The price of morals: an empirical investigation of industry sectors and perceptions of moral satisfaction–do business economists pay for morally satisfying employment?

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THE PRICE OF MORALS: AN EMPIRICAL INVESTIGATION OF INDUSTRY SECTORS AND PERCEPTIONS OF MORAL SATISFACTION— DO BUSINESS ECONOMISTS PAY FOR MORALLY SATISFYING EMPLOYMENT?

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Abstract

Many factors contribute to choice of employment other than compensation. This study extends the current literature by testing whether a compensating differential exists in employment sectors deemed morally satisfying. Data from the 1998 salary survey of the National Association for Business Economics (NABE) and sector rankings addressing moral satisfaction provided by a sample of college students are used in a regression analysis. When we include a self-selection correction in the salary regression, business economists in the for-profit sector earned almost 150 percent more than their nonprofit counterparts, once controlling for the choice of employment sector and human capital variables. Average wages were economically and statistically higher for business economists situated in the middle and low moral satisfaction groupings compared to those in the high moral satisfaction sector. Results suggest a compensating differential for those employed in morally satisfying industry sectors.

I. Introduction

In every first economics course, students are exposed to a simple optimization model to explain and predict economic behavior. The model assumes that rational, self-interested actors with access to perfect information maximize utility, in the case of consumers, or profits, in the case of firms. In more advanced models, economists include desires for social goals in the utility function in order to explain actions that, on the surface, appear contrary to the assumption of rational self-interest. Therefore, the individual who gives dollars to charity, donates time to a soup kitchen, or provides aid to someone in distress, does so because these actions are part of a utility set to be maximized.

In the labor economics field, the study of unselfish behavior has been examined in the context of a tradeoff between pecuniary benefits and a sense of moral satisfaction. Economists tell a compensating wage differential story and examine the tradeoff in choosing nonprofit employment (Weisbrod 1983; Handy and Katz 1998) or employment deemed morally satisfying (Frank 1996). The present study extends the current literature by testing whether a compensating differential exists for business economists. Using data from the 1998 salary survey of the National Association for Business Economics (NABE), a professional trade association consisting of economists employed in academic, governmental, and private sector positions, we use regression analysis to test whether business economists experience a compensating differential for employment perceived as morally satisfying.

The examination of a wage-moral satisfaction tradeoff is not easy for several reasons. First, it may be that individuals who choose employment that provides a sense of moral satisfaction may base their selection on a limited set of career opportunities. That is, some individuals choose employment we identify as "morally satisfying" either because of preferences toward morally satisfying work or because they have limited employment opportunities. This problem results in self-selection bias, which has been studied by John H. Goddeeris (1988) in the context of public sector lawyers. Sec-

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ond, the term "moral satisfaction" is ambiguous and is often arbitrarily defined by the researcher. Despite these problems, our study brings to light new information on the wage-moral satisfaction tradeoff. We examine the self-selection issues empirically and vary the definition of moral satisfaction to find both are important elements in consideration of the wage-moral satisfaction tradeoff.

II. Hedonic Wage Theory and Moral Satisfaction

A. Hedonic Wage Theory and Moral Satisfaction

Economists explain wage differentials as a result of productivity differences, market power, discrimination, market factors, and preferences for particular employment characteristics. Economic theory uses utility maximizing outcomes as a means of revealing preferences. Thus, for example, when an individual is willing to accept a lower salary for a benefit such as low risk, the resulting combination of pecuniary and nonpecuniary benefits reveals the individual's preference for safety. In other words, the actual selection of an occupation and an employer will be influenced by individual tastes and preferences for various employment characteristics.

Hedonic wage theory examines how the tradeoff between wages and other benefits leads to matches between employees, who maximize utility, and employers, who maximize profits. In the context of our study, we assume that wages and moral satisfaction are goods to be traded: if one desires morally satisfying employment, then that individual would be willing to trade wages for the benefit. As depicted in Figure 1, Individual 1 is just such a person (Indifference Curve I_1). Individuals 2 & 3 prefer higher wages and relatively less moral satisfaction. Individuals are matched to the sectors with the combination of wages and moral satisfaction that allow the individuals the highest level of utility.

Hedonic wage theory assumes that firms operate at zero economic profits due to the assumption of perfect competition. The concave shape of the isoprofit curves represents the diminishing marginal returns to providing moral satisfaction. As with many benefits, firms incur increasing costs with provision of additional moral satisfaction. Moral satisfaction choices likely drive costs upward as the firm's options to make marginal improvements decline. For example, since the introduction of managed care, many nurses and doctors have expressed frustration with the limitations imposed on them as heath care providers. In order to control costs, managed care firms may choose to limit the number of tests that may be performed by a physician, may increase the ratio of patients per nurse, or limit the number of days in a hospital. For some healthcare providers, these constraints are morally challenging and, as such, may lead to some doctors and nurses choosing a lower paying position with a firm that is less limiting. Accordingly, if the managed care provider offered greater moral satisfaction to these workers, it would require a greater cost to the firm.

We examine how individuals match to sectors that may yield different levels of moral satisfaction. In Figure 1, Sector 1 has relatively low wages, but provides employment with high levels of moral satisfaction, as denoted by the sector's isoprofit curve (S_1); Sectors 2 & 3 offer relatively high wages but less sense of moral satisfaction (S_2 & S_3). Sectors 2 & 3 find it relatively costly to promote moral satisfaction (e.g., a securities dealer needs highly competitive brokers who can sell the featured financial products regardless of the social good). Sector 1 firms may be able to promote moral satisfaction at low cost due to their very nature (e.g., employment that improves the living conditions of the poor, disadvantaged, or exploited) or because the sector cannot provide high wages and therefore promotes moral satisfaction to offset superior monetary rewards of the private sector (greater variety and challenge). Ultimately, the sectors and individuals achieve their maximizing goals where profits and utility are maximized, given the constraint of the matching process.

If Figure 1 included an infinite number of sectors and workers involved in the matching process described above, an equilibrium market locus, or the hedonic price equation (HPE), results. The HPE represents the feasible offers firms can extend and employees are willing to accept. In other words, the HPE presents the combination of wages and moral satisfaction that allows employees choices in terms of their preferences and strengths.

