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ABSTRACT

Alumni Giving of Business Executives to the Alma Mater: Panel Data Evidence at a Large Metropolitan Research University*

Charitable giving to public and private institutions of higher learning in the US is a growing major source of financing academic and support programs. The novel contribution of this research is the estimation of an econometric model of gift-giving alumni business executives of a large public urban university using 10,192 individual donor observations [that is, a panel of 392 donors for 26 years]. Our theoretically consistent empirical results reinforce the earlier research findings that male alumni in Greek social organizations gave significantly more. New insights unique to this study are that alumni individuals with the higher-order executive job titles (proxy for permanent income) of a Chief Executive Officer or President (relative to the lesser ranks) are significantly more charitable, and that the number of other gift-giving alumni and friends known to donors, and national athletic conference (basketball and football) championship wins are also highly statistically significant positive drivers of alumni annual giving to the comprehensive metropolitan research university. The resulting profile of gift-giving alumni business executives can be profitably used to more effectively target likely donors and raise cost-effectiveness of fundraising efforts in these times of fiscal austerity in higher education.

JEL Classification: I2, L3

Keywords: educational economics, educational finance, charitable donations, alumni giving of business executives

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I
Introduction

US public higher educational institutions increasingly depend on private and other non-governmental sources of support for their academic and related programs as the funding priorities of states change (e.g., more towards Medicaid, public safety and K-12 education), endowment incomes lag behind operating costs, and public higher education steadily transits from publicly-supported to publicly-assisted economic entities (Bristol, Jr., 1990, Okunade, 2004). The rising alumni stock of colleges and universities is an increasingly vital source of recurrent supports (Mann, 2007). Giving to annual fundraising campaigns is an important source of unrestricted fund for colleges and universities, constituent schools, and programs. Alumni giving can offset some of the declines in tax-funded appropriations for student scholarships and distinguished faculty retention (Eicher and Chevaillier, 2002). Colleges and universities further target increased alumni charitable gifts as a leverage for raising the likelihood for receiving greater corporate and foundation gifts. Charitable giving constitutes about 9 percent of higher education revenues (The Giving Institute, 2006).

The Giving Institute (2006) reported that in 2001, individual donors gave roughly $160.72 billion in charitable donations, and 75.8 percent of all giving that year from the four major sources (living individuals, bequests, corporations and their foundations, and foundation grants). Individual giving, usually the largest single source of donations, rose 2.9 percent in 2005 after inflation adjustment. This translates to about 2.2 percent of the average household after-tax disposable income for that year. Charitable giving to higher education declined slightly 1.2 percent (ascribed to alumni giving) to $23.9 billion in 2002 for the first time in 15 years. Alumni donation, historically the largest share (or 25 percent)

of private giving, totaled $5.8 billion in 2002. Individual gifts from non-alumni rose 3.8 percent to $5.4 billion in 2002, according to RAND's Council for Aid to Higher Education (2003). The sharp decline in alumni donations in 2002 quickly rebounded with a growth of 11.9 percent but overall voluntary support for higher education remained at the $23.9 billion 2002 level. Charitable giving to higher education historically grows in a strong economy but tends to be stable in downturns (Council for Aid to Education, 2006).[1]

Therefore, this paper motivates the construction and estimation of an econometric model of the determinants of voluntary giving of alumni business executives to the annual funds of a large anonymous public university in a metropolitan setting of more than one million residents in a U.S. Census region. Past related research probed alumni giving in a private, public, small, medium, large, 2- or 4-year liberal arts college or university setting. Our novel study is insightful for its unique focus on annual gift giving business executive graduates of the alma mater and for capturing the impact of gradations of executive job titles (e.g., CEO/President, Manager) on annual charitable giving. The rich micro-panel data econometrically modeled is about 25 percent of the 1,800 gift-giving alumni of record with full data on annual giving and personal histories from 1966 to the late 1990s.

The remainder of this paper proceeds as follows. Section II reviews the pertinent literature. Section III focuses on the theory of giving, the data, and empirical methodology. Section IV revisits the core research findings of our work along with their implications, general conclusions and possible directions for future studies.

II

Literature Review

Past studies[2] of alumni charitable giving are multi-dimensional. Most focused on institution-specific annual giving, although endowments, large gifts for specific uses, that keep giving because they generate investment income flows for many future years (Clinton, 2007) are also important but data are generally sparse on extraordinarily large individual giving. Previous work on annual giving focused on single private liberal arts colleges (Yoo and Harrison, 1989; Wunnava and Lauze, 2001), private research universities (Marr, Mullin, and Siegfried; 2005), selective and highly selective or elite research universities and liberal arts colleges (Baade and Sundberg, 1996; Ehrenberg and Smith, 2003; Clotfelter, 2003; Monks, 2003; Holmes, 2009), major athletic (basketball or football) conference institutions (Rhoads and Gerking, 2000; Tucker, 2004) and Carnegie-classified anonymous research institutions of higher learning (Okunade, 1993; Okunade, Wunnava and Walsh, Jr., 1994; Okunade, 1996, Meer and Rosen, 2009a).

