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Discussion Paper No. 1007

SOCIAL STATUS, CULTURE AND ECONOMIC PERFORMANCE[†]

by

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"Honour makes a great part of the reward for all honourable professions. In point of pecuniary gain, all things considered, they are generally under-compensated...The most detestable of all employment, that of public executioner, is in proportion to the quantity of work done, better paid than any common trade whatever"

Adam Smith (The Wealth of Nations, Book 1, ch.x, part i).

INTRODUCTION

In analyzing the differences in productive capacity among economies it is usual to concentrate on the physical aspects of the population, the different attributes of capital, including human capital, and on the available production technologies. Societies also differ in **culture** in ways which are relevant for economic performance. The sociological literature recognizes that different occupations have different social status and that workers benefit not only from the wage that they receive but also from being associated with a particular occupation. Cultural differences among societies may translate into different status of occupations and can, therefore, affect the choice of education and occupation and, consequently, the equilibrium level of output and wages. Thus, cultural differences can have real economic consequences. Conversely, the economic choices of individuals influence the social status of occupations. In particular, it is well established by sociological research that the social status of an occupation is influenced by economic attributes such as the average wage and the average level of education in the occupation.

The purpose of this paper is to trace out the relationships between social status and economic performance in a general equilibrium framework. We show that changes in the demand for status, triggered by changes in preferences or in income distribution, influence the wage structure the level of aggregate output and economic welfare. The link between status and aggregate output is created by the fact that differences in occupational status imply occupational wage differences among workers of the **same** skill. The larger is the demand for status the larger is the wage gap and the lower is aggregate output.

Our discussion of status is closely related to the economic analysis of discrimination against ethnic or racial groups (see Becker [1971] and Arrow [1973]). The main difference

is that our discussion puts more emphasis on **acquired** characteristics, in particular schooling. Hence, status is determined endogenously within the equilibrium system. There have been several recent attempts to introduce social and cultural considerations in order to explain disparity in growth rates. Baumol [1990] emphasizes the role of social prestige associated with "non productive" (rent seeking) vs. "productive" activities. Cole, Mailath and Postlewaite [1991] argue that social status is used to regulate marriage patterns and therefore affects wealth accumulation and growth. Common to all these papers is the view that cultural differences may have important economic consequences. Our work builds on a similar presumption. A special feature of our approach is that the sociological and economic approaches are combined within a unified framework. This is in contrast to some social scientists who view the two approaches as competing with each other (see Phelps–Brown [1977,ch. 4]).

In our model, social status is gained by association and therefore is a form of externality. If an educated individual chooses a particular occupation the status of this occupation increases, contributing positively to all workers in that occupation. Due to these externalities, the competitive equilibrium is inefficient. This creates the potential for active intervention by the government in occupational and educational choices. In particular, we argue that to attain Pareto efficiency it is necessary to encourage schooling but discourage entry into the high status occupations. The role of externalities in the context of occupational and educational choices is also emphasized by Basu [1989] and Benabou [1991].

Our paper emphasizes the relationship between the distribution of wealth and occupational choice. Workers with high non–wage income have higher demand for status and will select the high status occupations. In our model an increase in inequality induces a shift towards the high status occupations and reduces output, provided that high status occupation employ only a minority of the labor force. A similar conclusion is reached by

Banerjee and Newman [1991] who link occupational choice and risk taking and argue that capital market imperfections force poor people to become employees.

1. SOCIAL STATUS AND INDIVIDUAL PREFERENCES

Max Weber first introduced the concept of status as a technical term. He defined status as an "effective claim for social esteem". He viewed occupations as "status groups" that is, "a plurality of persons who, within a larger group, successfully claim a special social esteem". He argued that occupational status depends "above all" on the amount of training required for the specialized functions and the opportunities for earnings. (see Weber [1978, pp. 141, 302–307]). Empirical measures of occupational ratings were elicited by asking respondents to judge an occupation as having excellent, good, average, somewhat below average or poor standing (along with a do not know option) in response to the item: "For each job mentioned, please pick out the statement that best gives **your own personal opinion** of the **general standing** that such a such a job has". Surveys of this type has been conducted in the U.S by N.O.R.C since 1947. At the top of both the 1947 and 1963 lists one finds: Judges, Physicians and Scientists and Cabinet members. In the middle one finds one finds: Artists, Teachers and Policemen. In the bottom one finds: Plumbers Janitors and Garbage collectors (Hodge and al.[1966]). Similar rankings have been obtained from other countries. Rankings are closely correlated across countries. The average correlation between pairs of countries is about 0.8. (See Trieman [1977, pp. 80], Kelley [1990, pp. 345].) Rankings are correlated across time in the, about 0.9 in the U.S. (See Hodge and al.[1966].). In addition, "People in all walks of life, rich and poor, educated and ignorant, urban and rural, male and female view the prestige hierarchy in the same way" (Trieman [1977, pp. 59]). Trying to explain these subjective evaluations by observable characteristics of occupations, one finds that the proportion of respondents who gave an excellent or good score is best explained by the mean income and education (or the

