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Summary

Recognizing that people value employment not only to earn income to satisfy their consumption needs, but also as a means to gain socio-psychological (nonpecuniary) benefits, we show that once nonpecuniary work incentives are incorporated into standard labor supply theory, (i) the wage rate *under-estimates* (*over-estimates*) the true value of nonwork/leisure time when work has nonpecuniary benefits (costs), (ii) nonpecuniary benefits can be a substitute for monetary wages as work incentives, (iii) at very low wage rates, work can become a net source of *utility*, and (iii) the shape of labor supply curve *differs* from standard theory. We also identify conditions under which a greater nonpecuniary work incentive generates a larger individual labor supply, and examine the effects of non-wage income on labor supply both for paid and voluntary work.

Keywords: Nonpecuniary incentives, Labor supply, Non-wage income, Voluntary work

JEL Classification: D62, J22, I31

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1 Introduction

If being employed is not only a source of earning income to satisfy materialistic needs, but also the principal means of community involvement, then employment can provide socio-psychological (or nonpecuniary) benefits. However, the standard theory of individual labor supply focuses on an individualistic notion of work and abstracts from the nonpecuniary benefits. It considers work as a source of disutility, and any time off work (leisure) as a source of utility, assuming that utility *always* decreases with hours worked.¹ Standard labor-leisure choice theory asks how an individual makes a tradeoff between consumption (made possible by work) and leisure (time not allocated to work), but ignores the socio-psychological effects of employment. This shortcoming of the standard theory, which treats labor time merely as a means of earning income, is lucidly expressed by Krugman (1998, P.15): “*Economics textbooks may treat the exchange of labor for money as a transaction much like the sale of a bushel of apples, but we all know that in human terms there is a huge difference. A merchant may sell many things, but a worker usually has only one job, which supplies not only his livelihood but often much of his sense of identity. An unsold commodity is a nuisance, an unemployed worker a tragedy*”. This raises a basic question: How is the individual labor supply decision affected by the nonpecuniary effects of work?

In this paper, we go beyond the standard neoclassical income-leisure choice, where the value of leisure is the cost of income foregone, and follow sociologists and psychologists (see, for example, Jahoda (1981)(1982), Whelan (1994) and Agerbo et al (1998)), who recognize that, in addition to being a source of income and material satisfaction, employment can provide non-materialistic individual satisfactions. By incorporating the positive nonpecuniary effects of employment on individual well-being, we extend the standard labor supply model and provide several new insights.²

¹ See, for example, Deaton and Muellbauer (1980, Ch. 4 and 11), Varian (1984, Ch. 6), and Killingsworth (1986), for a standard treatment of labor supply.

² A notable departure from the standard model is Becker’s (1965) insightful model of choice where an individual (or household) combines nonwork time with market goods to produce commodities or

The next section briefly reviews some of the empirical studies indicating the presence of nonpecuniary benefits from work. In Section 3.0 we extend the standard labor supply model, showing in Section 3.1 that, when work involves nonpecuniary benefits (costs), the standard theory's valuation of nonwork/leisure time at the wage rate results in an under-estimation (over-estimation) of its true value, thus leading to an over-allocation (under-allocation) of time to nonwork activities. This simple but quite striking result has important implications for correct cost-benefit assessment of nonwork activities (such as recreational, transportation, household and do-it-yourself activities) and unemployment, retirement, and disability compensation schemes. The extended model shows explicitly that nonpecuniary benefits and monetary wages are substitute incentives in employment and labor supply decisions. As such, it can help to explain, among other things, why people sometimes choose lower-paying jobs and resist retirement despite financially attractive compensation and benefits schemes, or even offer their labor voluntarily. Section 3.2 shows that in the presence of nonpecuniary work incentives, as the wage rate, and hence income and consumption, declines below a critical level, the time not allocated to work (leisure) may lose its desirability to such an extent that one chooses to work as much as possible. Indeed, it shows that at very low wage rates, work can even become a source of *utility*. As such, our model implies an individual labor supply curve that differs markedly from that derived from the standard theory. Section 4 extends the analysis of Section 3 by examining the effects of non-wage income on labor supply both when the individual earns wage income and when she works voluntarily. It shows that depending on the individual's preferences and the share of non-wage income in total income, an increase in non-wage income can *enlarge or shrink* the range of wages at which labor is supplied fully and perfectly inelastically. It also shows that