The study goals and findings of past research largely reinforce but sometimes vary, depending on the study objectives, research designs, data structures and econometric model estimation methods. This notwithstanding, the general findings are that recent or historical national athletic wins in football and basketball correlate positively with alumni giving (but its influence may differ by gender, see, e.g., Meer and Rosen, 2009b), beneficial tax code reforms enhance alumni gift-giving generosity, and alumni personal resources (income and/or wealth) are catalysts for gift giving. Moreover, positive drivers of alumni giving include donors' satisfaction with the undergraduate experience, campus Greek organization affiliation, income or enabling economic resources, graduation from the same institution

where one first attended, graduating a second or more degrees from the same institution, knowledge of other gift-giving individuals, number of alumni relatives, alumni spouse, years since graduation, receipt of the institution's financial support during the college years, employment in the financial sector or graduating in specific study fields (e.g., the field of Business Finance), residing in an alumni chapter state, volunteering at the alma mater, and extensive publicity of reunion year celebrations. Finally, alumni gift giving to the alma mater also tends to vary over the business cycle phases, males donate more, and alumni with the honors designation at graduation are highly more likely to be charitable.

III
Theoretical Model, Data, Empirical Methodology, and Disscussion

The theoretical underpinnings of charitable giving at the individual or household level accord with a number of alternative propositions, including the economics of charity based on the theory of consumer demand for nondurables. Auten and Rudney (1986) empirically tested the Feldstein (1975) theory on the price and income effects of voluntary charitable giving. Second, charitable individuals may also be driven by the sense of obligation to provide a public good for the society (Keating, Pitts and Appel, 1981; Clinton, 2007). Third, some theory posits that charitable donors implicitly seek utility-augmenting returns for self (such as, group membership or self-esteem) or to raise the future likelihood of a child's admission to the alma mater (Meer and Rosen, 2009a). Hall (2004), for instance, contends that men tend to give in order to enhance their own social standing in the community and that women contribute to charitable causes to promote social change or assist the less fortunate. In effect, colleges (recipients) behave as if they seek maximization of donation resource inflows while the gift-givers (donors) act as if they seek to maximize

returns including recipient services (Yoo and Harrison, 1989). Becker's (1974) theory of the interdependence of utility functions among unrelated economic actors offers another theory of personal charitable giving. These contending theories agree with the tendencies of donors to seek maximize of utilities for self, others, or both.

The study data are a sample of 392 individual gift-giving *business executive* alumni donors of the university for 26 years (1970 – 1995). The panel data set is roughly a 25 percent sample of the population of donors spanning mid 1960s to the late 1990s on which complete personal information are recorded. Personal donor data include gender, whether alumni spouse, professional job titles[3], the degree(s) earned from this university including year(s) of graduation, alumni post-graduation activities involved, Greek membership, annual giving history. Further, archival data on the university's national athletic successes or championships in basketball and football were obtained from online sources.

Table 1 contains descriptive statistics for the main variables used in empirical work. The institution of higher learning studied is a comprehensive research university sited in the *ESC* (East South Central) US Census region– at the giving time 83.4% of the donors resided in region, 87.8% of the sample is *Male*, 68.9% of the alumni sample were affiliated with campus *Greek* (fraternity, sorority) organizations, 25.5% of the sample held the senior career job title of CEO or President (*Seniorexec*), and the typical donor was engaged in 1.58 post-graduation alumni activities at the alma mater (*Alactv*). Finally, *Champ* is a 0-1 dummy capturing the gift-giving effect of the university winning a national championship in basketball and/or football, and the *ESC* regional dummy captures the giving effect of the spatial nearness of alumni to the institution. The dependent variable *ln_rdon*, the log of real annual donation for academic purposes, includes restricted and unrestricted alumni gifts to

the university or a specific constituent school, colleges and academic areas. These annual gifts are aimed at supporting and promoting priority institutional excellence in defined and critical areas of need.