percent with high school education and the proportion of workers with high incomes) in each occupation. ([Duncan 1961], Nam and Powers [1983, ch. 3])

Building on the findings by sociologists we assume that the main characteristics of an occupation which influence its status are the average wage and the average level of skill (or the proportion of skilled workers). We, therefore, write

$$(1) \quad s_j = S(\bar{w}_j, e_j), j=a,b,.$$

where, s_j denotes the social status of occupation j , \bar{w}_j is the average wage in occupation j and e_j is the proportion of skilled workers in occupation j . The partial derivatives of $S(.,.)$ with respect to the average wage and the skill ratio are assumed to be positive.¹

A worker who chooses a particular occupation obtains part of his reward in the form of social status and part of it as a wage. The wage and other sources of income generate a private consumption flow, c . The association with a particular occupation creates a flow of non-monetary returns, s . Relying on the findings by sociologists that judgments of occupational ranks are closely correlated, we assume that the ranking of occupations by their aggregate characteristics is common to all individuals and that all participants in an occupation enjoy the same s . In this sense social status is a **collective** good. However, we do not require that all members of society put the same weight on social status relative to wages. We, therefore, write the utility function in the form

$$(2) \quad u = U(c, s; \psi),$$

¹ One can probe deeper and ask. Why is it that the average schooling and wages in an occupation confer social status on its members, and what determine the weights of these factors? In our paper we take the empirical findings of sociologists as our starting point. For an analysis which endogenously derives a relation between status and wealth see Cole, Mailath and Postlewaite (1991).

where, the parameter ψ indicates the relative weight that the individual gives to status relative to private consumption. An increase in ψ corresponds to an increase in the marginal rate of substitution between consumption and status. This taste parameter may vary across individuals. The main restriction is that both status and consumption increase individual utility. In addition we assume that the marginal rate of substitution between social status and private consumption increases (in absolute value) with the level of consumption. This means that status is a "normal good" in individual preferences implying that the demand for status increases with wealth (see Weiss [1976]).

2. A FRAMEWORK FOR ANALYSIS

Demographics. Consider a stationary economy in discrete time. A new cohort of N individuals joins the population each period. Life is finite and each cohort has the same life span of T periods. Hence, in a steady state, each age group is of size N (a uniform age distribution), the number of births equals the number of deaths and the population is of size NT , a constant.

Skills. Workers can be of two types – skilled and unskilled. We denote the high skill level by h and the low skill level by l . Each new entrant is born with the low level of skill. However, an unskilled worker can be transformed into a skilled worker by spending D periods in school. During the learning period the worker forgoes his earnings as an unskilled worker.

Production. There is only one homogeneous commodity in the economy. There are, however, two modes of producing this composite good. Each sector of production (occupation) is using only labor. There are, however, different skill requirements in the two sectors. Sector b is using only highly skilled workers while sector a is using a mixture of high and low skill workers. Denote by n_{ij} the total number of workers with skill level $i \in \{l, h\}$ who are employed in sector $j \in \{a, b\}$ then the production functions are

$$(3) \quad q_a = F(n_{ha}, n_{la}),$$

$$(4) \quad q_b = n_{hb}.$$

The production function in sector a is assumed to be strictly concave in the two labor inputs. (This implies decreasing returns to scale and increasing marginal costs.) In addition, we assume that both types of inputs are **essential** (marginal products tend to infinity as an input level approaches zero) and that the marginal costs of production tend to zero as output approaches zero. Finally, we assume that $F(.,.)$ is homothetic (the marginal rate of substitution between the two inputs depends only on their ratio). We remark that there is no significant loss of generality in assuming that sector b uses only skilled labour. The crucial assumption is that the two sectors can be **ranked** in terms of skill intensity. (See Fershtman–Weiss [1992]).

