

Name of thematic Session - Parallel Session 7B: Economic Insecurity, Demography, and Well-Being

> **Title of Paper** - The Pursuit of Happiness: A Simple Model of Peers, Status, and Labor Supply

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> **Extended Abstract:**

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This paper presents a model of relative consumption where individual utility is dependent on consumption relative to peers (local status), average peer rank in the economy (global status), and leisure. The theory developed here offers an explanation to two empirical puzzles – (1) The increase in the working hours of the more productive US workers relative to the less productive ones, and (2) the existence of significant discrepancies in the findings of empirical papers exploring the functional relationship between happiness and absolute income. Under certain parameterizations, the presented model takes the form of the classical textbook model of absolute consumption based utility. This offers the possibility of empirically comparing the textbook model and the one presented here using available data.

In the paper entitled, “*The Wage and the Length of the Work Day: From 1890s to 1991*” (2000), Costa presents an interesting finding that across different industries and occupational categories in the US, the lower paid workers worked the longest day in the 1890s while the higher paid workers worked the longest days in 1991. This pattern is robust to controls including age, marital status, number of dependents, state and year fixed effects. As Costa explains this shift in working hours can itself explain 26 percent of the increase in earnings inequality between the 90th and 10th wage deciles in the US from 1973 to 1991. A number of other studies have also documented similar findings^[1]. It is therefore important to understand the driving force behind such a trend.

Although interdependence of individual preferences in explaining consumer behavior has long been recognized by psychologists, sociologists, and economists^[2] alike, it has not been until recently that economists have modeled relative consumption^[3] seriously. As Duesenberry^[4] (1949) points out, the then lack of empirical evidence left such theoretical psychological considerations to sum to little more than asserted assumptions which were no more credible than competing theories^[5]. As detailed micro level datasets on happiness from various countries are becoming available, numerous empirical studies probing into the relationship of happiness and absolute/relative income have been conducted^[6]. Most studies conducted on developed countries show that relative income is not only significant in explaining happiness but often more so than absolute income^[7].

However, within a country, absolute income seems to be related to happiness in different ways. There are numerous studies that conclude that happiness and household income are positively correlated (the magnitude of the correlation is usually not too big) but happiness does not seem to change much over the years even as there are huge gains in real income. Indeed happiness may actually decline for certain deciles over the years. For instance, average happiness in the US has been calculated to have peaked in the 1957.

There are numerous papers that use relative income models to study economic growth, asset pricing, savings, consumption decision, habit formation, and optimal taxation. Interestingly, there are not too many papers that study how peer choices may affect the outcome of these models. Most of these papers assume identical agents as an equilibrium condition and do not study how a changing peer structure can affect model outcome. In this paper, we point out that since the mid

eighteenth century there has been a boom in the population of the US, with an explosive increase in urbanization. This has concentrated people from small rural towns all over the US to highly populated metropolitan areas (cities and suburbs), thereby potentially affecting the type of peers one is surrounded by. After making the case that modern day urban people are increasingly getting surrounded by peers of similar profession and productivity, we study the effect this may have on their labor decisions and their happiness. Dupor and Liu (2003) have pointed out that status concerns may lead to conspicuous consumption and over work compared to the social optimum^[8]. But they have not studied how it affects the labor decisions and happiness of heterogeneous agents differently under changing peer groups.

The paper is structured into five sections. In section 2 some motivational data and statistical evidence is provided to justify the assumptions of this paper and to get an idea of what our proposed model should be able to generate. Section 3 presents the model and lays out some general propositions. Results from some numerical simulations are presented in Section 4 to get a better understanding of the model presented in the former section. We conclude the paper by discussing the major findings and direction for future research in Section 5.

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^[1] Robinson and Godbey (1997) also document that Americans with a college degree work more than those with less formal education. A similar study notes that American college graduates are increasing their work hours while high school graduates are decreasing theirs since 1940 (Mary T. Coleman and John Pencavel 1993). If we consider education or wage as reflecting the productivity or ability of a worker, these studies all suggest that the higher ability or more productive workers are increasingly working a relatively higher number of hours. There is no significant disagreement among empiricists that this has been the trend in the US at least for the last 50 years.

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^[2] A number of prominent classical economists have acknowledged the importance of some reference point relative to which consumers compare their consumption or income levels in maximizing utility. Adam Smith (1776) in classifying some goods as “necessities” accepted the notion that not all goods are necessary i.e. some goods have value only in comparison to others. Veblen (1899) and Pigou (1903) also suggested the idea of “outward” and “inward” looking preferences. “Outward-looking” refers to individual utility that depends on the consumption of a reference group (e.g. peers) while “inward-looking” implies dependence on one’s own previous consumption.

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^[3] For the rest of the paper, we will use relative income and relative consumption interchangeably. It should be noted that there are distinctions made between the two in the literature. In the model presented here there is no difference between income and consumption and hence such differences are redundant here.

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^[4] James S. Duesenberry wrote a book entitled, “Income, Savings and the Theory of Consumer Behavior” (1949). In this book he points out that the assumption of an agent’s utility depending only on individual consumption is nothing more than a widely used assertion which may not have much empirical support. He goes on to show that assuming an agent’s utility is affected by his relative consumption, certain contradictions in the empirical data about savings, and consumptions spending (that arise when assuming utility function dependent only on individual consumption) can be explained.

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^[5] Analytical tractability of macro models is yet another reason why interdependent preferences are often avoided. It is computationally difficult to numerically solve for a decentralized equilibrium in models involving heterogeneous agents. A common trick employed in such scenarios is to prove the equivalence of equilibriums reached by the

decentralized heterogeneous agents and some representative consumer. Caselli and Ventura (2000) consider such cases. However, since interdependent preferences can be viewed as a form of externality, this equivalence of decentralized and representative consumer equilibrium rarely holds. It usually requires very stringent restrictions on the preferences to ensure equivalency of the two equilibriums which may defeat the purpose of including interdependent preferences in the first place. See Garcia-Penalosa, C. & Turnovsky, S. J. (2008) for some restrictions on the interdependent preferences of heterogeneous agents that ensure that the decentralized aggregate equilibrium is the same as one obtained using a representative consumer.

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[\[6\]](#) For instance the General Social Survey (GSS), International Social Survey Program (ISSP), Eurobarometer, World Value Survey, Pew Global Attitude Survey, Gallup World Poll

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[\[7\]](#) Van de Stadt, Kapteyn, and Van de Geer (1985) estimated a model that suggests that an individual's utility is affected by both his previous consumption and the consumption of his reference group with the importance of the former estimated to be roughly twice that of the latter. Also see T. McGuire (et al 1993), Van de Stadt, Kapteyn, and Van de Geer (1985), Blanchflower and Oswald (2000), Oswald (1996), Karen Dynan and Enrichetta Ravina (2006), Easterlin (1974, 1995, and 2001), Duncan 1975-76, Postlethwaite (et al 1998), Diener (et al 1999), Frey and Stutzer (2002), Blanchflower (et al. 2004), Luttmer (2005). Sara Solnick and David Hemenway (1998) document a more direct and revealing experiment in which Public Health graduate students at Harvard University are asked a series of questions aimed at revealing the relative importance given to local status and global status. Among other things the students were given a choice of living in a world where (A) the respondent earns \$100K while others earn \$250K and (B) the respondent earns \$50K while others earn \$25K – 56 percent of the students chose the second option.

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[\[8\]](#) Also see Hof and Berger (2004)