Consequently, received theories and past research lead us to propose the following empirical regression model for the gift-giving business executive alumni of a large public, metropolitan research extensive comprehensive university:

$$
\begin{aligned}
ln_rdon_{it} = {} & \alpha_o + \beta_1 Male_{it} + \beta_2 Greek_{it} + \beta_3 Seniorexec_{it} + \beta_4 Alactv_{it} + \beta_5 Champ_{it} \\
& + \beta_9 Numrelf_{it} + \beta_{10} ESC_{it} + [\text{Vector of } TIME\text{-}SERIES\ DUMMIES]\ \boldsymbol{\kappa} + \xi_{it}
\end{aligned}
$$

where, i = 1,2,….392 (i.e., number of person-specific donors) and t = 1970, 1971,…1995 (that is, 26 annual periods), ξ is the error term. The vector of *TIME-SERIES DUMMIES* (=1 for a specific year, 0 otherwise) are included in the model as year-specific controls (to serve as, e.g., a proxy for business cycle effects) on giving.

[Insert Tables 1 and 2 about here]

The overall fit of the estimated model to observed data (10,192 person observations) in Table 2 is highly significant ($F_{[31,\ 10160]}$ = 66.42 with p-value = 0.0000). The finding that alumni males (*male*) gave almost 11 percent more than females is both highly significant and theoretically consistent with the *a priori* expectation of males having a higher lifetime earnings (resource) profile relative to females. Compared to the non-Greeks, fraternal organization alumni membership (*Greek*) significantly increased donations by roughly 9 percent. Our results further indicate that alumni senior executives (that is, corporate CEOs and Presidents [*alumexe*]), relative to alumni holding subordinate seniority titles, donated 12 percent significantly more. Past research using individual level data on alumni giving

uniformly omitted a direct income measure. In this paper, higher-order executive job titles captures more than the effect of income on giving because it is used to proxy permanent income. This is consistent with the theory that consumption planning is based on permanent rather than current income. Moreover, alumni engagement in post-graduation activities of the alma mater (*alactv*) raised mean donations by roughly 28%. Consistent with the limited research evidence on the role of collegiate national athletic success on giving, our results confirm giving to rise highly significantly (at α=0.001) in years that the alma mater won national basketball and/or football championship(s). Specifically, years of highly successful national athletic championships (*champ*), both broadening and deepening the institution's national exposure, significantly raises alumni giving (that is, ∂ ln_*rdon* / ∂*champ* = 1.376 is highly statistically significant).

Given the fitted log-linear functional form empirical model and the magnitude of the coefficient *champ* being greater than 1, an intuitive way to interpret this coefficient is to evaluate e^{β}-1 (i.e., $e^{1.376}$-1 = 2.9590 or ≈ 296%). In other words, the championship years on average are associated with a 288% higher level of alumni donations[4] than the typical non-championship years**.**). The estimated coefficient for the number of relatives and friends known variable (*numrelf*), intended to proxy the donation effect of alumni social networks, is associated with about 18.85% rise in annual giving. This finding agrees with evidence in some recent empirical studies using a similar variable to capture the 'lineage effect' on giving (e.g., Wunnava and Lauze, 2001; Holmes, Meditz, and Sommers, 2008). Donors in the '*ESC*' region states gave significantly less relative to those in other US Census regions – perhaps, due to a lack of commitment, the less than national average per capita earnings, and other location-specific factors in the *ESC* region[5] that inversely correlate with giving.

Moreover, annual alumni giving[6] of the business executives to their alma mater grew steadily during the 1980s and 1990s relative to the 1970s, and the giving pattern has tended to be pro-cyclical. The *F* hypothesis test finding on the joint significance of the time-series dummies in the estimated model, designed to capture the business cycle impacts on annual giving, is that business cycles matter significantly ($F_{[24,\ 10160]} = 54.23$; p-value = 0.0001) in the statistical sense.

The empirical model study findings here are parsimonious. Practical importance and high statistical significance of practically all of the covariates of core research interest in the estimated linear-log giving model (see, Table 2) are desirable. Since our model's independent variables are calibrated in different units or scales, standardized regression coefficients[7] are computed to assess practical importance of the statistically significant covariates (excluding 'time-series dummies'). The rank-ordered (standardized regression coefficients or beta, in absolute values) of the *covariates* are: *champ* (0.3572), *numrelf* (0.1152), *alactv* (0.10679), *male* (0.02697), *alumexe* (0.0270), *ESC* (-0.0258), and *Greek* (0.0377). If the research question the fundraisers seek to answer is identification of the covariate(s) with the largest predicted impact on the annual giving response, one should anticipate, using the empirical model estimated here, a comparatively larger annual giving response from the institution's national collegiate athletic championship. More precisely, a 1 standard deviation in the alma mater's national athletic championship win is associated with a 0.36 standard deviation in annual giving (the largest among the model's covariates), *ceteris paribus*.