Firms. There is a fixed number of identical firms in the economy which compete with each other and seek to maximize profits. These firms hire workers, pay wages and distribute profits. We denote by w_{ij} the wage of a worker with skill $i \in \{l, h\}$ working in sector $j \in \{a, b\}$. We denote by π_j the aggregate profits in sector j . Wages and profits are denominated in units of output, whose price is normalized to 1. Profit maximization implies that

$$(5) \quad \pi_j = \Pi_j(w_{lj}, w_{hj}), \quad j=a, b,$$

where, the profit functions, $\Pi_j(.,.)$ are decreasing and convex in the wages. We denote aggregate profits of the two sectors combined by π .

The Distribution of profits. The profits of the firms are distributed in the population according to a prespecified distribution of ownership. Each member of a newly born cohort

has a claim for some **share**, θ , of the aggregate flow of profits, π , which he will enjoy as income throughout his life. Shares of different entrants may differ. As the individual dies he bequeaths his share to a newly born member of the new cohort so that the wealth distribution remains fixed. We assume that θ is distributed uniformly in the range $[1/NT-\sigma, 1/NT+\sigma]$, where, $\sigma < 1/NT$ is a parameter measuring the degree of inequality in the distribution of wealth. We denote by y the non wage income flow of the worker (that is, $y = \theta\pi$). This flow is independent of his occupational and educational choice. Clearly, y is distributed uniformly in the range $[(1/NT - \sigma)\pi, (1/NT + \sigma)\pi] \equiv [\underline{y}, \bar{y}]$.

Consumers. Given his share in aggregate profits, each new entrant chooses his level of skill and his sector of employment. In choosing an occupation or a skill level the worker takes the wage and the social status of each occupation as datum. Since the economy is stationary these choices are maintained throughout the whole life-time of the consumer. The occupational choice of the individual determines the flow of nonmonetary returns that he will receive in the form of occupational status. The educational choice, together with the choice of occupation, determine his life time earnings.

Each new entrant has three options: Enter sector a with low level of education. Enter sector a with high level of education. Enter sector b with high level of education. The associated utility flows are

$$(6) \quad u_{la}(y; \psi) \equiv U(y + w_{la}, s_a; \psi),$$

$$(7) \quad u_{hj}(y; \psi) \equiv U(y + w_{hj}(T-D)/T, s_j; \psi), \quad j=a,b.$$

Equilibrium. An equilibrium in this model is an allocation of workers into sectors and skill levels and an associated wage profile such that:

- i) Given the wages, the implied occupational status and the implied non wage income each worker maximizes his life time utility.
- ii) Given the wages, firms maximize profits.
- iii) The markets for each type of workers clear.

In equilibrium, sector a will always produce a positive amount and use both skilled and unskilled workers. (Owing to the assumptions that the marginal costs approach zero as q_a approaches zero and that both inputs are essential.) Since all workers in sector a enjoy the same level of status, it can attract entrants with schooling and entrants without schooling only if they can expect the **same** level of life time earnings, that is,

$$(8) \quad w_{ha}(T-D) = w_{la}T.$$

Otherwise, $u_{1a}(y; \psi) > (<) u_{0a}(y; \psi)$ for all (y, ψ) , which means that **all** new entrants to sector a prefer to have no schooling, or **all** workers entrants to a prefer to have schooling. Neither of these extreme cases constitute a long run equilibrium.

Due to constant returns, sector b need not produce in equilibrium. However, since the marginal costs in sector a are increasing, sector b will also produce a positive amount, provided that the the number of entrants, N , is sufficiently large. We shall be only interested in equilibria where both sectors produce positive amounts. To guarantee a positive supply of workers to sector b the set:

$$(9) \quad B \equiv \{(y, \psi) | u_{hb}(y; \psi) \geq u_{ha}(y; \psi)\}.$$

must be non empty. To guarantee a positive demand for workers in sector b the wage can not exceed the productivity of skilled workers, that is, $w_{hb} \leq 1$. Strict inequality cannot be an equilibrium since that would generate an infinite demand for skilled workers in sector

b. Hence,

$$(10) \quad w_{hb} = 1.$$

It follows from (10) that, in equilibrium, $\pi_b = 0$ and aggregate profits are fully determined by the sector with decreasing returns, sector a.