Consistent with previous studies (Wesbrod 1983, Goddeeris 1988) that test for a compensating differential among lawyers choosing between private sec-

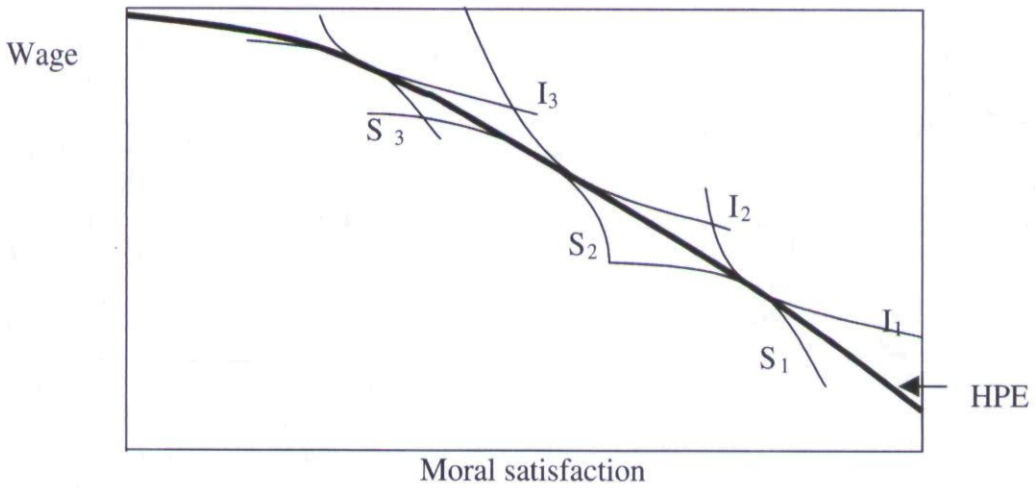

FIGURE 1. The Wage-Moral Satisfaction Tradeoff

tor and public sector employment, we have decided to focus on industry sector as opposed to occupation as a means of testing moral satisfaction and a possible compensating differential. Our study benefits from analysis of sector choice. The survey respondents are business economists whose actual employment duties vary. The set of respondents is fairly homogeneous in terms of training and education, particularly when compared to other studies, such as Frank (1996), who uses graduating seniors from Cornell. We consider the perception of moral satisfaction for industry sectors, such as "Financial Institutions" and "Government," as opposed to occupational choices of "Banker" and "Bureaucrat." Sector comparison may be more viable in this case because occupational comparisons are certainly limited here.[1] Lawyers can work for the public defender's office or Enron. Public relations professionals can put their knowledge, skills and abilities to work on behalf of a cause (e.g., Cystic Fibrosis) or they can work on behalf of Phillip Morris and contribute to diffusion of life-threatening misinformation. Likewise, economists can be teachers who analyze macro data or they can work for a cigarette manufacturer and analyze macro data.

B. Empirical examinations of moral satisfaction and wages

Empirical research on hedonic wage theory supports the notion that workers trade off some employment characteristics for wages. Rosen (1974) presents evidence that individuals accept lower wages for low-risk jobs.[2] Montgomery et al. (1992) find a compensating wage differential for pensions and Woodbury (1983) finds a tradeoff between wages and fringe benefits. Evidence is weaker regarding the tradeoff regarding other employment attributes, such as longer work hours, unpleasant working conditions, and commute from home (Ehrenberg and Smith 2003).

While not specifically testing for a compensating differential, Mirvis and Hackett (1983) examine work characteristics of various sectors of employment. They consider the for-profit, government, and nonprofit sectors. Their survey reveals that nonprofit workers earn lower salaries but find that their employment offers more intrinsic rewards. These workers are more committed to their work, finding it to be more challenging, more autonomous, and offering greater variety. These findings are similar to those for government employees except government employees report lower levels of autonomy and influence in the workplace. This finding suggests that workers may derive benefits from their employment beyond monetary compensation.[3]

Several papers examine whether the public/private sector choice represents a compensating differential. Handy and Katz (1998) present a theoretical exposition of wage strategies used by nonprofits to attract managers of high quality and high commitment to the organization. The nonprofit's optimal strategy is to offer lower wages than the private sector so only those committed to the organization's cause apply for the job. This strategy permits nonprofits to eliminate monitoring costs. Theoretically, as long as the firm has perfect information about individual ability, it can pay less for managers as

capable as those in the private sector, but who prefer the employment characteristics or mission of the nonprofit organization.[4]

Earlier empirical work examines the preference for public sector employment. Weisbrod (1983) uses a probability model to examine the choice of public sector law over the private sector. Using data on 790 lawyers, Weisbrod finds that as the gap between the expected earnings between the private and public sectors grows, the probability that an individual will land in the private sector increases, suggesting that different preferences among workers in each sector exist. Survey responses in the dataset confirm that lawyers know about the public/private sector salary gap, that the gap does not narrow with time, and that the public sector lawyers have no regrets about their choices even though salaries are lower. Evidence suggests that the gap in preferences may result from a socialization process that occurs in law school (Stover 1989).

Goddeeris (1988) uses a sample from the same lawyer dataset, but estimates a self-selection model suggested by Heckman (1979) to estimate the compensating differential for the choice of public sector law. Like Weisbrod (1983), Goddeeris finds that an increase of the potential earnings gap increases the probability that an individual will choose the private sector. Controlling for self-selection reduces the coefficient related to the two sectors in the earnings equation, but average salary differences are still statistically and economically significant, suggesting self-selection explains much but not the entire differential between private and public sector law.

Frank (1987) observes that the utility maximization framework has proven helpful to economists in understanding and predicting social phenomena relating to economic behavior. However, he argues that increased attention to the empirical specification of the utility function can expand the usefulness of this framework. Two other studies support the idea that specification of the utility function can contribute greater understanding to compensating wage differentials. Marsh and Stafford (1967) examine how professional and intellectual attitudes toward work affect compensation for technical and professional workers in the United States. Using regression analysis they find that academically employed professional and technical workers forego monetary returns relative to their nonacademic, private industry, government and self-employed counterparts. In a more recent study, Frank (1996) asks the question, "Are people fundamentally selfish?" To answer his question, he examines wage differentials for evidence of people's concern for others. His analysis indicates that moral satisfaction as it relates to one's employment provides greater explanatory power regarding wage differentials than do human capital or gender variables.

