Gender discrimination and returns to self-employment
Evidence from rural India

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Abstract

Although the importance of reducing gender discrimination for social and economic development is now widely recognized, most studies focus on the formal sector. Representative data from rural India demonstrate that informal markets, which are of great relevance for the poor, are characterized by high gender-wage differentials that are unrelated to productivity. While increasing wage levels, economic development fails to reduce such gender discrimination. Large differences in estimated marginal value products between family and hired labor suggest that improving access by the poor to productive assets that could facilitate self-employment may have significant benefits. Mechanisms for doing so are discussed.

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1. Introduction

Women's ability to control and access resources is increasingly recognized as being of great importance for a wide range of social and economic outcomes. Such an ability is shown to have effects on spending patterns within the household, the level of investment in children's education and health, lower fertility rates, and generally result in better outcomes at the community level (Quisumbing and Maluccio 2003). At the same time, a number of factors, many rooted in cultural attitudes pertaining to access to assets, often put women at a strong disadvantage in situations associated with exercising economic power, and decision-making. Also, several studies have shown that legal security of women's property rights is often significantly below that what is enjoyed by men. Furthermore, the ability of women to receive assets through inheritance or to freely inherit them to others is often quite limited. Consequently, women need to either depend on their husband's or family's assets or, need to depend on their own labor to make a living. This in turn implies that the returns they will be able to earn from either self-employment or in the labor market will be an important determinant of their ability to make a living.

It is often held that in environments where women's ability to own access or, inherit assets is limited, labor markets also discriminate heavily against them. As a result, there has been a growing interest in determining the size and magnitude of discrimination against women in the labor market in developing countries (an issue that has been the subject of a large literature in the developed world). Results show that the extent of discrimination against women in developing countries' labor markets is indeed considerable and in many cases larger than what is found in the developed world.

However, the normative implications of such discriminations are somewhat unclear for a number of reasons. First, contrary to the developed world where most employment is indeed in formal markets, a significant part of work in developing countries tends to happen in informal markets. While in most of the developing world, women's decisions to enter wage labor is likely to be made based on considering the associated costs and benefits, markets for formal employment in much of the developing world have been shown to be characterized by severe rationing. Participation is no longer a result of the comparison between costs and benefits of being employed. This implies that to gain a complete picture of the opportunities available for gainful employment and of any gender bias, it is required to look not only at formal but also at informal markets for wage labor. The latter is likely to be of particular importance to the poor who lack the human capital to enter into the formal sector and the physical assets to become self employed.

A second reason is that there are ranges of factors that are likely to have significant impacts on the outcomes achieved in wage labor markets in rural settings. These include the following (i) The fact that other factor markets such as those for credit and land may be imperfect or non-existent. (ii) Limited mobility and availability of alternative sources of employment. (iii) Individuals' opportunities are affected by their social status and traditional norms. (iv) Significant fluctuations in labor availability across seasons. This provides a level of market power to employers that allows them to extract additional surplus from the labor force whose members have limited alternative opportunities in terms of access to assets, and, cultural and social norms that limit ownership of assets that may make it impossible for them to enter into self-employment.

In this paper, we consider the evidence for discrimination in rural wage labor markets using the example of casual labor markets in India. This is of relevance because casual labor markets are a key source of income for the rural poor. Women form a significant component of the rural labor force and contribute to the income of the rural households. However, the labor market discrimination against them through both the process of wage setting, and rationing caused by social factors (Gleason 2003), (Panda and Agarwal 2005) inhibit the income growth of households. In addition to testing for the presence of discrimination against women in labor markets, we also discuss the extent to which such discrimination can be expected to decline over time and use the comparison between returns to labor in the wage labor market as compared to the potential they could obtain from self-employment.

The paper is structured as follows. Section two briefly surveys the literature on discrimination and highlights the policy relevance of this topic, It then discusses the conceptual framework and methodological issues to be addressed and, reviews evidence on gender discrimination and the possible measures to reduce it in the Indian context. Section three presents the data used for analysis, provides descriptive evidence of gender differences in wage rates as well as the reliance of rural households on wage labor markets. The empirical strategy to be used in our analysis is also introduced. Section four presents the results and discusses possible implications for policy. Section five concludes.

2. Gender discrimination: Relevance and evidence

In a broad sense, gender equality refers to women's enjoyment of equal rights in a number of dimensions. These include economic opportunities, access to public goods, participation in public decision-making and, employment. Although linked to some of these factors, wage discrimination is generally understood as referring to women being paid lower wages after accounting for observable attributes. Even though considerable progress has been made in studying these issues during the past decade, most of the

available work has focused on formal markets in developed economies and, to a more limited extent, developing countries thus providing a justification for the empirical investigation pursued in this paper.

2.1 Gender equality in the developed world

Since the topic of gender discrimination was first put on the agenda in the late 1950s (Becker 1957), a large literature has explored the determinants of this phenomenon. Gender discrimination in wages is commonly defined as the gap in earnings between male and female workers that remains once all observable characteristics have been accounted for. Analysis has become increasingly sophisticated and use various techniques to correct for gender-differences in the probability of labor market participation (Blau and Kahn 2000) or decomposing the extent of discrimination (Neuman and Oaxaca 2004).