Finally, market clearing requires that the number of individuals in school $(n_{ha} + n_{hb})D/(T-D)$ and the number of individuals employed $(n_{ha} + n_{hb} + n_{la})$ exhaust the whole population, NT. That is,

$$(11) \quad (n_{ha} + n_{hb})T/(T-D) + n_{la} = NT.$$

3. SOCIAL STATUS AND WAGES

The model outlined above captures the main features of Adam Smith's theory of compensating wage differences. In particular,

Proposition 1. (Compensating Wage Differentials):

In an nontrivial equilibrium, where both sectors are active:

- i) Workers with higher level of skill receive a higher wage.
- ii) The sector using the higher proportion of skilled workers has the higher status and pays lower wages for for a given level of skill.

PROOF: . We first show that we must have $s_b > s_a$. Suppose, to the contrary, that $s_b \leq s_a$. By the assumptions on the technology, $e_b > e_a$. Hence, by the monotonicity of $S(\cdot, \cdot)$, $\bar{w}_b < \bar{w}_a$. This last inequality can only hold if $w_{ha} > w_{hb}$. But if both the wage and the status in occupation a are higher, no skilled entrant will choose occupation b. This contradicts the requirement that both sectors produce a positive amount and, therefore,

cannot be an equilibrium. Having established that $s_b > s_a$, it follows immediately that the wages of high skill workers must be lower in occupation b . Since, otherwise, no skilled worker will enter occupation a . \square

We emphasize that Proposition 1 does not require that all workers have the same preferences, it is only required that for each individual, utility is **monotone** in status and consumption. It is crucial, however, that entry is free and that, conditioned on their occupational and educational choices, all workers are equally productive.

As noted by Mincer [1974], the model of compensating wage differences strongly constrains the **relative** wage differences among workers of different skills. In our simple model we have, by (8), that $w_{ha}/w_{la} = T/(T-D)$, a constant which depends on the technology of learning but not on the distribution of preferences and non-wage income. This result reflects the fact that schooling can be acquired by everyone at equal terms.

The second part of the Proposition 1 states that the equilibrium also constrains the **ranking** of different occupations by status and wages. In particular, the ranking is independent of the distribution of preferences and non-wage income. This result reflects the fact that entry into various occupations is free. (See also Weiss–Fershtman [1992].) However, the size of the sectorial wage differential is a variable which does depend on preferences and on the distribution of wealth. The existence of wage differences of workers with the same skill implies that the marginal product of identical workers differ and physical output is not maximized in a competitive equilibrium. The main purpose of this paper is to examine the wage gap across sectors and analyze their implications for output and welfare.

To simplify the analysis of wage differences across sectors, we shall assume from now on that all workers have the **same** preferences (i.e. an identical ψ). This implies that the equilibrium assignment of workers into different occupations and skill levels is fully determined by their non-wage income, the only remaining personal attribute. In

particular,

PROPOSITION 2 (Self Selection by Non-Wage Income): Assume that workers have identical tastes and that social status is a normal good. Then, there is a unique value of non-wage income, y_0 , such that all workers with $y > y_0$ work in sector b, which has the higher social status and all workers with $y < y_0$ work in sector a, which has the lower social status.

Proposition 2 reflects our assumption that wealthy individuals (i.e, individuals with high non-wage income) "consume" more status and are willing to give up wages. Since the sectors with high proportion of skilled workers have, in equilibrium, a higher status, it follows that, on the average, wealthy individuals will be more educated. This occurs despite the fact that education per-se is not included in the utility function and that workers in each sector obtain the same status regardless of their education level.

4. CULTURE, INEQUALITY AND AGGREGATE OUTPUT

In this section we examine the effects of changes in preferences towards occupational status and in the distribution of non wage income on the equilibrium wage structure and on aggregate output.

To conduct the comparative static analysis, we shall reduce the equilibrium conditions down to two interpretable conditions which determine the wage compensation for differences in status and the average level of non-wage income. One relationship represents the supply conditions and states that some individual must be indifferent between the two occupations. As we shall show below this requires that wage and non-wage income are positively related. The other relationship represents the demand conditions and states that profits and wages must be negatively related.