Frank's finding is intriguing and stimulates our interest in further examination. Our study extends the current literature by utilizing a dataset comprised of more experienced workers who have had the opportunity to evaluate and act on the trade-off between salary and moral satisfaction. The salary data used by Frank (1996) comes from recent Cornell University graduates from across disciplines at the university. It is unlikely that recent college graduates have had sufficient time and the necessary exposure to evaluate fairly the trade-off between moral satisfaction and salary. Accordingly, we argue that our dataset consisting of more experienced workers offers a richer source of information regarding the employment decisions of individual utility maximizing actors.

We can draw a second distinction between the salary datasets. The NABE data reflect salaries of individuals who for whatever reason now identify themselves as business economists. Although educational attainment varies across the sample, the interests and preferences of these individuals seem to have converged in the general occupational category of business economist. In contrast to the perceived convergence of interests and preferences among respondents to the NABE survey, the shared identity of the Cornell alumni used in Frank (1996) diverge at graduation. Accordingly, it is likely that the variation in salary reported by the Cornell alumni is attributable to preferences that are still forming rather than matured as might be the case in an older, more experienced sample of individuals who have chosen to pursue a particular profession.

The preceding literature review suggests that many factors other than compensation contribute to employment sector choice. Nonetheless, the relationship between some of these variables and compensation remains ambiguous. We follow Frank's (1996) methodology but we use compensation data of more experienced business economists compared to Frank's study. In addition, ratings of moral satis-

faction will be standardized to account for differences in variation among raters.[5]

III. Model and Data Description.

The National Association for Business Economics (NABE) conducts a biennial survey of members. We use the 1998 Salary Characteristics Survey from NABE. The original sample consists of 771 returned surveys representing a response rate of 30.7%. However, due to missing information on some observations and our methodology for grouping employment sectors for part of the analysis, the sample is reduced to 440 observations.[6]

The Basic Model

Because the focus of the paper is the HPE and not the structural prices implied by the hedonic price theory, we use a reduced form salary model to capture differences in salaries by sectors.

$$\text{Ln salary}_i = \beta_0 + \beta_1 MoralSatisfaction_i + \beta_2 Grad.\ Deg._i + \beta_3 Female_i + \Sigma_j \beta_j Experience_{ji} + \Sigma_j \beta_j Firmsiz_{ji} + \Sigma_j \beta_j Occupational\ Activity_{ji} + \Sigma_j \beta_j Region_{ji+} + \varepsilon_i \quad (1)$$

where the dependent variable is the natural log of the base annual salary for individual *i*, *Grad. Deg.* is a binary variable set equal to 1 if the individual has at least a Master's degree,[7] *Female* indicates the respondent's gender, and *Experience* is a measure of job tenure, using 9 categories of tenure (experience less than two years is the benchmark category). *Firmsize* is a measure of the size of a firm using the number of employees of the firm to break the firm size into two categories (firm size 1–249 employees is the benchmark category). *Firmsize* is included to control for the observed positive correlation between wages and the number of employees in a firm (Mellow 1982; Schmidt and Zimmermann 1991; Weiss 1966). Although studies attempt to explain this statistical relationship, we are aware of no definitive explanation for the positive correlation (Brown and Medoff 1989; Dunn 1986). *Activity* represents 15 different self-reported occupational activities (listed in Table 2), *Region* represents four regional categories (the South is the benchmark case) and ε_i is an error term. These independent

TABLE 1.
Sector Groupings

Researcher Definition of Profit and Nonprofit		Groupings Using Survey of Undergraduate Students and Factor Analysis		
Profit	Nonprofit	Low Moral Satisfaction	Medium Moral Satisfaction	High Moral Satisfaction
Finan. Inst. (93)	Academic (58)	Manufacturing (45)	Finan. Inst (93)	Publishing (11)
Sec.&Invest. (42)	Nonprft. Resch (15)	Ret/Whole Trade (8)	Sec.&Invest. (42)	Nonprft. Resrch (15)
Publishing (11)	Government (110)	Transportation (8)	Insurance (12)	Academic (58)
Transportation (8)	Trade Assns (38)	Trade Assns (38)	Government (110)	
Insurance (12)				
Ret/Whole Trade (8)				
Manufacturing (45)				
N = 219	N = 221	N = 99	N = 257	N = 84

The sector definitions are as delineated in the 1998 National Association for Business Economists Survey. Subsamples are in parentheses.
Abbreviations:
Finan.Inst. = Financial Institutions
Sec. & Invest. = Securities and Investment
Ret./Whole Trade = Retail and Wholesale Trade
Nonprft. Resch. = Nonprofit Research
Trade Assns = Trade Associations

TABLE 2.
Descriptive Statistics—Salary Survey

Variable	Entire Sample	For Profit	NonProfit	T-stat
Salary	90,929.30	105,475.00	76,514.80	
	(51,401.60)	(61,183.0)	(33,816.40)	6.15*
Ln Salary	11.296	11.429	11.164	
	(0.482)	(0.498)	(0.397)	4.41*
Education > 16	0.505	0.447	0.561	
	(0.501)	(0.498)	(0.497)	–1.76
Experience < 2 Yrs.	0.020	0.027	0.014	
	(0.142)	(0.164)	(0.116)	0.71
Experience 2–4 Yrs.	0.168	0.110	0.050	
	(0.374)	(0.313)	(0.218)	1.71
Experience 5–9 Yrs.	0.141	0.155	0.181	
	(0.348)	(0.363)	(0.386)	–0.53
Experience 10–14 Yrs.	0.159	0.119	0.163	
	(0.366)	(0.324)	(0.370)	–0.98
Experience 15–19 Yrs.	0.205	0.178	0.140	
	(0.404)	(0.383)	(0.348)	–0.80
Experience 20–24 Yrs.	0.118	0.192	0.217	
	(0.323)	(0.395)	(0.413)	–0.49
Experience 25–29 Yrs.	0.061	0.119	0.118	
	(0.240)	(0.050)	(0.323)	0.03
Experience 30–34 Yrs.	0.061	0.050	0.072	
	(0.240)	(0.219)	(0.260)	–0.71
Experience ≥ 35 Yrs.	0.048	0.050	0.045	
	(0.213)	(0.219)	(0.208)	0.18
Consulting	0.030	0.041	0.018	
	(0.170)	(0.199)	(0.134)	–0.459
Corporate Planning	0.045	0.082	0.009	
	(0.209)	(0.275)	(0.095)	1.05
Econometrics Statistics	0.066	0.059	0.072	
	(0.248)	(0.237)	(0.260)	2.75*
Energy Economics	0.027	0.014	0.041	
	(0.163)	(0.117)	(0.198)	–0.41
Financial analysis/planning	0.084	0.132	0.036	
	(0.278)	(0.340)	(0.187)	–1.28
Financial Economics	0.086	0.123	0.050	
	(0.281)	(0.330)	(0.218)	2.71*
General Admin/Mgt.	0.043	0.046	0.047	
	(0.203)	(0.209)	(0.198)	2.04*
General Admin/Economics	0.055	0.041	0.068	
	(0.227)	(0.199)	(0.252)	0.19
Industrial Microeconomics	0.061	0.037	0.086	
	(0.240)	(0.188)	(0.281)	–0.91
International Economics	0.055	0.059	0.050	
	(0.227)	(0.237)	(0.218)	–1.60
Macro forecasting	0.073	0.114	0.032	
	(0.260)	(0.319)	(0.176)	0.33
Marketing Research	0.045	0.050	0.041	
	(0.209)	(0.219)	(0.198)	2.48*
Regional Economics	0.082	0.005	0.149	
	(0.274)	(0.068)	(0.357)	0.35
Teaching	0.091	0.014	0.177	
	(0.288)	(0.117)	(0.382)	–3.94*

