For Love or Money: Why Students Choose Careers in Finance and Consulting

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Writing Sample

Abstract

For elite university students, finance and consulting are the two most popular post-graduation destinations, despite the best effort of universities to steer their graduates into other, more "socially useful" paths. I investigate this phenomenon by administering a survey to 97 Northwestern University students that measures their subjective expectations about job outcomes, conditional on job industry, as well as other demographic and personal characteristics that have been identified in previous research as potential causes for preferring jobs in finance or consulting. I examine two outcomes variables: applying to a job in finance or consulting, and receiving a job offer in those industries. I derive a novel discrete choice random utility model where decisions about the job application process are made with limited and uncertain information. I also estimate a binomial logit model to examine the impact of individuals' personal and demographic characteristics on job offers. I find that students have heterogenous and highly uncertain beliefs about future job outcomes, although uncertainty is reduced as students receive more information. Students' expectations also become more accurate as they receive more information, consistent with prior research. Finally, I find that demographics (family income, race, gender, major), as well as the promise of future job offers, are significantly correlated with the application and job offer decisions.

1 Introduction & Literature Review

Every year, the information sessions, job advertisements and seductive presentations from financial and consulting firms attract a larger proportion of elite college graduates[1] than any other industry. Why, despite the best efforts of schools to draw their attention elsewhere, do consulting and finance continue to draw elite students at such high rates?

To many onlookers, the draw of elite students to finance and consulting means a loss for society; many believe that these jobs are, at best, useless, and at worst, actively harmful

[1] This is a slippery and usually ambiguous term, but for the purposes of this study, can be defined as the top-ranked fifteen US universities; although this varies depending on the particular rankings, this group of schools includes the Ivy Leagues, MIT, Stanford, Northwestern, Duke, etc.

to the economy. One journalist wrote that "Wall Street is bigger and richer than ever, and (we) are worst off for it" (Tankersley, 2014).

Further, these fields allegedly attract a disproportionately high number of the nation's best and brightest, thereby preventing them from going into more "socially valuable" fields. The former president of Harvard, Drew Faust, implored her students to stand fast against Wall Street's "all but irresistible recruiting juggernaut." She has called upon Harvard to instead "strengthen its connections to career opportunities" in government and public service (Jiang & Wu, 2009). Other universities have responded to this issue by expanding public service fellowships and internships (Rimer, 2008).

Despite the best efforts of these universities, seniors in elite schools continue to join consulting and financial firms at extremely high rates. 33 and 39% of the Northwestern Classes of 2014 and 2015 went into finance/business services and consulting, whereas 32% of Yale's 2015 graduates and 29% of the Princeton Class of 2014 followed the same path (Northwestern Career Services, 2016; Northwestern Career Services, 2015; Yale Career Services, 2015; Princeton Career Services, 2014). Other elite schools show similar patterns.

Onlookers usually attribute the draw of consulting and finance to the high paychecks that accompany jobs in these fields. As one journalist wrote, "There's a reason why an increasing number of graduates choose finance and consulting: These jobs pay more." (Williams, 2015). However, journalists and academics have suggested other causes, ranging from anxiety about the future to students' competitive natures (Terkel, 2011; Rimer, 2008). Comparatively few studies examining this question have been conducted. Sociologists Lauren Rivera and Amy Binder and anthropologist Karen Ho each conducted interviews with thirty to fifty students at Harvard, Stanford, and Princeton. They observed similar reasons for choosing jobs in these fields. Rivera (2015) pointed to the allure of a high-status lifestyle and anxiety or uncertainty about post-graduation careers. Binder et al. (2016) argued that the "fields of power found in college" rank-order various careers, and thus "inform students about the professions that are most appropriate for people like them" (p.22). Indeed, when Binder and her coauthors interviewed students at Harvard and Stanford, they found that students viewed consulting, finance and tech jobs as "prestige" jobs that were different from "ordinary" careers (p.26). Ho (2009) similarly found a desire for prestige and "elite-ness" to be one of the primary factors in obtaining Wall Street jobs. These financial services firms present themselves as the destination for the "best and brightest"—thus, elite college students anxiously desire to join these firms to prove their status as the nation's smartest students.

However, Binder, Ho and Rivera only examined their data through a qualitative lens. My study was intended to add to the current knowledge by refining and testing their hypotheses using quantitative models on career choice and empirical data gathered from current college students. In my study, I examined the impact of demographics, valuation of prestige, risk aversion, and competitiveness on intent to apply for a consulting or finance job or an offer from either field. Further, I also studied the expectations of current college students regarding finance, consulting, or other job options. Following the lead of several economists studying expectations (Dominitz & Manski, 1997; Zafar, 2013; Baker, Bettinger, Jacob & Marinescu, 2017), I examined both monetary and non-monetary factors in job choice, eliciting subjective probabilities to determine a subject's job expectations about starting salary, hours per week, job satisfaction, and the exit opportunities—i.e. future job offers—conditional on job industry. Previous studies in this vein have focused mainly on how expectations shape schooling choices; early studies assumed that students formed rational and accurate expectations (Willis & Rosen, 1979; Berger, 1988), while later studies have elicited expectations, often in a probabilistic manner, directly from respondents (Dominitz & Manski, 1997; Armantier, Topa, van der Klaauw, & Zafar, 2016; Zafar, 2013). Several of these studies have found that non-monetary factors, particularly the expected enjoyment of a particular choice, are key determinants (Zafar, 2013, Stinebrickner & Strinebrickner, 2014, Baker et al., 2017). Expected labor market outcomes, like salary, play a smaller, though still important, role in schooling choices as well (Baker et al., 2017).

This study adds to the literature in several ways. Firstly, I examine job choice rather than schooling choices (unlike the previous literature) by eliciting subjective probabilities directly from respondents and then estimating the expectations for labor market outcomes conditional on job industry choice. To evaluate the relative importance of various factors in job applications decisions, I derive a novel discrete choice random utility model from standard revealed preference assumptions. I also test additional variables not normally considered in the previous research on expectations, including personal characteristics such as competitiveness or a desire for prestige, and the relevance of career opportunities past one's first job out of college. As well, unlike many previous studies, I also use a subject recruitment process that approximates random selection to bolster the validity of my study.