Since the equilibrium condition (8) implies that the wage ratio of skilled to unskilled workers in sector a is constant, all employment levels depend only on a single wage level,

say, w_{ha} . Consequently, output and profits depend only on w_{ha} . Profit maximization and the homotheticity of the production function imply that the employment **ratio** in sector a must also be constant. Hence, in equilibrium, the status of occupation a is monotone increasing in w_{ha} while, by construction, the status of occupation b is constant.

The equilibrium relationship between wages and aggregate output requires some further explanation. Aggregate physical output is given by $q = q_a + q_b$. As the wage level in sector a increases, firms in this sector demand less of both types of workers. Hence, sector a contracts and, since the total labor force is fixed, sector b expands. Due to (8) and (11), we can write the aggregate output as a concave function of a single input, say, n_{ha} . Therefore, there is an allocation which maximizes output. Clearly, this allocation must satisfy the requirement that the marginal productivity of skilled workers is the **same** in both sectors. A competitive economy will achieve this maximum only if $w_{ha} = w_{hb} = 1$. However, in an equilibrium with positive demand for status, $w_{ha} > 1$, and, throughout this range, aggregate output is monotonically decreasing in w_{ha} .

Proposition 2 implies the existence of a "marginal worker" (i.e a worker with non wage-income y_0) who is indifferent between all three options. For this worker

$$(12) \quad U(w_{hb}(T-D)/T + y_0, s_b; \psi) = U(w_{ha}(T-D)/T + y_0, s_a; \psi).$$

Under the assumption of a uniform distribution of non-wage income, the number of workers employed in sector a is given by

$$(13) \quad (y_0 - \underline{y})/2\sigma\pi = (n_{ha}T/(T-D) + n_{la})/NT.$$

We can substitute from (13) to eliminate y_0 in (12). Among the remaining variables in (12), w_{hb} and s_b are constant while n_{ha} , n_{la} and s_a depend only on w_{ha} . This gives a reduced form relationship between values of π and w_{ha} , satisfying (12). As non-wage income rises more skilled workers are attracted to the high status occupation, b, and, to maintain the equilibrium, the wage for skilled workers in occupation a must rise. This relationship is described by the curve uu in Figure 1.

Substituting from (8) into (5), we see that the input demands imply a negative relationship between π and w_{ha} . This relationship is indicated by the curve dd in Figure 1. The curves uu and dd can be used to obtain the main comparative analysis results.

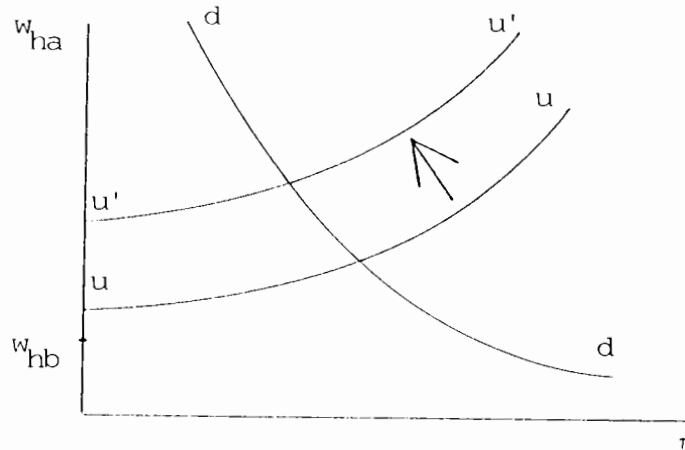


Figure 1

The curve $u'u'$ corresponds to an increase of ψ .

Consider, first, a cultural change such that all individuals in society regard social status to be more important relative to private consumption. (i.e. ψ increases). This means that the sector with lower status, i.e., sector a, will have to pay a higher wage compensation to attract the same amount of labor. The curve uu shifts upwards and the

equilibrium value of π declines while the equilibrium value of w_{ha} rises. These outcomes have implications for other variables in the system, including aggregate output, which we summarize as follows

PROPOSITION 3 (Cultural Effects). In a society where status is relatively more important we have:

- (i) A higher wage gap between the sectors with low and high social status.
- (ii) A smaller aggregate level of physical output.
- (iii) A greater output of the sector with the high skill intensity.
- (iv) A higher percentage of educated workers.