(continued on next page)

TABLE 2.
(Continued)

Variable	Entire Sample	For Profit	NonProfit	T-stat
Other Activities	0.189	0.005	0.131	
	(0.392)	(0.068)	(0.338)	–4.83*
Gender (Female = 1)	0.136	0.150	0.122	
	(0.343)	(0.358)	(0.328)	0.32
Firmsize 1–249	0.209	0.247	0.172	
	(0.407)	(0.432)	(0.378)	–1.42
Firmsize 250–4999	0.189	0.320	0.059	
	(0.392)	(0.467)	(0.236)	2.35*
Firmsize ≥ 5000	0.602	0.434	0.769	
	(0.490)	(0.497)	(0.422)	–2.64*
Profit (1 if work for profit org.)	0.498			
	(0.501)			
Moral Satisfaction Low	0.225	0.671	0.172	
	(0.418)	(0.471)	(0.378)	2.76*
Moral Satisfaction Medium	0.584	0.279	0.498	
	(0.493)	(0.449)	(0.501)	1.98*
Moral Satisfaction High	0.191	0.050	0.330	
	(0.393)	(0.219)	(0.471)	–5.88*
Actual–Expected Salary	–2.749	18.807	–24.111	
(Thousands of dollars)	(50.604)	(55.354)	(33.953)	7.23*
North	0.266	0.365	0.172	
	(0.442)	(0.480)	(0.378)	3.20*
South	0.295	0.215	0.376	
	(0.457)	(0.411)	(0.382)	–2.76*
Central	0.289	0.324	0.376	
	(0.454)	(0.469)	(0.485)	1.21
West	0.150	0.105	0.253	
	(0.357)	(0.307)	(0.436)	–1.95
Sample Size	440	219	221	

Data from the National Association for Business Economics, 1998. Standard Deviations in parentheses. T-statistics test the difference in the means between profit and nonprofit sectors, and '*' indicates that the difference is statistically significant at a 5% level of significance.

variables are included to control for general and firm-specific productivity, possible gender discrimination, wage variation in job activities, and regional effects on wages.

The variable of interest is the *Moral Satisfaction* variable. Following the method employed in previous studies, we initially define moral satisfaction by the for-profit/nonprofit status of a sector to test whether salaries differ between for-profit and nonprofit sectors. This definition leads to sector groupings in Columns 1 & 2 of Table 1 and divides the sample almost in half, with 219 observations falling into the for-profit group and 221 observations in the nonprofit group. The authors chose those sectors that are most likely to lie in the nonprofit sector, including academic, nonprofit research, government, and trade associations. All other categories were designated to the for-profit sector.

Table 2 presents the descriptive statistics for the entire sample, for-profit and nonprofit sectors. We see that the business economists in the for-profit sector earn approximately 38 percent more, on average, than their counterparts in the nonprofit sector and that the difference is statistically different from zero. There does not appear to be a wide difference in experience patterns. Both sectors have patterns that initially grow until the third experience grouping (5–9 years) then rise again until experience hits the 25–29 year category. Although the distribution across activities is fairly uniform, a few distinct patterns are evident. Twenty-five percent of the sample in the for-profit sector is engaged in financial-related activities and 11.4 percent of the

respondents are involved in macro forecasting, compared to 9 and 3 percent of those in the nonprofit sector, respectively. Additionally, the nonprofit sector economists are more likely than their for-profit counterparts to teach (17.7 percent versus 1.4 percent). Firm size takes on an unusual pattern between the two sectors, and business economists in the nonprofit sector are much more likely to be in the category representing the largest firms, most likely due to a government affiliation. There are also differences by region, and business economists in the profit sector are more often situated in the North (37 versus 17 percent), while those in the nonprofit sector are more often situated in the South (38 versus 22 percent).

While the descriptive statistics indicate a salary differential between sectors, they do not provide any information about a possible compensating differential. Table 3 presents the regression results for the salary equation testing for a compensating differential. Column (1) presents the regression without any control for moral satisfaction. Column (2) lists the coefficient estimates when *Moral Satisfaction* is defined as working in the nonprofit sector. The regression indicates that the overall model is adequate in explaining salaries, as indicated by the adjusted R^2 of 0.432 and the statistically significant F-statistic. In addition, including the control for *Profit* increases the explanatory power of the regression by about six percentage points (the adjusted R^2 increases from .371). Note that the salary regressions contain dummy variables for occupational activity and region, but because the coefficient estimates on these variables were generally not statistically significant, they are not reported in the table. However, the coefficients on occupation activity and region were jointly statistically significant to the model and are retained as controls.[8]

The human capital variables are in the direction expected and indicate that increases in human capital investment lead to higher average salaries. Economists with a graduate degree earn 13.2 percent more on average than economists holding a bachelor's degree. Likewise, those with higher experience earn more on average than those with two years experience or less (the benchmark category). These average differences generally grow larger as the experience level grows. There does not appear to be any difference in average salary by gender, once controlling for other factors. Surprisingly, the size of the firm does not support previous work on this salary factor. Small firms pay more on average compared to their larger counterparts, and firms with at least 5,000 employees earn about 10 percent less on average than their counterparts in firms with less than 250 employees.