2 Choice Model

Model 1: Finance Applications

Student i derives utility U_{ik} from application choice **k**: choosing to apply to a financial job (**k=1**) or choosing not to apply to a financial job (**k=0**). In cases where student i has not yet applied to a job, he is either planning in the short- to medium- term future on applying to a financial job (**k=1**) or is not planning on such an application (**k=0**).For students who have applied to at least one finance job, **k=1**; for students who have applied to no financial jobs, but plan to do so in other fields, **k=0**.

I assume that every student has either applied for a job or in planning on applying for one in the short-term future (I excluded all seniors who planned on attending graduate school directly after graduation from my sample). I also assume students are forward-looking; their choices depend on current preferences and the state of the world, as well as expectations about the future state of the world.

To develop a random utility model for application decisions, I first derive a model for the expected utility of the potential jobs that result from each application decision. Each student will derive expected utility *EU(z)* from taking a job in field **z**. For simplicity's sake, I group together all finance jobs (**z=1**) and all non-finance jobs (**z=0**). Here, utility is defined as a function of two vectors, **a** and **b**. Vector **a** consists of job specific characteristics:

$\mathbf{a_1}$: total compensation of jobs in field **z**;
$\mathbf{a_2}$: enjoy working at the jobs available in field **z**;
$\mathbf{a_3}$: average hours peer week working at the jobs available in field **z**;
$\mathbf{a_4}$: compensation of future job offers;
$\mathbf{a_5}$: enjoy working at future job.

Vector $\mathbf{b}$ contains characteristics of student i.
$\mathbf{b_1}$: race;
$\mathbf{b_2}$: gender;
$\mathbf{b_3}$: family income;
$\mathbf{b_4}$: GPA;
$\mathbf{b_5}$: major category [2];
$\mathbf{b_6}$: year in school (first year or senior);
$\mathbf{b_7}$: value prestige and social status;
$\mathbf{b_8}$: value certainty/aversion to risk;
$\mathbf{b_9}$: competitiveness.

Vector $\mathbf{a}$ is unknown at the time of choice $\mathbf{k}$. Each student i holds subjective beliefs $S_i(a_q)$ about the likelihood of the outcomes $\mathbf{a_1}...\mathbf{a_5}$. The expected utility of student i from workinga job in field $\mathbf{z}$ is represented by the following equation:

$$EU_i(\mathbf{z}) = \int U_{iz}(\mathbf{a}, \mathbf{b}) * ds_{iz}(\mathbf{a}) \tag{1}$$

However, before making choice $\mathbf{k}$ to apply to job field $\mathbf{z}$, student i weighs the expected utility of a job in field $\mathbf{z}$, the probability P_z of receiving a job in field $\mathbf{z}$, and the cost C_z (in time and effort) of applying to a job field $\mathbf{z}$. Thus, the expected utility of choice $\mathbf{k}$ is represented by the following equation:

$$EU_i(\mathbf{k}) = EU_i(\mathbf{z}) * P_{zi} - C_{ik} \tag{2}$$

I assume that indifference between alternatives occurs with zero probability, and each student maximizes her expected utility. My model also implicitly assumes that students only face two potential outcomes—applying to only finance, or not applying at all. This is a simplistic assumption—students may choose to apply to only finance, finance and another field, or only another field, and they may choose to apply to one, none, or several jobs. Despite the simplicity of this assumption, it was retained to facilitate the analysis of the data.

The standard revealed preference argument implies that when student i plans to apply to a financial job, then:

$$EU_i(\mathbf{k} = \mathbf{1}) > EU_i(\mathbf{k} = \mathbf{0}) \tag{3}$$

Here, I assume that the expected utility of not applying to any given job is equal to 0; there is no cost to choosing not to apply to a finance job, but neither is there a benefit. Thus, Equation 3 can be transformed:

$$EU_i(\mathbf{z} = \mathbf{1}) * P_{1i} - C_{1i} > 0 \tag{4}$$

I elicit P_z directly from the student.

[2] Natural Sciences, Social Sciences, Humanities, Mathematical and Computer Sciences, Other/Undecided

Using this equation and Equation 1, I derive:

$$[\int U_{1i}(\mathbf{a},\mathbf{b}) * dS_{1i}(\mathbf{a})] * P_{1i} - C_{1i} > 0 \rightarrow \tag{5}$$

$$[\int U_{1i}(\mathbf{a},\mathbf{b}) * dS_{1i}(\mathbf{a}) * P_{1i}] - C_{1i} > 0 \tag{6}$$

I assume utility is linear and separable. Then,

$$U_{ik}(\mathbf{a},\mathbf{b}) = \delta_{ki} + \sum_{q=1}^{5} \beta_q a_q + \sum_{q=1}^{9} \mu_n b_n + \varepsilon_{ki}, \tag{7}$$

where δ_{ki} is a job-specific constant, β_q and μ_n are coefficients for the outcome variables in $\mathbf{a}$ and $\mathbf{b}$, and ε_{ki} is the error term. Thus,

$$EU_i(\mathbf{k}) = \int U_{ki}(\mathbf{a},\mathbf{b}) * dS_k i(\mathbf{a}) * P_{ki} - C_{ki} \tag{8}$$

which equals:

$$P_{ki}[\delta_{ki} + \sum_{q=1}^{5} \beta_q \int a_q dS_{ki} + \sum_{q=1}^{9} \mu_n b_n + \varepsilon_{ki}] - C_{ki} \tag{9}$$