Three stylized facts seem to emerge from this literature. First, during the last century the extent of gender discrimination has decreased significantly (Blau and Kahn 2004). Most of this reduction can be attributed to the fact that a greater number of occupations have opened up for women and that labor market competition has become more meritocratic (Goldin 2002), Second, the level of wage discrimination affects different segments of the wage distribution differently. In particular it is generally found to decrease with higher levels of education (Montgomery and Powell 2003), notwithstanding the fact that participation of males at the very top of the earnings distribution is still much larger than that of females (Gneezy *et al.* 2003). Third, distinguishing between gender based discrimination in wage setting, and other factors such as social norms, is not easy because, labor markets do not operate in isolation. Labor market outcomes cannot be examined in isolation of various social norms, gender roles within families, and institutions (Badgett and Folbre(2003) ,Gilbert *et al.* (2002)).

In addition to the definition and measurement of discrimination, attention has focused on whether exogenous events will affect the level of discrimination in specific ways. One issue of interest is whether economic openness in general and, international trade in particular will reduce levels of discrimination. Comparison of gender wage gaps in industries with different levels of competition before and after trade liberalization supports the hypothesis that trade could benefit women by reducing ability of firms discriminate against them (Black and Brainerd 2004). This is supported by data from emerging market economies such as Hungary where women's position showed a marked improvement due to trade opening (Campos and Joliffe 2004) as well as other studies pointing in the same direction (Jarrell and Stanley 2004). At the same time, if markets are imperfect, the opposite result can easily prevail. For example,

evidence for Korea and Taiwan suggests that trade may reduce women's bargaining power to achieve wage gains due to the weakening of unions (Berik *et al.* 2004). Infact, overall development will not necessarily result in an eventual reduction of gender bias (Francois 1998) elsewhere it has been shown that specific action to counter economic imbalances to offset discrimination can under certain conditions be shown to have an unambiguously positive impact on overall growth (Garcia-Minguez and Sanchez-Losada 2003).

It has long been noted that, if women are discriminated against in the wage labor market, it would be rational for them to shift towards self-employment, implying that in societies where discrimination is very high, one should see higher levels of female entrepreneurship (Moore 1983). Failure to observe this in practice may point towards a more multi-dimensional nature of discrimination that may include cultural norms or towards imperfections in other markets, e.g. those for credit and human capital accumulation, that may lead to spillovers from wage labor to self-employment (Coate and Tennyson 1992).

2.2 Gender equality in developing countries

Compared to the large volume of literature on labor market discrimination in the developed world, the interest in gender discrimination in developing countries is a more recent nature phenomenon partly because formal labor markets are less ubiquitous in developing countries and also because data on these are less easibly available. However, a growing literature has recently started to explore this issue (Ng 2004, Sakellariou 2004, Arabsheibani *et al.* 2003, Dong and Bowels 2002, Hinks 2002). Analysis of gender issues has been motivated by three factors. (i) Increasing evidence about the negative impact of gender discrimination on growth. (ii) Recognition that systematic differences in rewards to certain skills will affect households' investment decisions and thus the potential for and nature of future growth. (iii) The fact that effective policy intervention to confront the many facets of gender discrimination will be impossible without an in-depth description and understanding of the often interlinked manifestations of this phenomenon at the local and a more general level.

An immediate consequence of occupational segregation and the associated exclusion of women from certain positions is a reduction in the relative earnings of females compared to males. At the same time, compared to an equilibrium without discrimination, such segregation will also lower equilibrium wage rates for males and will reduce the amount of talent utilized in the economy. This could negatively affect technology adoption and overall growth. In fact, studies show that gender bias, defined either in terms of enrolment and educational attainment (Abu-Ghaida and Klasen 2004, Dollar and Gatti 1999), labor market participation (Esteve-Volart 2000), or wage premia (Seguino 2000), tends to reduce overall

growth. The potential importance of this is illustrated by the fact that, in cross-country regressions, more than one quarter of the difference in growth rates between South and East Asian economies is attributed to differences between male and female rates of education (Klasen 2002). At the country level, evidence for discrimination against females in urban labor markets emerges, for example, from India (Kingdon and Unni 2001) where cross-state estimates point to a large impact of differences in economic opportunities between genders on growth. According to these estimates, a 10% increase in the female to male worker ratio is estimated to increase net domestic product by 8%. Another pertaining to India study shows that raising the levels of female employment nation-wide, would increase output by a total of 45% (35% due to the increase in female managers and 10% the increase in female workers), an impact that is statistically significant (Esteve-Volart 2004).

In addition to affecting the utilization of resources at any point in time, gender discrimination will affect investment behavior. The underlying intuition is simple. If the returns to education for women in the labor market are lower than those for men, parents will rationally decide to put less effort into education of girls than of boys (Alderman and King 1998, Hazarika 2000). In addition to the impact on the economy's human capital stock, better returns to education for women, will also affect development if it gives rise to positive externalities, like reduced fertility, the quality of child nutrition, maternal care and human capital provided to the next generation, over and above the addition to the economy's stock of human capital (Klasen 2002).