services whose consumption yields utility. In that model, leisure is not the same as nonwork time; it is a consumption good or service whose production is time intensive and its full cost consists of both the direct cost of market goods and the foregone earnings due to spending time to produce leisure activities. Becker examines the effects of changes in the foregone income on hours of work, productivity measurement and economics of queues. As such, Becker's model and the focus of analysis differ from those of the present paper which concentrates on the socio-psychological (nonpecuniary) effect of work on utility and hence labor supply. In fact, in Becker's model the amount of time allocated to work “.. would be determined solely by the effect on income and not by any effect on utility” (p.498), where income denotes “the money income achieved if all the time available were devoted to work” (p.497).

below a critical income level voluntary work will be offered fully, but for higher incomes, voluntary work *decreases* with income. Section 5 presents concluding remarks.

2. Nonpecuniary Value of Employment

Employment is a principal means for people to connect and become involved with communal activities. In turn, whether through self-assessment or assessment by others, community involvement directly or indirectly brings a sense of self-esteem, self-respect, belonging, identity, recognition, reputation, friendship, security, and status, all of which are ingredients of one's quality of life and satisfaction (Jahoda (1988)).³ In fact, the phrase "I am what I do" is sometimes used to express the socio-psychological importance of work. Being employed is an essential determinant of happiness; the unemployed have significantly lower well-being scores in the social psychology and labor economics literature (see, for example, Fryer and Payne (1986), Feather (1990) and Argyle (2001)). Further, Lucas, *et al* (2004), find strong statistical evidence that the adverse effect of unemployment on individuals' subjective well-being persists even after they become re-employed. More interestingly, empirical work in labor economics has established that unemployment is strongly negatively correlated with individual well-being, *even after controlling for income and other individual characteristics*. In other words, the unemployed are generally worse off than the employed, and by more than their lower income would predict (see, for example, Clark and Oswald (1994), Korpi (1997), Winkelmann and Winkelmann (1998), Di Tella, MacCulloch and Oswald (2001)(2003), and Clark (2003) and references cited therein). For example, Winkelmann and Winkelmann (1998) used panel data on life satisfaction from German-Socio-Economic Panel for 1984-1989, where the individual's subjective well-being was measured on an ordinal scale from 0 to 10. After controlling for income and various observed individual characteristics and specific fixed effects, they found that (a) being unemployed has a statistically significant and substantial negative effect on satisfaction, and (b) the pecuniary costs of unemployment, occurring directly through reduced income, are

³ For a general treatment of the effects of identity on economic behavior and outcomes, see Akerlof (2000). See particularly Akerlof and Kranton (2003)(2005) for a novel and insightful principal-agent model analyzing the effects of workers' identification with a firm, or with a job, or with a work group, on their incentives to exert effort, on wage rate variation, and on firms' optimal management strategies. For a survey of the social psychological consequences of unemployment and implications for behavioral macroeconomic model and policy see Darity and Goldsmith (1996).

