of Tennessee
University of Texas – Austin
University of Texas – Arlington
University of Texas – Dallas
University of Texas – El Paso
University of Texas – San Antonio
University of Toledo
University of Tulsa
University of Utah
University of Vermont
University of Virginia
University of Washington
University of West Florida
University of Wisconsin – Madison
University of Wisconsin – Milwaukee
University of Wyoming
Utah State University
Vanderbilt University
Virginia Commonwealth University
Virginia Polytechnic Institute & State University
Wake Forest University
Washington State University
Washington University – St. Louis
Wayne State University
West Virginia University
Western Michigan University
Wichita State University
Widener University
Worcester Polytechnic Institute
Wright State University
Yale University

Notes: National colleges and universities taken from list in *U.S. News & World Report's America's Best Colleges 2012*. For universities with multiple branches, the main campus is listed first in the alphabetical presentation above.