Superior athletics programs enrich student life quality and learning environments. Concerning the national media (audio-visual, online, and print) exposure factor, athletics

programs with a consistent history of championships raise marketability of the institution's athletics and academic programs, alumni donations, and student applications for admission. Tucker (2004), using data across institutions, found a robust statistically significant positive athletic success advertising effect of college football on the rise in SAT scores of incoming freshmen following the 1995 formation of the bowl alliance. Donations rising 47 percent, from 1999 to 2000, following the arrival on campus of a top-notch men's basketball coach at the studied school signals that other favorable athletics news are capable of raising donations to the alma mater. Moreover, athletics donations and university admissions at the studied institution consistently rose since the basketball team made it to the Elite Eight. More specifically, donations due to athletics rose four percent in 2006, and another 10 percent in 2007 during which the university had strong national showings in athletics. This evidence is consistent with a 2004 nationwide study finding a transitory rise in alumni giving after a conspicuously successful athletics season.

The remaining determinants of annual giving are similarly interpreted using their specific standardized regression coefficients. Suppose the study goal was to search for the most practical drivers (i.e., modifiable predictors) of annual alumni giving that fall within the university's central administration control and are amenable to policy shifts. The relevant implications in this context would be to undertake cost-minimizing investments in athletics department specifically targeted at winning national collegiate championships. Moreover, the alma mater should consistently implement strategic initiatives (e.g., learning communities, homecoming celebrations) capable of motivating current students to engage in community-building and broad-based social networking activities aimed at elevating their life-long, post-graduation attachments to the alma mater. The establishing of high-

value leadership gifts (List and Rondeau, 2003), a commitment designed to challenge others to give, can be a highly potent catalyst for spurring further contributions to annual funds (and capital) campaigns.

IV
Conclusion and Implications

This paper motivated, constructed and estimated an econometric model of annual gift-giving alumni of a large comprehensive urban university, using a micro panel sample of 10,192 person observations (392 donors spanning 26 years) for whom complete data are available from the university archival documents. Our study findings reinforce the robust results of earlier research on alumni giving of four year colleges and universities, private and public, in that donations rise positively and significantly with the male gender (11% in this case), membership in Greek clubs, that is fraternities and sororities, (9%), and alumni engagements in post-graduation activities of the alma mater (28%).

There are at least two uniquely innovative determinants of annual giving to the alma mater first entertained in this paper: first is an exclusive focus on the gift giving of alumni business executives, and second is the significant role of the theoretically more relevant higher-order job titles that reliably correlate with resource-based 'ability to give' (or permanent income) due to expanded access to personal and corporate (e.g., matching gift policies) resources. Our findings confirm that, for the studied data, alumni with higher grade CEO or President job titles gave 12% more in money donations compared with those with the lower job titles (managers, etc). Our study, also for the first time using data of this research university, confirms the critical importance of national sports championship wins

(basket ball or football) as a generator of the largest rise (≈ 296%) in annual giving to the alma mater. These new and insightful findings have fundamentally important implications.

Since most annual fund donors at the studied institution resides in the ESC US geographic Census region, which is economically less well-off than the rest of the regions and therefore engender lower alumni giving levels, it would be prudent to launch national fundraising campaigns appealing to the balance of the business executive alumni in order to attract super generous donations from the more affluent parts of the US and the rest of the world (e.g., in Asia and Western Europe) where other highly successful alumni reside. This strategy is suggestive of Michael (2007) calling for wealthy donors to highly-ranked mega-rich US higher educational institutions to re-direct their large donations to the anemically funded schools. This thought, based on the rudimentary but powerful law of diminishing returns in economics, contends that the marginal productivity of a dollar gift would confer a greater positive benefit on the academic quality of a cash-strapped than a super wealthy institution. This increasingly emerging strategy is also in line with the Council for Aid to Education in New York (2006) reporting that contributions to higher education by non-alumni rose 14 percent in 2006, to $5.7 billion, compared with alumni giving $8.4 billion to their alma mater. More specifically, the less-prosperous schools are rapidly relying on gifts from outside of their alumni base than their own graduates (Seward, 2007). The non-alumni gift givers to the less-wealthy colleges and universities in return, tend to obtain reciprocal personal recognitions (self-esteem) at a significantly discounted cost.

Particularly in current times when fundraising solicitation efforts are more tightly resource-constrained, the research institution should profitably target alumni donors fitting the profile of the gift-giving individuals possessing attributes that enhance donations (male,

CEOs and Presidents, alumni engaging in post-graduation associations with the alma mater). Finally, it would be tactical for the institution of higher learning to strike an optimal balance between excellence in academic and athletic goals in order to attract a wide range of broad-based donors.