much smaller than the nonpecuniary costs, occurring indirectly through reduced well-being. They estimated that income would have to be increased by a factor of seven in order to generate an increase in satisfaction large enough to offset the adverse effect of unemployment. Di Tella, MacCulloch and Oswald (2001) came to similar conclusions. Using the Euro-Barometer data on individual life satisfaction, ordered on a four-point scale for 12 European countries for the period 1975-91, they found that, controlling for the income loss and other indirect effects, being unemployed has a strong negative effect on well-being. Based on Di Tella *et al*'s estimated happiness function, Frey and Stutzer (2002) calculated the compensation variation for being unemployed rather than holding a job and noted that "a move from the lowest income quartile to the highest income quartile would not be enough to offset the adverse effect of unemployment, suggesting that unemployed people suffer high nonpecuniary costs (p.402)". These results suggest that being unemployed significantly reduces people's well-being, even when receiving the same income as when employed. As Di Tella, MacCulloch and Oswald (2003, pp. 819-820) note "Being unemployed is much worse than is implied by the drop in income alone. The economist's standard method of judging the disutility from being laid off focuses on pecuniary losses. According to our calculations, that is a mistake, because it understates the full well-being costs, which according to the data, appear to be predominantly nonpecuniary." The facts that in advanced industrial countries, where social safety nets cushion joblessness, some individuals prefer to be employed with earnings less than the unemployment benefit or to engage in voluntary work are evidence of nonpecuniary value of employment.⁴ Furthermore, the presence of nonpecuniary value of employment is strongly suggested by Mulligan's (1998) insightful empirical study of the dramatic increase in civilian work in the United States during World War II. Ruling out the changes in workers' budget sets (the after-tax real wages were substantially lower than either before or after the war) or other pecuniary explanations such as wealth effects of government policies, wage-induced intertemporal substitution, and changes in the nonmarket price of time, she concluded that nonpecuniary motives such as patriotism and changing discrimination against women can explain the phenomenon.

⁴ Moffitt (1983) finds strong empirical support for the existence of welfare stigma among eligible but non-participants in AFDC-U, the welfare program for which families with an unemployed male were eligible.

Finally, using data from the Alaska salmon fisheries, which have been subject to entry limitations since 1975, Karpoff (1985) tested the hypothesis that fishermen receive significant nonpecuniary benefits from work by estimating the present value of the expected rent stream from fishing and examining whether permit prices reflected a premium above what monetary income alone would suggest. He found that the continued presence of many low-income fishermen in the fisheries was evidence that they derive nonpecuniary benefits from fishing.

3.0 An Extended Model of Labor Supply

The findings of the empirical studies cited in the previous section and those of many others for different countries and time periods suggest the presence of nonpecuniary benefits from work, thus contradicting the standard theory's basic assumption that work is merely a burden and source of disutility to individuals. In this section, we incorporate the nonpecuniary benefits of work in the standard model and derive implications for valuation of nonwork time and individual labor supply.

Let $U = U(c, z, m)$ be the individual utility function, where $c \geq 0$ is consumption, $z \geq 0$ is leisure time, and $m \geq 0$ captures all the nonpecuniary effects (NPE) of employment. We assume that one's involvement with the community, and hence the NPE, increases with the labor time $l \geq 0$ (i.e. $m'(l) > 0$).⁵ We make the standard assumptions that the utility function is increasing in each of its arguments (i.e., $U_c > 0, U_z > 0, U_m > 0, U_c \rightarrow \infty$ as $c \rightarrow 0$) at decreasing rates (i.e., $U_{cc} < 0, U_{zz} < 0, U_{mm} < 0$) and that both leisure and NPE are complements with consumption (i.e., $U_{cz} > 0, U_{cm} > 0$).⁶ Additionally, although not essential

⁵ For analytical simplicity, and as an approximation to reality, we are assuming that the nonpecuniary effect of work is a continuous and increasing function of the amount of work, l . In reality, it may generally be an increasing step function. Furthermore, beyond the assumption that $m'(l) > 0$, it is difficult to be sure about the curvature of this function, although it seems plausible to assume that beyond certain level, the *marginal* value of NPE declines as labor time increases, i.e., that $m(l)$ becomes an increasing concave function. Also, we abstract from the interdependence of preferences among individuals and the effect it may have on an individual's nonpecuniary value of employment. For example, the nonpecuniary cost of unemployment can well depend on the rate of unemployment among peer groups and the degree of adherence to the social norm of employment (see Clark (2003) for an empirical study of this).

⁶ Wherever no confusion arises, subscripts denote partial derivatives.