Proposition 3 highlights the basic trade off between cultural attitudes and economic performance. The more emphasis put by society on social status the lower will be the national income as it is conventionally measured. The reason is that workers who prefer status will be attracted to occupations with low physical productivity.

Consider, next, a change in the distribution of wealth. Suppose that inequality as measured by σ increases. Little reflection shows that the curve uu may shift upwards or downwards, depending upon the relative size of the two sectors. If the marginal worker has an above average income (i.e most workers are in sector a) then an increase in inequality makes this person more wealthy and, given the current wages, he will prefer to switch to sector b . Thus the wage compensation paid by sector a must increase. Conversely, if the majority of workers are in b the marginal worker will become poorer and switch to a . In this case, the wage compensation for workers in sector a will decline (see Appendix). We conclude that

PROPOSITION 4 (Inequality Effect): An increase in the inequality in the distribution of non-wage income raises the wage gap between high status and low status occupations and reduces output if the low status sector employs the majority of the workers. Conversely, an increase in inequality lowers the wage gap and increases output if the low status sector

employs a minority of the workers.

Proposition 4 highlights the fact that the demand for status creates a link between the distribution of non–wage income and aggregate output. In the most common case, where the high status jobs employ only a minority of the workers, an increase in inequality is harmful for aggregate output.

5. STATUS AND WELFARE

In the previous section we have shown that output is not maximized in the competitive equilibrium. This is not surprising given that individuals also care about non–monetary returns such as occupational status. In this section we will show that the competitive equilibrium is not Pareto efficient and will discuss the methods for promoting efficiency. Our discussion is divided into two parts. We will first consider the short–run equilibrium in which the type of workers, i.e., the number of skilled and unskilled workers, are given. We will then consider the long–run equilibrium in which workers can also acquire education.

In the short run, given the number of skilled workers in the society, the competitive equilibrium is inefficient. Starting from a competitive allocation, consider a shift of an educated worker from sector b to sector a . This reallocation results in an increase in total output and a higher status in sector a , while the status of the workers who stay in sector b remains unchanged. For the worker at the margin, who is just indifferent between the two occupations, the increase in output is sufficient to compensate him for the reduction in status. It is possible, therefore, to generate a Pareto improvement relative to the competitive allocation. The reason for the short run inefficiency of the competitive equilibrium is that the skilled workers ignore the externality that their occupational choice impart on other workers.

In the long run, when workers are allowed to change their investment in schooling, there is an additional externality. Each entrant decides on his investment in education by comparing the income and status of a skilled worker with that of an unskilled worker, while ignoring the effect of his investment on the other workers who would enjoy a higher occupational status if he acquires schooling. This type of externality also implies that the competitive equilibrium is not Pareto efficient. Starting from a competitive allocation, consider a reallocation in which an uneducated new entrant into a is sent instead to school for D periods and is then assigned to sector a . This reallocation will maintain the total output of sector a and raise the social status of all workers in this sector. Since workers in sector b are unaffected by the reallocation we obtain a Pareto improvement relative to the competitive allocation.

To promote efficiency the recommended public policy is to subsidize education and to restrict the size of the high skill–high status sector. This policy looks at first glance to be contradictory, but it comes to correct the over expansion of the high status sector and to promote education in order to take advantage of the positive educational externalities. Notice that promoting education is not for the sake of increasing output, but to take advantage of its impact on social status. Thus, the recommended policy need not raise output. In fact, the transfer of workers from sector b to sector a increases total output while subsidizing education reduces it.

Promoting education can be done simply by subsidizing it. Restricting sector b can be done by administrative measures, i.e. putting a constraint on the size of the sector, as is apparently the case in India. However, the resulting queues may lead to other inefficiencies such as unemployment among the highly educated (see Blaug (1972, pp.236–239) and Weiss–Fershtman [1992]). A preferable alternative, which can prevent queuing, is to supplement the quantity restriction by a lump sum tax on entrants into the high status sector.