The cost of applying to a given job $(-C_{ki})$ can be combined with the job constant δ_{ki} like so:

$$P_{ki}[\delta_{ki} + \sum_{q=1}^{5} \beta_q \int a_q dS_{ki} + \sum_{q=1}^{9} \mu_n b_n + \varepsilon_{ki}] - C_{ki} \rightarrow \tag{10}$$

$$P_{ki}[\alpha_{ki} + \sum_{q=1}^{5} \beta_q \int a_q dS_{ki} + \sum_{q=1}^{9} \mu_n b_n + \varepsilon_{ki}], \tag{11}$$

where $\alpha_{ki} = \delta_{ki}$ - $\frac{C_{ki}}{P_{ki}}$.
Let $E_{ki}(a_q)$ be the expected value for student i from choice $\mathbf{k}$ of each variable $\mathbf{a_1}...\mathbf{a_5}$. With the linearity assumption, only the expected value of the outcomes in vector $\mathbf{a}$ matters, and thus $\int a_q dS_{ki} = E_{ki}(a_q)$.
So,

$$\begin{aligned} EU_i(\mathbf{k}) = P_{ki}[\alpha_{ki} &+ \boldsymbol{\beta_1} E_{ki}(a_1) + \boldsymbol{\beta_2} E_{ki}(a_2) + \boldsymbol{\beta_3} E_{ki}(a_3) + \boldsymbol{\beta_4} E_{ki}(a_4) + \boldsymbol{\beta_5} E_{ki}(a_5) \\ &+ \boldsymbol{\mu_1} b_{1i} + \boldsymbol{\mu_2} b_{2i} + \boldsymbol{\mu_3} b_{3i} + \boldsymbol{\mu_4} b_{4i} + \boldsymbol{\mu_5} b_{5i} + \boldsymbol{\mu_6} b_{6i} + \boldsymbol{\mu_7} b_{7i} + \boldsymbol{\mu_8} b_{8i} + \boldsymbol{\mu_9} b_{9i} + \varepsilon ki] \end{aligned} \tag{12}$$

To simplify the notation:

$$EU_i(\mathbf{k}) = P_{ki}[\alpha_{ki} + \sum_{q=1}^{5} \beta_q * E_{ki}(\mathbf{a_q}) + \sum_{q=1}^{9} \mu_n * b_{ni} + \varepsilon_{ki}] \rightarrow \tag{13}$$

$$EU_i(\mathbf{k}) = P_{ki}\alpha_{ki} + \sum_{q=1}^{5} \beta_q * P_{ki}E_{ki}(\mathbf{a_q}) + \sum_{q=1}^{9} \mu_n P_{ki} * b_{ni} + P_{ki}\varepsilon_{ki} \tag{14}$$

If student i chooses to apply to a finance job, then **k=1** and:

$$P_{1i}\alpha_{1i} + \sum_{q=1}^{5} \beta_q * P_{1i}E_{1i}(\mathbf{a_q}) + \sum_{q=1}^{9} \mu_n * P_{1i}b_{ni} + P_{1i}b_{ni} + P_{1i}\varepsilon_{1i} > 0 \tag{15}$$

If student i does not plan to apply for a finance job (**k=0**), then the inequality is reversed. To estimate the model, I elicited P_k, $\mathbf{b_n}$, and $E_k(\mathbf{a_q})$ from each student i. I use a binominal maximum likelihood model to estimate the parameters of the model–a_{ki}, β_q, and μ_q.

Model 2: Consulting Applications

This model is derived like Model #1, except that **k=1** when students have applied or are planning to apply to a consulting job, and **k=0** otherwise.

Model 3: Offer of a Finance or Consulting Job

In this model, I consider only personal characteristics and exclude expectations. Rivera (2015) asserted that wealthy white men are at an advantage in finance and consulting recruitment; I intend to test her findings. The model is specified as follows: Let **b** be the vector $(b_1 \dots b_8)$ of demographic and personal characteristics. Let $O_{i,j}$ denote the variable *offer*, where **j=1** if student i receives a full-time offer from a finance or consulting firm, and **j=0** if a student does not receive an offer. Note:

$\mathbf{b_1}$: race;
$\mathbf{b_2}$: gender;
$\mathbf{b_3}$: family income (measured categorically);
$\mathbf{b_4}$: GPA (measured categorically);
$\mathbf{b_5}$: year in school (first year or senior);
$\mathbf{b_6}$: value prestige and social status;
$\mathbf{b_7}$: value certainty/aversion to risk;
$\mathbf{b_8}$: competitiveness.

Thus:

$$O_{i,j} = \sum_{n=1}^{8} w_{ni} * b_{ni} + \varepsilon j \tag{16}$$

Here, I analyze the data using only those participants eligible for a full-time job (i.e. seniors). I use a binomial logit model to estimate the parameters on **b**.

3 Methodology & Survey Description

Participants

I emailed survey invitations to students randomly selected from the list of members of the Weinberg[3] Classes of 2017 and 2020 Facebook page. Because the vast majority of each Weinberg class is a member of their respective Facebook page, this process approximates random selection. Each student was invited to take my survey, which was administered through Qualtrics. I contacted 362 students, with 97 completing the survey (see Table 1).

I only recruited freshmen and seniors to examine whether there is a significant difference in preferences and expectations between the two groups. Binder et al.'s (2016) research suggested that many elite college students only begin desire the prestige of employment in consuting and finance after a few years of immersion in their school's cultures.

Although the sample skewed heavily female, the distribution in racial and socioeconomic demographics and major choice accurately reflected the demographics of the greater Northwestern student body. In the Northwestern Class of 2020, 13.6% of students are Hispanic or Latino (of any race), 46% are non-Latino white, 8.5% are African-American or Black, and 20% are Asian-American ("Diversity: Undergraduate Admissions").

Northwestern students, as well as the students in my survey sample, overwhelmingly come from wealthier families. The median family income of Northwestern students is \$171,200; 14% of students have family incomes in the top 1% (approximately \$630,000 or more a year), 41% come from the top 5% (\$210,000+), 66% from the top quintile (\$110,000+), and only 3.7% from the bottom 20% (\$20,000 or less a year) ("Economic Diversity and Student Outcomes at Northwestern University"; CNN Money). 41% of the students in my sample come from families making \$200,000 or more, about the top 5% of US household income, and 64% come from approximately the top 10% of the US income distribution, while only 16% come from families that make \$50,000 or less a year; the demographics of my sample reflect Northwestern's demographics. Thus, the survey recruitment appeared to have succeeded in approximating a random selection process.