Table 1. Descriptive Statistics (n = 10,192 person observations)

Variable	Mean	Std. Dev	Variable Definition
ln_rdon	0.982179	1.922906	natural logarithm of (real donation + 1)
Male	0.877551	0.327821	1 if male; 0 otherwise
Greek	0.688481	0.463137	1 if fraternity member; 0 otherwise
SeniorExec	0.255102	0.435940	1 if alumni is CEO/President; 0 otherwise
Alactv	1.579278	1.034672	# of alumni activities
Champ	0.346154	0.475761	1 if won a basketball or football championship in a given year; 0 otherwise
ESC	0.834184	0.371934	1 if donor resided in East South Central U.S. Census region; 0 otherwise
Numrelf	0.794054	1.190628	number of gift giving relatives and friends known

Table 2. Pooled Cross-section and Time-series Regression Estimates
Dependent variable^^: *ln_rdon* (log of real donation in $).

Variable	Estimated coefficient
Male	0.10915***
Greek	0.08857***
SeniorExec	0.10997***
Alactv	0.28114***
Champ	1.37566***
Numrelf	0.19468***
ESC	-0.14625***
Time Dummies[^] TS_2	-1.296***
TS_3	-1.167***
TS_4	-1.206***
TS_5	0.142
TS_6	0.257***
TS_7	0.334***
TS_8	0.410**
TS_9	0.346*
TS_10	0.407**
TS_11	0.541***
TS_12	0.580***
TS_13	-0.594***
TS_14	-0.559***
TS_15	1.011***
TS_16	1.041***
TS_17	0.988***
TS_18	1.155***

TS_19	1.184***
TS_20	1.508***
TS_21	1.709***
TS_22	0.676***
TS_23	2.015***
TS_25	0.609***
TS_26	-1.104***
Constant [+]	-0.501***

N = 10,192

Adj. R^2= 0.166

Overall Model Significance: $F_{31, 10160}$= 66.42***

[^] Joint Significance of Time Dummies: $F_{24, 10160}$ = 54.23***

[+] The omitted category consists of donors in 1975 who are female, non-married to alumni, non-Greek organization member, non-alumni friends of the alma mater, holding non-CEO/President job titles, uninvolved in alumni activities, residing outside of the ESC (East-North-Central) U.S. Census region and years in which the university did not win a national collegiate basketball or baseball championship.

[^^] In case of 'zero' giving a value of $1 is assigned to enable to take the natural logarithm.

Significance: * p<0.05; ** p<0.01; *** p<0.001

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Notes

[1] The ongoing recessionary economy with a very slow recovery rate is an exception. Higher education philanthropy has fallen in tandem with a host of most other destinations for charitable giving at the individual level. Interestingly, giving to religious organizations has risen during the current recessionary phase of the global business cycle.

[2] While the focus here is on giving to higher education, there is voluminous research in the general area of philanthropy. The Bekkers and Wiepking (2007) study provides an excellent and extensive literature survey covering nearly 500 works identifying the different mechanisms motivating donors to make financial contributions to their preferred charitable causes. Among the causes they identified, 'altruism', 'reputation', and 'psychological benefits' tie nicely with the underlying reasons for contributions to higher educational institutions. Mann's (2007) motives for charitable giving encompass the following theoretical foundations: 'charitable giving', 'organizational identification', 'social identification', 'services-philanthropic giving', 'economic' and 'relationship-marketing'. On a more careful examination Mann's (2007) typology is in reality a finer decomposition of the Bekkers-Wiepking (2007) framework.

[3] Our use of higher order executive job titles is more likely to capture the importance of a donor's years of accumulated career experience, growth of compensation (earnings and benefits), and life-cycle accumulation of personal wealth growth which taken together would tend to strengthen gift-giving tendencies more than current income (a measure that is typically unavailable). Our novel measure in this study capturing the broadened resource base of the gift-giving individual alumni business executives is fully consistent with the basic microeconomic theory prescription of consumption smoothening that makes more relevant the use of a permanent income proxy in this line of work. See, for example, Okunade, Suraratdecha, and Benson (2010).

[4] Holmes *et. al*. (2008) found that 'winning' sports could simultaneously lead to greater propensity to give and the generosity of alumni contributions.

[5] Holmes (2009) documented that availability of tax deduction provision in a given state could positively impact the propensity to donate as well as the actual amount of alumni giving. In this context, AL and TN do not have a tax deduction provision but KY and MS have a tax deduction provision.

[6] See the regression model estimates of the time-series dummies.

[7] These values were not included in the table to avoid unnecessary cluttering.