Regarding moral satisfaction, we see that when the definition is by profit status, for-profit organizations pay 28.9 percent more on average than nonprofits. This result is consistent with the 20 percent differential estimated by Weisbrod (1983) in his examination of lawyers. Recall that for our sample, the raw average difference between the salaries for the two sectors is about 38 percent, suggesting that the salary differential is only partially explained by differences in returns to the other independent variables. The results in Column (2) suggest that economists in the nonprofit sector pay for their situation with a lower average salary.

Does the definition of Moral satisfaction matter?

Defining morally satisfying employment as working for a nonprofit organization is limiting. Grouping sectors based solely on whether the sector is typically nonprofit may not represent what is perceived as morally satisfying employment. For example, a Harris Interactive public opinion poll reveals that only 42 percent of the poll respondents trust members of Congress and only 37 percent trust labor union leaders. Since 1977, Gallup has examined perceptions of honesty among 45 professions with Congressman, Senators, and labor union leaders finishing in the bottom third of a recent poll (39th, 31st, and 30th; respectively).[9] Thus, we use an additional measure of moral satisfaction to test for a compensating differential.

The moral satisfaction ratings for each of the employment sectors represented in the NABE data were derived from a survey distributed to undergraduates of a large state university and a large community college taking introductory economics courses in the Fall of 2001 (N = 249). The one page survey asked students to rate the level of "moral satisfaction" associated with sixteen employment sectors using a seven point Likert scale, where a "0" represents "Not at All Morally Satisfying" and a "7" represents "Very Morally Satisfying."[10] Fifteen employment sectors included on the survey were selected from those listed on the NABE salary sur-

TABLE 3.
Salary Regressions (N = 440)[1]

	Benchmark Regression	Profit	Moral Sat.	Profit Self–Selection	Moral Sat. Self–Selection
Constant	10.598***	10.465***	10.466***	9.570***	7.894***
	(74.150)	(75.978)	(72.251)	(30.174)	(2.934)
Education > 16	0.101***	0.132***	0.129***	0.276***	0.360
	(2.557)	(3.479)	(3.262)	(3.217)	(1.529)
Experience (against Exp. < 2 yrs)					
Experience 2–4 yrs.	0.166	0.168	0.173	0.133	0.122
	(1.143)	(1.212)	(1.209)	(0.417)	(0.078)
Experience 5–9 yrs.	0.376***	0.441***	0.379***	0.678**	0.450
	(2.719)	(3.345)	(2.773)	(2.223)	(0.289)
Experience 10–14 yrs.	0.569***	0.651***	0.567***	0.933***	0.517
	(4.091)	(4.902)	(4.141)	(3.041)	(0.322)
Experience 15–19 yrs.	0.714***	0.760***	0.718***	0.858***	0.788
	(5.167)	(5.766)	(5.261)	(2.833)	(0.503)
Experience 20–24 yrs.	0.871***	0.925***	0.875***	1.100***	0.902
	(6.337)	(7.058)	(6.448)	(3.682)	(0.579)
Experience 25–29 yrs.	0.860***	0.899***	0.874***	1.036***	1.091
	(6.067)	(6.643)	(6.235)	(3.324)	(0.705)
Experience 30–34 yrs.	0.810***	0.866***	0.844***	1.167***	1.440
	(5.335)	(5.983)	(5.637)	(3.544)	(0.904)
Experience ≥ 35 yrs.[2]	0.920***	0.976***	0.959***	1.113***	
	(5.909)	(6.491)	(6.147)	(3.279)	
Female	–0.010	–0.028	–0.007	–0.067	0.096
	(–0.175)	(–0.520)	(–0.125)	(–0.563)	(0.488)
Firmsize Variables (against Firms Size 1–249)					
Firmsize 250–4999	–0.008	–0.089	–0.028	0.072	–0.083
	(–0.129)	(–1.539)	(–0.476)	(0.989)	(–0.308)
Firmsize ≥ 5000	–0.146***	–0.106**	–0.146***	–0.016	–0.189
	(–2.990)	(–2.203)	(–2.926)	(–0.250)	(–1.450)
Profit Organization		0.289***		1.497***	
		(6.622)		(8.865)	
Medium Level Moral satisfaction			0.180***		3.172
			(3.438)		(1.354)
Low Level Moral satisfaction			0.233***		6.490
			(3.667)		(1.380)
λ (Self–Selection)				–0.933***	–1.802
				(–8.835)	(–1.407)
Adjusted R^2	0.371	0.432	0.393		
F–Statistic	10.97***	12.53***	10.48		
Log–likelihood				177.929***	–54.039***

[1] Data from the National Association for Business Economists, 1998. T–statistics in parentheses. Statistical significance: *** = 0.001; ** = 0.05; * = 0.10. All regressions include controls for occupational activities, which jointly contribute to the model. The regressions also include controls for region, which jointly contributes to the model (F–test results available from the authors. A likelihood ratio test is employed with the self–selection model and is also available from the authors).

[2] The two highest experience categories are combined in the self–selection model with the moral satisfaction categories.

vey and one additional sector, nonprofit charity, was added to serve as an anchor.[11] Inclusion of the nonprofit charity sector was intended to offer an overt contrast among the sectors. Specifically, the expectation was that moral responsibility scores would be highest for this sector thus creating an "anchor" against which all remaining sector would be ranked. Moral satisfaction was defined as the extent to which work in various industry sectors may reflect a desire to help others. Frank (1996) defines moral satisfaction as "people's concern about others" (p. 2). We depart from the Frank (1996) definition because the raters are asked to reflect on a more broadly defined sector rather than a firm as in Frank. As noted earlier, we kept the evaluation at the sector level as opposed to the individual firm level under the assumption that an economist can work in any sector with his particular skill set. We think that our definition is representative of Frank's (1996) definition yet sufficiently distinct to maintain the desired level of evaluation by the rater. A copy of the survey instrument is included in Appendix 1. Moral satisfaction scores are reported in Appendix 2.