Demographics

I asked for demographic data from the participant, including race, gender, family income, financial aid status, GPA range, major and year in school. Any sophomores or juniors were automatically excluded from the study. The other demographic variables served as control variables, as all of them could affect career choice. Rivera (2015) found that many employees of consulting, finance, and law firms hire based on intangible or vague characteristics, like a candidate's "fit", that may unintentionally discriminate based on race, gender, or income. Further, the possibility of such discrimination may impact a candidate's choice to even apply for such a job in the first place.

Majors were classified into five categories, Natural Sciences, Mathematical and Computer Sciences, Social Sciences, Humanities,[4] and Undecided/Other. If a student had two majors that spanned multiple categories (n = 9), then I classified her according to the first major.

The most common major was economics (n=24), followed by neuroscience (n=9), biology (n=7), computer science (n=6), psychology (n=6) and political science (n=5). These major

[3]Northwestern's School of Arts and Sciences

[4]**Natural Sciences**: Neuroscience, Physics, Biology, Chemistry, Environmental Science
Math/Comp Sci: Mathematics, Mathematical Methods for the Social Sciences (MMSS), Statistics, Cognitive Science, Computer Science
Social Sciences: Economics, Psychology, Sociology, Political Science, Anthropology
Humanities: Art History, English, Gender Studies, History, Latino Studies, Legal Studies and Creative Writing

Table 1: Descriptive Sample Characteristics

Demographic Characteristics	Frequency	*Share of Total*
Gender		
Female	70	*73*
Male	26	*27*
Ethnicity		
White (Non-Latino)	42	*43*
African-American/Black	6	*6*
Asian	24	*25*
Latino or Hispanic (all races)	13	*13*
Multiracial	7	*7*
Family Income		
< \$50,000	11	*12*
\$50,000-\$99,999	22	*24*
\$100,000-\$149,999	15	*17*
\$150,000-\$199,999	5	*6*
\$200,000-\$399,999	23	*26*
\$400,000+	14	*16*
On Financial Aid		
Yes	48	*50*
No	49	*50*
Major Category		
Natural Sciences	19	*20*
Math/Comp Sci	14	*14*
Social Sciences	41	*42*
Humanities	10	*10*
GPA		
< 3.3	14	*14*
3.31-3.6	36	*38*
3.61-3.8	32	*34*
3.81+	12	*13*
Year in College		
First Year	50	*52*
Senior	47	*48*
Applied to Finance Job		
Yes	16	*16*
No	81	*84*
Applied to Consulting Job		
Yes	37	*38*
No	60	*62*

Notes: Numbers may not add up to 97 (total sample) due to the exclusion of all "did not respond" or "other" responses.

choices reflect those of the greater Northwestern population; economics, psychology, biology and political science were the four most popular Weinberg majors for the Class of 2015 (neuroscience was not yet a major), making up 27%, 11%, 10% and 10%, respectively, of all Weinberg degrees awarded ("Northwestern Data Book").

Competitiveness

Rivera and Binder found consulting and finance recruitment triggers competitive tendencies in elite college students. Thus, I wished to test how competitiveness influenced a student's decision to apply for the consulting or finance industries. To do so, I chose 8 of 26 items on a scale designed to test hyper-competitiveness (a desire to compete and win at any cost as a means of boosting feelings of self-worth) by Ryckman, Hammer, Kaczor, & Gold (1990). Respondents were invited to indicate their level of agreement with the 8 statements, from "strongly disagree" to "strongly agree"; four of the items were reverse-scaled. After adjusting the scores so that a higher score indicated a greater propensity towards competitiveness, I averaged and normalized the scores for each participant.

Prestige/Social Status

I used contingent valuation, frequently used by economists to value nonmarket amenities (Carson, 2000) to measure the importance of job industry prestige to each student. I asked the following:

> Imagine the following hypothetical situation: during fall quarter of your senior year, you are informed that you have been offered **Job A, a medium-prestige job that pays $52,000 (the average salary of a 2015 Weinberg graduate)**. Now imagine that you are also considering two other job options: **Job B and Job C. You have already received your offer from Job B**, while **you do not yet know whether you will be offered Job C** because that company only makes offers in late spring. Assume that the work you do at each of the jobs would offer you an equal amount of satisfaction. Please enter the minimum salary that Job B or Job C would have to offer in order for you to reject Job A for one of the other jobs.

I also presented an offer from a low-prestige job and one from a high prestige job. To compute this measure, I calculated the difference between the minimum salary given for the "low-prestige" job and the minimum salary of the "high-prestige" job. I then normalized this difference across subjects.

Risk Aversion

To measure each student's aversion to risk, I posed two questions, modeled after Kahneman and Tversky's research on prospect theory:

1. Imagine you are participating in a lottery and are asked to choose between several potential scenarios. Would you rather choose:
1. $100 for sure,
2. 50% chance of winning $200 and 50% chance of winning nothing,
3. 20% chance of winning $500 and 80% chance of winning nothing,
4. 10% chance of winning $1000 and 90% chance of winning nothing
5. 5% chance of winning $2000 and 95% chance of winning nothing?

2. Imagine you are playing the same game, with different amounts of money. Now, would you choose:
1. $15 for sure,
2. 50% chance of winning $35 and 50% chance of winning nothing,
3. 20% chance of winning $93 and 80% chance of winning nothing,
4. 10% chance of winning $210 and 90% chance of winning nothing
5. 5% chance of winning $515 and 95% chance of winning nothing?

In the first question, each answer has the same expected value, but the latter answers are riskier. In the second question, the riskier answers have a higher expected value. I included graphics to better facilitate the understanding of my participants. To calculate a measure of risk aversion, I assigned each answer a value from 1-5, with 1 being the "safest" option and 5 being the "riskiest" option.

Job Expectations

I elicited respondents' subjective beliefs about their chances of receiving a job offer in finance, consulting, or a third field (considered to be their "next best" alternative), as well as their expectations about jobs in each field. Following the methodology employed by several economists, I asked for subjective cumulative distributions for expectations about hours and total compensation, conditional on job industry (Armantier et al., 2016, Domintiz & Manski, 1997).