CONCLUSIONS

The particular model of compensating wage differences presented in this paper is admittedly very stylized. Some of its implications are reasonably well supported by the evidence. In particular, the model is consistent with the long run stability of the relative wage differentials across different levels of schooling and with the long run stability of the ranking of different occupations in terms of social status. However, the evidence concerning the prediction that wages are negatively correlated with occupational status is somewhat mixed. It is well documented, for instance, that wages for workers with a given level of schooling and in given occupation are substantially lower in academia than in private industry (see Weiss–Lillard [1978]). On the other hand, Duncan and al. [1972, Table 8.16] find that, holding schooling constant, wages are **increasing** in occupational status. This failure of the model may reflect the neglect of barriers to entry and heterogeneity in individual talent.

Another sharp implication of the model is that workers with high non–wage income will self select into high status occupations and will therefore have low earnings from labor. The empirical relationship between non–wage income and wage income has not been studied in sufficient detail. However, there is some evidence that individuals with high parental income are more likely choose high status occupations and to be more educated, on the average. (See Duncan and al. [1972])

Our main purpose in this paper was not to generate testable implications but to illustrate how the thrive for social status can affect economic performance. We have shown that an increase in the demand for status, caused by cultural differences or by differences in the distribution of non–wage income, create a wage gap among equally skilled workers and reduces output. Part of this reduction is to be expected as workers shift their attention to non–monetary attributes of their work. However, the externalities caused by the public good character of occupational status imply that output is below its efficient level.

It is quite common to attribute differences in individual performance to heterogeneity in tastes. We claim that heterogeneity among societies can play a similar role in determining economic development. We do not wish to imply that personal or national characteristics alone provide an "explanation" to differences in economic performance (e.g. that slow growth is caused by national laziness). Rather, cultural differences act as intervening factors that together with economic incentives produce observable outcomes. In this paper we have chosen to focus on the social status of occupations, a factor which has been extensively studied in the sociological literature. We have shown that different attitudes towards social status affect the equilibrium outcome for some key economic variables such as wages and output. But we also recognize that economic activity has cultural implications. Specifically, the status of different occupations depend on the, economically motivated, occupational and educational choices of the individuals in society. This structure of feedbacks calls for the combined analysis of economic and sociological factors within a general equilibrium framework. We believe that this approach will provide a much better understanding of the economic performance and evolution of culture in societies.

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APPENDIX

The purpose of this appendix is to supplement the comparative statics analysis in section 4.

Determination of the shape of the uu curve. Let us rewrite equation (13) as

$$(A1) \quad y_0 = \underline{y} + 2\sigma\pi(n_{ha}T/(T-D) + n_{la})/NT = \underline{y} + 2\sigma\pi G(w_{ha}),$$

where, $G(\cdot)$ is a decreasing function (since both n_{ha} and n_{la} depend negatively on w_{ha}) and $0 < G(\cdot) < 1$. Therefore, substituting for \underline{y} , we obtain

$$(A2) \quad y_0 = \pi[(1/NT - \sigma) + 2\sigma G(w_{ha})].$$

Observe that y_0 is increasing in π and decreasing in w_{ha} .

Following Weiss [1976], one can show that if status is a normal good and if y_0 is a solution of

$$(A3) \quad U(w_{hb}(T-D)/T + y_0, s_b; \psi) = U(w_{ha}(T-D)/T + y_0, s_a; \psi),$$

then, for $s_b > s_a$,

$$(A4) \quad U_1(w_{hb}(T-D)/T + y_0, s_b; \psi) > U_1(w_{ha}(T-D)/T + y_0, s_a; \psi),$$

were, $U_1(\cdot, \cdot)$ denotes the first partial derivative of the utility function with respect to consumption. Setting $w_{hb} = 1$, using (A4), (A2) and the fact that s_b is constant while s_a is increasing in w_{ha} , we obtain, upon total differentiation of (A3) with respect to π and w_{ha} , that an increase in π must be accompanied by an increase in w_{ha} . This justifies the shape of the curve uu in Figure 1.

Comparative statics. Consider an increase in σ . Observe that the curve dd is unaffected by this change. To find the shift in the uu curve, we hold w_{ha} fixed and consider the impact of σ on π . Since π and σ enter into (A3) only through y_0 , a fixed w_{ha} implies a fixed y_0 and therefore, by (A2),

$$(A5) \quad d\pi/d\sigma = \pi(1 - 2G(w_{ha}))/y_0.$$

Hence, the curve uu shifts upwards for all w_{ha} such that $(G(w_{ha}) < 1/2)$, that is, for wages sufficiently high to guarantee that sector a has less than half of the labor force, and will shift downwards otherwise.