The average age of respondents was 22 and 53% percent of the sample was female. On average, the sample had 4.5 years of work experience, and 2.1 years of full-time work experience.[12] We employed exploratory factor analysis to uncover the underlying structure of the ratings. The factor analysis generated three groups for the NABE industry sectors based on factor loadings, which we identified as low, medium, and high moral satisfaction.[13] These factors were subsequently used in the regression analysis. Turning to Table 3, Column (3), we find that individuals employed in sectors rated low in moral satisfaction receive 23.3 percent and 18 percent higher salary on average compared to their counterparts in high and medium level moral satisfaction employment, respectively. This result compares favorably with our first regression and other studies that employ the for-profit/nonprofit sector analysis. Frank (1996) found that individuals in the "most socially responsible" employment earned salaries that were 30% lower than those in "average socially responsible" employment. Individuals in "least socially responsible" employment earned 14% more than those in "average socially responsible" employment.[14]

Self-Selection: An Additional Test for the Compensating Differential

Are individuals choosing lower salaries to be in employment that tends to pay less for higher moral satisfaction or do individuals select the nonprofit sector because they expect to do less well in the for-profit sector? Hedonic price theory indicates a tradeoff, but perhaps the "choice" is very different for those economists who are ultimately in the for-profit sectors compared to those in the nonprofit sector. In his examination of lawyers, Goddeeris (1988) makes the argument that perhaps public sector lawyers choose the public sector because that is where their comparative advantage lies—if they chose the private sector, they would actually earn lower salaries than in their current public sector law employment.

If this is the case, then the model must include a self-selection correction as defined by Heckman (1979). In this case, we observe all observations; however, underlying the model is the notion that choices into the for-profit and nonprofit sectors are made after some decision threshold is crossed. If so, the control for moral satisfaction in the OLS salary regression will be correlated with the error term and result in inconsistent parameter estimates. Using for-profit/nonprofit status as representative of moral satisfaction, the model becomes:

$$\begin{aligned} Ln\ salary_i = {} & \beta_0 + \beta_1 Profit_i + \beta_2 Grad.\ Deg._i + \\ & \beta_3 Female_i + \Sigma_j \beta_j Experience_i + \\ & \Sigma_j \beta_j\ Firmsize_i + \Sigma_j \beta_j\ Occupational \\ & Activity_i + \Sigma_j \beta_j\ Region_{ri} + \varepsilon_i \end{aligned}$$

$$\begin{aligned} Profit^* = {} & \alpha_0 + \alpha_1 Salary\ Difference_i + \\ & \alpha_2 Grad.\ Deg._i + \alpha_3 Female_i + \\ & \Sigma_j \alpha_e Experience_i + \eta_i \end{aligned} \qquad (2)$$

$$\begin{aligned} Profit = {} & 1\ if\ Profit^* > 0\ and\ Profit = \\ & 0\ if\ Profit^* \leq 0. \end{aligned}$$

In the model above, the decision threshold, *Profit**, is not observed; however, once an individual crosses the threshold, they select the for-profit sector. Using the indicator variable, *Profit*, we can estimate the probability that an individual selects one sector or another, then control for the selection process in

the salary regression to provide consistent coefficient estimates.

The probability that an individual selects into the for-profit sector is estimated with a probit regression. Human capital variables and a control for gender are included in the model, as are two additional variables. The probit model includes the variable *Salary Difference*. The difference in actual and expected salary captures whether individuals choose a sector because they receive a comparative advantage in that sector. Using a modified form of Equation (1),[15] we estimate salary regressions for the each sector, take the antilog of the estimated log salary an individual would expect if paid in his or her alternative sector, and subtract that estimate from each individual's actual salary. As noted in Table 2, the average difference is $24,011 lower for those in the nonprofit sector, but $18,807 higher for those in the for-profit sector. In other words, economists working in the nonprofit sector would receive a much higher salary if they were paid the same returns to the included variables as their for-profit counterparts. On the other hand, for-profit economists would be paid a much lower salary for their same level of education, experience, gender, and firm type in the nonprofit sector.

As it is not the regression of interest here, the probit regression results are in Appendix 3. The model adequately predicts the probability that an individual will be situated in the for-profit sector, as noted by the likelihood ratio test on the overall model and the nearly 70 percent correct predictions. As expected, a positive gap between the actual and expected salary increases the probability that an economist will be situated in the for-profit sector; for every $1,000 increase in the gap, the probability that an individual will be in the for-profit sector increases by 0.213, or 21.3 percentage points. This estimate, while small, is similar to Weisbrod's (1983) coefficient estimate of 0.18 for his expected earnings difference variable. A graduate degree reduces the probability that an individual will be situated in the for-profit sector by almost 14 percentage points, which is not surprising, given the educational requirements for research and teaching in the nonprofit sector. The gender variable has little effect. Finally, although the coefficients on the experience variables are not statistically significant, they are generally negative, suggesting that increases in firm experience lower the average probability that an individual will be situated in the for-profit sector.

When we include self-selection in the salary regression, we find that the coefficient on *Profit* rises to 1.497 (Table 3, Column 4), suggesting that economists in the for-profit sector earn 150 percent more on average than their nonprofit counterparts, once controlling for the choice of sector. This figure is nearly three times as large as the estimate of 56% by Goddeeris (1988). The statistically significant coefficient on the Heckman's selection correction (λ) indicates that self-selection is an important factor in economists' choices. The negative sign, in conjunction with the average difference between actual and expected salary, suggest that those in the for-profit sector make a selection due in part to comparative advantage.