The question wording was adapted from Zafar (2012) and Dominitz and Manski (1997). Students were first asked to gauge the likelihood of their receiving an offer in consulting, finance, or an alternative industry they chose as their next-best option.[5] Students were first asked to gauge the likelihood of their receiving an offer in consulting, finance, or the alternative industry.

I then elicited each student's expectations about hours and total compensation.[6] I also elicited expectations for $50,000, $75,000, and $100,000 a year, and 70 and 90 hours per week on average.

I further requested that students indicate, on a scale of 0-100, how satisfied they expect

[5] I asked students to indicate which industry (chosen from a list of 8, plus an "Other" field) they would be most likely to work in following graduation. If students chose consulting or finance, I asked them to choose their next best alternative, and if they chose consulting or finance in that question, I asked them to pick their third best alternative.

[6] I did this by asking the following question for each industry type (Finance, Consulting, then the third industry each student had chosen as their best option excluding finance or consulting): *Imagine after graduation you work full time in the finance, consulting, or [Alternate Industry] industry. What is the probability your total compensation would be $30,000 OR HIGHER a year (the probability you would work 50 hours or more a year on average), given that you are working a job in Finance/Consulting/[Alternate Industry]?*

to be working a job in finance, consulting, or the alternate industry. Finally, I elicited expectations about future job offers. Many students take jobs in finance or consulting, only expecting to work there for two or so years, because they believe they will receive high-paying or prestigious job offers after they "put in their time", so to speak, or they wish to move onto jobs that may offer higher job satisfaction. Here, I used higher salaries in my questions, because expected salaries should most likely rise over time as students gain experience. I told students to first imagine they had been working for a few years in each type of industry (finance, consulting, or the alternate industry) and were now searching for a new job. I then posed the following question to them: *What is the probability you would receive a salary offer of $50,000/ $75,000/ $150,000 OR HIGHER a year, given your current job is in Finance/Consulting/[Alternative Industry]?* I also asked for expected job satisfaction in this hypothetical future job, given that the subject is currently working in finance, consulting or their alternative industry.

To calculate expected compensation, I fit the data to a lognormal distribution, as in several studies of income expectations (Domintiz & Manski, 1997, p.10). For each student, I interpreted her answers to the four expectations questions as points on her cumulative distribution function (CDF) for expected compensation post-graduation. I fit a parametric distribution for each respondent following the procedure established by Domintiz and Manski (1997, p.9-10). For k = \$30K, \$50K, \$75K, and \$100K, let F_{ikn} denote the probability that each individual i expects to receive an income less than amount k, given job industry$n$. Also, let $F(Y; m; s)$ denote the log-normal CDF with mean m and standard deviation s, evaluated at point Y. To determine the best-fitting parametric distribution, I modeled using m ∈ [25,000;150,000], in intervals of 500, and s ∈ [1000; 50,000], using intervals of 1000. I then found the specific $(m_i;s_i)$ that minimizes the least-squares equation:

$$\sum_{k=1}^{4}[F_{ikn} - F(Y_{ikn}; m; s)]^2. \tag{17}$$

I analyzed the data using m_i and s_i as the mean and standard deviation, respectively, of the expected compensation of each individual i. I used the same method to find the best-fitting log-normal distribution and the associated mean and standard deviation for each student's expected future salary offers, conditional on job industry n.

Finally, to estimate the mean and standard deviation of expected hours worked per week, I assumed that the data has an underlying generalized Beta distribution, following the approach used in the Federal Reserve's Survey of Consumer Expectations (Armantier et al., 2016, p.29). The Beta distribution is useful in parametric regression when the distribution of x (in this case, number of hours worked per week) has a minimum and a maximum. I assumed that the minimum number of hours worked per week was 40, and the maximum was 100. Even in investment banking, which is one of the most hours-intensive industries, employees rarely work over 90 hours per week (Butcher, February 2016). Here, $B(Y; m; s)$ is the Beta distribution, and k=50 hours, 70 hours, and 90 hours per week on average. I modeled $B(Y_{ikn}; m; s)$ using $m \in$ [40,100], in intervals of 0.5 hours, and $s \in$ [1; 20],using intervals of 1. I again used the least- squares equation, finding the $(m_i;s_i)$ that minimized:

$$\sum_{k=1}^{4}[B_{ikn} - B(Y_{ikn}; m; s)]^2. \tag{18}$$

Here, the mean is a measure of central tendency, whereas the standard deviation is a measure of spread. The higher the mean, the more a student believes that she will earn; the higher a standard deviation, the more uncertain a student is about his future income.

Outcome Variables

I asked seniors to indicate in which industries they had applied or were planning on applying to full time jobs, and from which industries had they received full-time offers. Freshmen were asked to indicate the industries they were planning to apply to for internships or full time jobs during their time at Northwestern. I also asked seniors in which industries they had had internships the previous summer, if any.

4 Results and Discussion

Table 2: Expectations Data

			Mean			
			(SE)			
Expected...	Finance	Consulting	Other	F-C Difference[7]	C-O Difference	F-O Difference
Compensation	\$85,326	\$80,510	\$64,094	\$4,872**	\$16,627***	\$21,236***
	(2591)	*(2349)*	*(2601)*	*(1600)*	*(3049)*	*(3116)*
Salary Offers	\$99,226	\$93,194	\$71,263	\$6,043**	\$23,684***	\$30,066***
	(3827)	*(3836)*	*(3819)*	*(2189)*	*(4396)*	*(4318)*
Hours Worked	71.67	68.92	63.54	2.55**	5.38***	8.00***
	(1.33)	*(1.424)*	*(1.39)*	*(0.89)*	*(1.54)*	*(1.44)*
Job Satisfaction	34.71	42.14	74.02	-7.43**	-31.87***	-39.31***
	(2.59)	*(2.72)*	*(1.77)*	*(2.26)*	*(3.47)*	*(3.29)*
Future Job Satisfaction	46.67	51.11	68.94	-4.44*	-17.82***	-22.27***
	(2.71)	*(2.55)*	*(2.23)*	*(2.01)*	*(3.36)*	*(3.56)*

Notes: "Other" refers to the "best alternative" industry and varies for each individual; asterisks indicate the p-value of a paired t-test. $p = 0.000 < *** < 0.001 < ** < 0.01 < * < 0.05$. Expected job satisfaction is on a scale of 0-100.

Tables 2, 3, 4, and 5 report the computed mean, standard deviations, and distribution of compensation and other expectations of the students in the sample for each type of industry– finance, consulting, and the "next best" alternative that each student chose. These data indicate that students believe, on average, that finance pays significantly more than other industries, with consulting as a close second. However, there is significant heterogeneity in expectations among students; although finance and consulting compensation means cluster in the high end of the salary spectrum, there are several students whose expected compensation was on the low end, under \$50,000. Further, the estimated standard deviations of students' income distributions were extremely high, with most standard deviations estimated at over

Table 3: Distribution of Compensation Expectations: Finance

	Mean (m_i)					Total #
Standard Deviation (s_i)	[25, 50)	[50, 75)	[75, 100)	[100, 125)	[125, 150)	
[1,10)	2	1	1	3	0	7
$[10, 20)$	0	1	10	0	0	11
$[20, 30)$	0	5	4	1	0	10
$[30, 40)$	1	3	5	4	0	13
$[40, 50)$	5	12	19	13	5	54
Total	8	22	39	21	5	95

Notes: Table presents the number of respondents whose distribution of compensation expectations for a finance job have mean (m_i) and standard deviation (s_i). The units of m_i and s_i are in thousands of dollars.

Table 4: Distribution of Compensation Expectations: Consulting

	Mean (m_i)					Total #
Standard Deviation (s_i)	[25, 50)	[50, 75)	[75, 100)	[100, 125)	[125, 150)	
[1,10)	1	3	2	2	0	8
$[10, 20)$	0	1	7	0	0	8
$[20, 30)$	1	3	3	4	0	11
$[30, 40)$	2	2	8	1	0	13
$[40, 50)$	7	15	18	13	2	55
Total	11	24	38	20	2	95

Notes: The units of m_i and s_i are in thousands of dollars.

Table 5: Distribution of Compensation Expectations: Other

	Mean (m_i)					Total #
Standard Deviation (s_i)	[25, 50)	[50, 75)	[75, 100)	[100, 125)	[125, 150)	
[1,10)	3	1	0	0	0	4
$[10, 20)$	9	5	3	0	0	17
$[20, 30)$	4	7	2	1	0	14
$[30, 40)$	5	6	4	1	0	16
$[40, 50)$	7	18	13	4	2	44
Total	28	37	22	6	2	95

Notes: Other refers to the "best alternative" industry and varies for each person. The units of m_i and s_i are in thousands of dollars.

$40,000. Because the standard deviation is a measure of spread, the higher a student's estimated standard deviation, the more uncertain he is about his future income. While students expected that they would earn high salaries in consulting and finance, higher than the salaries expected in other job options, they were clearly unsure about these salaries.

Although the students in this study faced a great deal of uncertainty about their future compensations, this is not an unusual outcome; pay in finance and consulting is highly variable, with well-known and prestigious banks or consulting groups paying a great deal more than their lesser known counterparts. Because of this, comparison of students' beliefs with objective data can be a difficult task; salaries can only be estimated, not fully assessed. Among 19 of the most prestigious consulting firms, starting base salaries ranged from $65,000 to $90,000, and bonuses from $0-$15,500, so that 1st year Analysts could expect to earn anywhere from $65,000 to $101,000, not including signing, relocation or stock bonuses ("2017 Management Consulting Salaries for Undergraduates, MBA/Grads, and Interns"). The Bureau of Labor Statistics reported the 2016 median pay for Management Analysts/Consultants to be $81,330, although their sample includes analysts with varying levels of education and experience, not just recent graduates.

Among financial firms, the pay is even more capricious—although the base salary of financial services analysts ranges from $72,500 to $92,750, bonuses make up a higher proportion of total compensation than in management consulting ("Robert Half Salary Guide 2017"). The Bureau of Labor Statistics reported the 2016 median pay for Financial Analysts as $81,760, just slightly higher than consulting. In general, finance pays more than consulting, particularly with its higher bonuses, and these two fields pay more than most, although not all, other industries employing college graduates. Among my sample, the average expected consulting salary was $80,510, while it was $85,326 for finance; thus, the students' expectations about finance and consulting seemed rational, even a bit low. They appear to be overestimating the salaries in their other job opportunities; although the average starting salary among 2015 Weinberg graduates was $52,348, the average salary in my sample (excluding consulting or finance) was $64,094 (Northwestern Career Services, 2016).

Students also had sensible expectations about other job characteristics, including future hours worked. Although there has been little empirical study of this subject, anecdotal evidence suggests that both bankers and consultants put in long days at the office, with bankers working more hours ("Management Consulting vs. Investment Banking"). This is reflected by the expectations data from my sample, although clearly Northwestern students expect to work long hours regardless; even in other industries, they expected to work, on average, more than 60 hours a week.

Previous research on students' expectations about the labor market has examined the extent to which students can predict (usually wage) returns in the labor market from majors; researchers have found that while students can accurately rank majors by their returns on investment, they have difficulty predicting specific returns (Baker et al., 2017). Further, students' heterogeneous beliefs about their uncertain futures are formed and revised as they learn additional information. Zafar (2011) found that although college students tend to overestimate their future academic performance, when they receive feedback about the accuracy of their beliefs, they adjust their expectations accordingly. Although students receive far more information about academic performance than job characteristics, this feedback mechanism should still work to adjust students' beliefs and reduce uncertainty as they obtain more information. As students advance in college, and learn from older peers about future job options, their feedback mechanism should adjust their beliefs to be more accurate. As well, those who have interned in finance or consulting should have more accurate or less uncertain beliefs about their future.