To estimate self-selection with the three moral satisfaction categories, we employ an ordered probit:

$$
\begin{aligned}
Ln\ salary_i = {} & \beta_0 + \beta_1 Medium\ Moral\ Satisfaction_i + \\
& \beta_2 Low\ Moral\ Satisfaction_i + \\
& \beta_3 Grad.\ Deg._i + \beta_4 Female_i + \\
& \Sigma_j \beta_j Experience_i + \Sigma_j \beta_j\ Firmsize_i + \\
& \Sigma_j \beta_j\ Occupational\ Activity_i + \\
& \Sigma_j \beta_j\ Region_{ri} + \varepsilon_i \\
z^* = {} & \alpha_0 + \alpha_1 Salary\ Difference_i + \\
& \alpha_2 Grad.\ Deg._i + \alpha_3 Female_i + \\
& \Sigma_j \alpha_j Experience_{ji} + \eta_i \qquad (3) \\
z = {} & 0\ if \quad -\infty < z^* \le 0 \\
& 1\ if \quad 0 < z^* \le \mu \\
& 2\ if \quad \mu < z^* \le +\infty
\end{aligned}
$$

where μ is the threshold parameter to distinguish the ranking of the categories. Because we desire to retain the benchmark category in the salary regression as "high moral satisfaction," *0* is associated with individuals situated in employment with high moral satisfaction, 1 with medium and 2 with low moral satisfaction. Slight changes were made in the experience and occupational activity categories because too few observations fell into these categories.[16] To calculate *Salary Difference*, we used separate regressions for each category, as with the profit/nonprofit model. In this case, the high moral

satisfaction coefficients measure expected salary for the other two categories; the low moral satisfaction category coefficients are used to measure expected salary for the high moral satisfaction group. Corrected asymptotic standard errors were used to calculate the relevant t-statistics.

The last column of Table 3 presents the self-selection coefficients for the salary model using the three moral satisfaction categories. Although the coefficients are not generally statistically significant, they follow the same pattern as in the previous model. Both of the coefficients on the moral satisfaction variables grow substantially and retain the rank order depicted in the OLS regression, and the coefficient on the self-selection variable remains negative. While these results are not definitive, they do lend further support to the notion that individuals tradeoff salary for employment in sectors deemed morally satisfying.[17]

IV. Conclusion

Our findings suggest that a sample of business economists working in the nonprofit sector receive a lower average salary than their for-profit counterparts. It appears as though a large part of this effect is due to self-selection into one of the two sectors. In fact, once we control for self-selection, the difference in average salaries between for-profit and nonprofit economists rises to 150 percent, compared to only 28.9 percent.

Does the difference represent a compensating differential for selecting morally satisfying employment? As noted above, estimated average wages were higher for those economists situated in the low and medium moral satisfaction sector compared to those in the high moral satisfaction sector. If our groupings are valid, this result suggests a compensating differential story for moral satisfaction. However, we are cautious in this interpretation because those making the employment choices are not the individuals providing their perceptions of moral satisfaction. Ideally, the moral satisfaction ratings would be provided by the individuals evaluating employment opportunities. Unfortunately, no such data exist at this time to test the moral satisfaction story with this level of precision.

We do see a story for a moral satisfaction-salary tradeoff. Like Gooderris (1988), we find that self-selection affects the gap between for-profit and nonprofit sectors. This result may represent a moral satisfaction-salary tradeoff, but it may also represent other nonpecuniary benefits such as autonomy, challenging work, and variety identified by Mirvis and Hackett (1983) as contributing factors to greater job satisfaction in the nonprofit sector. It is when we incorporate industry ratings of moral satisfaction that wage differentials and the tradeoff appears more evident.

Not altogether surprising, our effort to explore the intriguing finding presented by Frank (1996) has generated more questions for further study. Using a dataset of well-paid and well-educated business economists, we find evidence of a compensating differential in which business economists trade salary for morally satisfying work. We do not pretend that this dataset is representative of the population at-large; however, the results of our study do extend the literature while raising questions for further study. In particular, how does the type of graduate education contribute to the decision to trade salary for morally satisfying employment? Why do we see a 150% trade-off among economists yet only 56% among lawyers? What might the results be for medical doctors, chemists, or computer scientists? The answer to these and related questions potentially affect business decisions and public policy regarding graduate education and government employment.

APPENDIX 1
Ratings Survey
Instructions

For each of the major employment sectors listed below, please indicate how morally satisfying you believe the work to be. By morally satisfying, please consider to what extent work in the sector may reflect an individual employee's concern for the interest of others. For each sector listed below, choose a value between one and seven with one meaning: Not At All Morally Satisfying and seven meaning Extremely Morally Satisfying.

Employment Sector	Not at all Morally Satisfying						Extremely Morally Satisfying
Manufacturing	1	2	3	4	5	6	7
Retail and Wholesale Trade	1	2	3	4	5	6	7
Securities and Investments	1	2	3	4	5	6	7
Financial Institutions	1	2	3	4	5	6	7
Insurance	1	2	3	4	5	6	7
Communications	1	2	3	4	5	6	7
Utilities	1	2	3	4	5	6	7
Publishing	1	2	3	4	5	6	7
Transportation	1	2	3	4	5	6	7
Mining	1	2	3	4	5	6	7
Construction	1	2	3	4	5	6	7
Non-profit Research	1	2	3	4	5	6	7
Trade Association	1	2	3	4	5	6	7
Government	1	2	3	4	5	6	7
Academic	1	2	3	4	5	6	7
Non-profit Charity	1	2	3	4	5	6	7

You are reminded that this survey will be kept confidential and there is no way to link the survey to an individual respondent. Below are a few more questions for you to answer.

How old are you? _____

What is your gender? Male Female

How many years have you been working? _____

How many years have you worked full-time (35+ hrs./week)? _____

Thank you very much for your participation in this survey. Once tabulated, the results will be shared with you.

APPENDIX 2.
Descriptive Statistics—Moral Satisfaction Ratings

sector	N[4]	missing	mean	sd
Academic	244	5	5.713	1.308
Communications[1]	247	2	4.751	1.443
Construction[2]	248	1	3.927	1.785
Financial Institutions	246	3	4.557	1.524
Government	248	1	4.635	1.626
Insurance	247	2	4.069	1.665
Manufacturing	249	0	3.719	1.535
Mining[2]	240	9	2.923	1.529
Nonprofit Charity[3]	248	1	5.472	1.808
Nonprofit Research	248	1	4.851	1.861
Publishing	248	1	4.440	1.469
Retail and Wholesale Trade	247	2	3.988	1.464
Securities & Investments	248	1	4.504	1.511
Trade Association	247	2	4.194	1.409
Transportation	244	5	4.123	1.719
Utilities[1]	247	2	3.927	1.531

[1] The Communications and Utilities sector were combined on the salary survey so salary surveys from these sectors could not be matched with the Moral Satisfaction ratings. The nine salary surveys indicating the individuals worked in these sectors where removed from the dataset.

[2] No salary survey respondents identified themselves as employed in the Mining or Construction sectors and these sectors were subsequently dropped from the analysis.