Indeed, when the sample is restricted to seniors only, the average expected finance and consulting salaries increase by about \$5000 each (to \$90,656 and \$85,778 respectively), whereas the "other" expected salaries decrease to \$59,619, closer to the average starting salary of a Weinberg graduate. As well, the estimated standard deviations for each of the three job categories decrease significantly ($p < 0.002$), indicating reduced uncertainty. Although there are too few finance or consulting interns (n=3 and n=8 respectively) to perform statistical analysis, similar patterns appeared—expected finance or consulting salary increased, and standard deviations decreased. The data from this sample thus support previous research; although students are not perfectly accurate or rational in their expectations, they respond positively to feedback and adjust their beliefs accordingly, and their expectations are, for the most part, sensible and proportional.

Difference in Means

The table below shows the means and standard errors (in parentheses) of various variables, with the sample stratified by application decision. In reference to the notation in the derivation of the choice model, k=1 means that a student has applied or is planning to apply to jobs in those fields; k=0 means that he has not and is not planning to do so. The results of a (two- tailed) difference of means test between those planning on applying to a job in finance or consulting (i.e. k=1) and those not planning on applying (k=0) are also reproduced below, with significant p-values indicated by asterisks ($0.000 < *** < 0.001 < ** < 0.01 < * < 0.05 <^{+} < 0.10$).

Table 6: Difference in Means *(SE)* By Application Decision

Variable	Finance (k=0)	Finance (k=1)	Difference in Means	Consulting (k=0)	Consulting (k=1)	Difference in Means
Prestige	0.03	-0.15	0.18	0.19	-0.11	-0.30
	(0.12)	*(0.07)*	*(0.27)*	*(0.25)*	*(0.04)*	*(0.20)*
Risk Aversion	-0.04	0.22	-0.27	-0.03	0.05	-0.08
	(0.10)	*(0.26)*	*(0.27)*	*(0.11)*	*(0.19)*	*(0.21)*
Income	3.67	4.64	-0.97	3.5	4.35	-0.85^{+}
	(0.22)	*(0.63)*	*(0.59)*	*(0.25)*	*(0.38)*	*(0.44)*
Competitive	0.039	-0.19	0.23	-0.06	0.10	-0.15
	(0.11)	*(0.27)*	*(0.27)*	*(0.13)*	*(0.16)*	*(0.21)*
Chance of Receiving Job Offer	0.26	0.47	-0.21**	0.30	0.57	-0.27***
	(0.02)	*(0.06)*	*(0.06)*	*(0.03)*	*(0.04)*	*(0.05)*

Notes: The prestige, risk aversion, and competitiveness measures were normalized across the sample so that mean was 0 and standard deviation was 1. Income is on a seven-point scale: 1= <\$50k, 2=[\$50k, \$100k), 3=[\$100k, \$150k), 4=[\$150k, \$200k), 6=(\$250k, \$400k], 7= \$400k+

Model #1 and # 2: Application Decisions

The coefficients on the variables of each model (standard error in parentheses) are reproduced on the next page, in Table 7. Some variables perfectly predicted failure or success, and were thus omitted; they are marked by a 0.

The results of the models do not yield much by way of predictive analysis, but they are illuminating nonetheless. Because there were far more people (n=37) who had or were planning to apply to consulting jobs than those applying to finance (n=16), the consulting models yieled more interesting results.

The results of the first model indicated that females are less likely to apply to finance jobs, even when controlling for other potentially relevant factors (like GPA or major). This result may be a cause as well as an effect of the fact that there are fewer women than men in finance, especially at the senior levels (Ritholtz, 2016). Women may choose not to apply to finance because it does not satisfy their job preferences, or they may choose not to apply because they are discouraged by the lack of female representation, particularly at higher levels. It is difficult to untangle this cause and effect with a mere statistical analysis, particularly with the small sample size in this study. None of the other demographic variables were significant.

In my model, being Asian, a social sciences or math/computer sciences major was positively correlated with the decision to apply to consulting firms. Expected future salary offers were also positively and significantly correlated with a positive application decision. The coefficient on expected starting compensation was not significant; however, because expected starting compensation and expected future salary offers in consulting were strongly correlated ($\rho = 0.41$), this may be due to the relatively stronger impact of future salary offers on applications decisions.

GPA and senior status were negatively correlated with the decision to apply for a consulting job. The negative correlation on GPA could be due to multiple potential factors: the students with higher GPAs could major in subjects perceived as "easier" and thus less attractive, and so they are steered away from highly competitive jobs like consulting, perhaps the students in these majors have heterogenous preferences that are not accurately captured by my model, or perhaps those with the highest GPAs are on track to eventually attend graduate school, and thus do not believe that consulting is the best path for their goals.

While previous research has asserted various, outside factors for the intense attraction elite college students feel for consulting and finance jobs, my findings seemed to indicate that demographics were the main drivers behind an applicant's decision to apply to consulting or finance. In prior studies examining the impact of expectations on major choices, researchers have found that non-monetary factors, especially enjoyment, play a larger role in decisions than monetary or labor market factors do (Zafar, 2013; Beffy et al., 2012, Baker et al., 2017). However, my study did not find this same effect; while job satisfaction in finance or consulting differed significantly when the sample was stratified by intent to apply, it was not a significant factor in the applications model. This may indicate that students place a higher value on enjoyment or other non-monetary factors when deciding on a major.

When Rivera (2015) examined this question, she underlined the uncertainty that many students felt upon facing graduation and the comfort of a prestigious, high paying lifestyle, while Ho, similarly, found that a primary factor in pursuing a Wall Street financial career was a desire for "elite-ness". Although I could not measure students' anxiety about graduation, I did attempt to measure their aversion to risk, which could be correlated with job decisions that involve little risk, like finance and consulting. I also elicited their beliefs about compensation, hours, and job satisfaction in consulting or finance, none of which appeared

Table 7: Log-Likelihood Estimation: Logistic Regression

Dependent Variable:	(1): Finance Application	(2): Consulting Application	(3): Consulting Offer
White	-0.78	6.72	14.93
	(7.05)	*(9.42)*	*(3296.98)*
Asian	15.38	23.82*	17.29
	(8.32)	*(11.61)*	*(3296.98)*
Black	18.37	5.17	18.21
	(12.26)	*(8.30)*	*(3296.98)*
Latino/a	0(omitted)	0 (omitted)	0 (omitted)
	N/A	*N/A*	*N/A*
Female	-13.88*	1.13	-0.79
	(6.59)	*(3.37)*	*(1.30)*
Income	0.45	1.19	0.51
	(1.66)	*(1.00)*	*(0.26)**
GPA	6.69	-6.13*	1.46
	(3.99)	*(3.08)*	*(0.81)*
Natural Sciences Major	0 (omitted)	5.32	
	N/A	*(7.42)*	
Social Sciences Major	5.56	31.17**	
	(13.22)	*(12.04)*	
Math/Comp Sci Major	7.48	27.45*	
	(15.85)	*(11.92)*	
Humanities Major	0 (omitted)	0 (predicted failure perfectly)	
	N/A	*N/A*	
Senior	-0.25	-17.12**	
	(6.72)	*(6.45)*	
Value Prestige	-9.92	15.00	1.67
	(16.12)	*(8.68)*	*(1.31)*
Risk Aversion	2.92	-0.70	-1.28
	(1.90)	*(2.49)*	*(0.81)*
Competitiveness	-3.63	0.74	-0.44
	(3.59)	*(1.90)*	*(0.55)*
Expected Compensation	0.06	-0.21*	
	(0.17)	*(0.12)*	
Expected Future Salary	-0.21	0.29	
	(0.16)	*(0.12)**	
Expected Hours	-0.17	-0.11	
	(0.34)	*(0.17)*	
Job Satisfaction		0.05	
	(0.18)	*(0.09)*	
Future Job Satisfaction	0.03	-0.08	
	(0.19)	*(0.11)*	
Constant	-2.89*	-2.89*	-23.5
	(1.22)	*(1.16)*	*(3296.98)*

Notes: Asterisks indicate the p-value: $0.000 < *** < 0.001 < ** < 0.01 < * < 0.05$. There were not enough offers from finance to estimate Model #3 for finance offers.

to be significant drivers of their opinion—besides potential salary offers after a few years in consulting. Nor did the utility of prestige seem to differ across those who decided to apply for a consulting or finance job and those who did not wish to do so. The same pattern reoccurred with competitiveness and aversion to risk; there was little to no difference in these measures when the sample was stratified by application decision.

Instead, another factor appeared as the largest and most significant difference between the two groups—self-assessed likelihood of receiving a job offer. In a difference of means test, those who applied to finance or consulting believed, on average, that they were nearly twice as likely to receive a job offer. As previously mentioned, I found that major groupings and some demographic characteristics, which may serve as proxies for unobserved variables, were significant in applications decisions. Notably, the negative correlation of senior status with consulting applications indicates that freshmen were more likely to intend on applying to consulting jobs, when all the other variables are held constant, which seems to contradict Binder's (2015) findings that immersion in university culture is necessary to trigger the desire for consulting or finance jobs. However, several months in Northwestern's culture could be enough for this immersion to occur; future research should instead examine freshmen at the very beginning of their college career.

Model # 3 examined the role of demographic and personal characteristics in receiving a consulting offer. The only significant variable was income; this somewhat supports Rivera's (2015) hypothesis that wealthy white men have a leg up in consulting, finance and law recruitment. I did not find that race made a difference, positive or negative, in who received a consulting offer—but that may be due to the small sample size, and the even smaller number of blacks (n = 6) who participated in the study. As well, no Latinos received consulting offers, so they were omitted from the analysis. Finally, the racial disparities that Rivera noted in her study may be mediated by the relationship between income and job recruitment; since blacks and Latinos are more likely to be low-income than whites or Asians, income disparities may account for much of the racial variance in finance or consulting. It is also important to note that this model was not restricted only to those who applied for a consulting job, because the sample size would be too small to ascertain meaningful results. Thus, the impact of income may be due to discrimination during the recruitment process, or it may be because lower-income students are less likely to apply to consulting jobs in the first place. Further research should stratify the sample by application decision before data analysis to disentangle these two potential causes.

5 Conclusion

As a relatively new area of research, this study was subject to several limitations. I designed the survey, and although I based the questions off of current research, they could be greatly improved. In future research, the questions about prestige and expectations should be written in a clearer and easily understandable way, as the concepts of the probabilistic expectations or contingent valuation often sound foreign at first sight. As well, the other questions should be tested and refined to verify t their reliability Further, in this study, the sample size was too small to draw many firm conclusions, particularly in studying finance applications; in future research, the sample size should be larger, which will improve the statistical power of the study. Finally, the applications model was rather simplistic, as it was an entirely new model; it implicitly assumed that students can only apply to one job each. In the future, such models should also examine the possibility of applying to bundles of jobs applications, and how students will compare the cost-benefit analysis of each bundle.

The data are consistent with many theories about job choice, but I would speculate that most students at elite universities like Northwestern are already competitive and value prestige, but their heterogenous preferences and potentially unobservable characteristics draw them either towards a job like finance or consulting or a similar job in business, or into another field entirely. Those whose preferences coincide with jobs like consulting or finance will choose which fields and which jobs to apply to as a function of several factors, including the opportunities available after their first job, as well as their beliefs about the likelihood of receiving a job offer.

Overall, the study supports previous findings about expectations. Previous studies looked at expectations conditional on schooling choices; while this study specifically examined expectations about job outcomes, it supported the hypothesis that students adjust to new information and become more accurate and less uncertain over time. This study also found that the most powerful explanatory variables in the job application decisions are demographic, rather than structural as previous sociological studies have asserted. Of course, the power of the demographic variables could be meditated by some other factor in consulting or finance jobs; for example, perhaps higher-income students are more likely to be drawn to the most prestigious jobs–currently finance and consulting. This does immediately suggest potential policy solutions, but as schools recruit more low- and middle-income students, the number of students choosing careers in finance and consulting may naturally decrease. To my knowledge, this study was the first to apply current research in expectations to job rather than schooling choices. Further research is needed to understand the process by which students choose their eventual post-college career.

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