[3] The Nonprofit Charity sector was not included on the salary survey but rather added to the ratings survey to serve as an anchor. It was expected that this sector would receive high ratings for Moral Satisfaction compared to the other sectors.

[4] N represents the number of undergraduate students who completed the survey questions about moral satisfaction where the total number of students was 249.

APPENDIX 3.
Probit Analysis[1]

	Profit	Marginal Effect	Moral Sat.	Marginal Effect[2]
Constant	0.621		1.405***	
	(1.420)		(4.496)	
Actual–Expected Earnings	0.018***		0.005***	
(thousands)	(8.833)	0.213	(5.071)	0.107
Education > 16	–0.382***		–0.262**	
	(–2.750)	–0.141	(–2.257)	–0.095
Experience 2–4 yrs.	–0.047		–0.247	
	(0.096)	0.016	(–0.684)	–0.090
Experience 5–9 yrs.	–0.506		–0.276	
	(–1.102)	–0.190	(–0.798)	–0.099
Experience 10–14 yrs.	–0.564		–0.039	
	(–1.216)	–0.213	(–0.116)	–0.015
Experience 15–19 yrs.	–0.234		–0.353	
	(–0.504)	–0.084	(–1.043)	–0.128
Experience 20–24 yrs.	–0.383		–0.273	
	(–0.821)	–0.141	(0.807)	–0.098
Experience 25–29 yrs.	–0.252		–0.568	
	(–0.528)	–0.091	(–1.618)	–0.188
Experience 30–34 yrs.	–0.354		–0.839	
	(–0.651)	–0.127	(–2.395)	–0.253
Experience ≥ 35 yrs.[3]	–0.082			
	(–0.149)	–0.028		
Female	–0.003		–0.185	
	(–0.016)	–0.001	(–1.051)	–0.068
Log–Likelihood	–243.273***		–402.068***	
Percent Correctly Predicted	69.77%		57.5%	

[1] T-statistics in parentheses. Level of significance: *** = .01, ** = .05, * = .1. Marginal effects are estimated from the base case that begins with the average difference in earnings and sets all dummy variables to zero. The earnings difference variable is increased by one standard deviation to calculate the change from the base case probability; the dummy variables are individually set to one to calculate the change in the base probability for each variable.

[2] Marginal effects are calculated for the probability of being in the lowest moral satisfaction category (most like the for-profit category in the binary probit). Marginal effects for the other two categories are available from the authors.

[3] The two largest experience categories were combined together because no one in the high moral satisfaction category was situated in the highest level experience category.

Notes

1. Because we use a highly specialized set of workers (economists), the use of sectors works for us. With other types of workers, however, occupational choice may be more useful. For example, low-skilled workers may make occupational choices based on legal and illegal activities because the latter are morally reprehensible to them.
2. For a review of the wage/risk tradeoff research, see Viscusi (1993).
3. A growing literature suggests that mental attitude is superior to materialist conceptions as a predictor of happiness. Mihaly Csikszentmihalyi (1999) focuses on the flow experience, one dimension of happiness, resulting from involvement and complete concentration on an activity like an occupation, for example.
4. We are unable to find any empirical tests of the theory, however anecdotal evidence can frequently be found in newspapers. S. Vaughn (2001) quotes Eileen Heisman, President of the National Philanthropic Trust, "People have always said I could make a lot of money with my skill set in the corporate world. But I have a huge amount of job satisfaction and no cognitive dissonance about what I do at work and who I am at home." Although Ms. Heisman's compensation is not revealed, it seems clear that she is consciously foregoing higher compensation in exchange for employment-related and lifestyle-related benefits.
5. To ensure that a 2 from one rater is the same as a 2 from another rater, Frank (1996) uses a deviation from the mean approach which fails to account for variation in moral satisfaction ratings. In the case of this study, the results are identical regardless of which approach is employed.
6. Of the 771 returned surveys, 209 had to be removed from the sample due to missing data, 58 had to be removed because the sector was coded as "other" thus unusable, and 9 had to be removed because the survey grouped three "sectors" which we cannot separate to match with moral responsibility scores. Forty-three additional surveys were eliminated due to missing data for the variables used in the regression analysis. Finally, we lose 11 due to missing data for the self-selection variables.
7. The individual may or may not have a graduate degree in economics. For example, some individuals may have an MBA or other professional degree. The data do not indicate the details of each person's area of study.
8. A restricted F-test indicates that the occupational activity coefficients were jointly significant to the model. For the regional coefficients, only the coefficient associated with the Central region was statistically significant, and only for the profit/nonprofit model. In all cases, however, a restricted F-test indicated that region was jointed significant to the model. Details available from the authors.
9. The Harris Interactive poll results were included as part of an article titled, "Teachers second most respected profession," in the Idaho Education Association Reporter, Fall 2001 (Volume 56, number 1). Leslie McAneny of Gallup News Service wrote the press release titled, "Nurses Displace Pharmacists at Top of Expanded Honesty and Ethics Poll," dated November 16, 1999.
10. Following the collection of moral satisfaction rating scores, an advanced undergraduate student conducted a focus group to explore student understanding of the definition of moral satisfaction and student understanding of the survey. The findings from the focus group suggest that students understand the definition and the survey instrument.
11. Moral Satisfaction ratings were collected for the 15 sectors listed on the NABE salary survey. Table 1 reflects only 11 sectors because four sectors were eliminated when unusable salary surveys were eliminated. See Endnote 5.
12. Some may view the relatively young age of the sample as a disadvantaged in assessing moral satisfaction. To others, their youth is beneficial in that these respondents are rating the sectors without knowing information about salaries or other job attributes. Their responses, therefore, are more likely to be focused only on the question at hand, "what is a morally satisfying sector of employment?"
13. Factor analysis results can be obtained from the authors.
14. Frank used the middle category "average social responsibility" as the benchmark category in salary regressions.

15. The nonprofit sector does not have individuals working in the two categories representing the largest firms and they were therefore deducted from the analysis. The other variables as in Column (1) of Table 4 were used for the separate regressions.
16. Consulting and corporate planning were combined together because those in the high moral satisfaction categories did not have corporate planning as an activity. The two largest experience categories were combined together because those in the high moral satisfaction group did not have experience beyond 34 years.
17. The ordered probit does not perform as well as the binary probit and therefore leads to coefficient estimates that are less precise.

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