If gender discrimination reduces economic opportunities then government action to counter it is desirable. Intervention is made difficult by the fact that discrimination is due to complex interaction of social norms (Such as attitude towards women's employment, Jaathi) intra household allocations that affect endowments, and other factors that affect participation in certain segments of the labor market. However, aiming to achieve gender equality through regulatory mechanisms can easily backfire for example, by protecting only the so called "creamy layer" who have entered into the job market while excluding the majority who were not able to do so (Azmat *et al.* 2004). This has given rise to demands for a multi-pronged approach that combines access by women to property (Panda and Agarwal 2005), opportunities for civic participation e.g. through reservation of a certain share of local government seats for women or other disadvantaged groups (Narasimhan 2002), and issues pertaining to social discrimination based on Jaathis (Anderson 2003). Even though there is little evidence of the impact of such measures on the level of discrimination, studies suggest that such an approach may have improved the delivery of local public goods (Chattopadhyay and Duflo 2004).

2.3 Conceptual framework

We first test for presence of wage differences by gender unrelated to observable characteristics, separately for agricultural and non-agricultural casual wage labor markets. We use a Heckman 2-stage estimation to estimate participation and earnings equations for a nationwide representative sample. The participation equation for individual *i* in household *j* and community *k* can be formally specified as

$$P_i = a_0 + a_1 \mathbf{M_i} + a_2 \mathbf{H_j} + a_3 \mathbf{C}_k + a_4 \mathbf{D} + e_i \qquad (1)$$

where P_i is a dummy that equals 1 if individual *i* participated in wage labor and 0 otherwise, $\mathbf{M}_i$, is a vector of individual attributes that affect participation in wage labor markets and wage earnings, $\mathbf{H}_j$ is a vector of household characteristics that affect participation but not wage earnings, $\mathbf{D}$ is a vector of provincial and year dummies, e_i is an *iid* error term, and a_0, a_1, a_2, a_3 and a_4 are coefficient vectors to be estimated. Member-level variables included in $\mathbf{M}_i$ are age and its square as a proxy for experience, a gender dummy to assess whether incentives for wage work differ between males and females, the level of formal education as a proxy for human capital, and caste dummies. Household characteristics in $\mathbf{H}_i$ include household size, a dummy for whether the household is landless or not, and the value of households' initial endowments with different types of assets. The wage equation is then defined as

$$w_{ij} = ß_0 + ß_1 \mathbf{M}_i + ß_2 \mathrm{PH}_i + ?_i \qquad (2)$$

Where $\mathbf{M}_i$ is defined as above, PH_i is the inverse mills ratio, $?_i$, an error term, and $ß_0$,, $ß_1$ and $ß_2$ are coefficients or vectors of coefficients to be estimated. While significance of $ß_2$ would imply that entry into the casual labor market is not random, the significance and magnitude of coefficients in $ß_1$ will allow inferences on returns to specific attributes (e.g. human capital) and, for a male dummy or its interaction with education, the presence of systematic differences in casual wage rates across sex groups which is commonly interpreted as an indication for gender discrimination[1].

It is often assumed (explicitly or implicitly) that discrimination will disappear over time due to better market integration or higher levels of mobility. Unfortunately, lack of a gender-disaggregation of labor inputs in the 1982 survey prevents us from estimating whether and if yes in what direction the gender

[1] One of the propositions of this paper is that policy can affect participation and wages. Towards this end, we examine whether policy pertaining to access of assets, affects participation. We use a subset of this data in 1999 for which information on individual asset holders is available. Data on land, farm equipment, financial assets, consumer durables, building, jewelry, and assets are included. The tests are carried out for married male and female as well as unmarried male and female.

premium changed over time. However, availability of village information allows us to include mean and inequality of village income (the latter approximated by the Gini coefficient of the village level income distribution) to assess whether levels of discrimination are affected by levels of economic development in predictable ways. The hypothesis that discrimination against female casual labor decreases with the level of economic development then translates into the prediction that the coefficient on an interaction between a male dummy and the level of village income is negative and significant.

While the assumption of equal innate ability between males and females is easily justified in formal labor markets, especially if the sector of employment is controlled for, one may suspect that differences in physical ability and the ability of men to carry out work that is more strenuous physically could play a greater role in casual labor markets. In this case, part of observed differences between wages received by men and women could reflect productivity differences rather than discrimination. To assess whether this is the case, we estimate a Cobb-Douglas agricultural production function where labor input by males and females as well as hired and family labor is distinguished. Letting $k = f, h$, be a subscript for family and hired labor, respectively, we can make use of the detailed information on labor- and non-labor inputs in agricultural production available in our survey to estimate

$$Y_i = ?_0 + ?_1 A_i + ?_2 R_i + ?_{3k} \boldsymbol{L}_i + ?_4 \boldsymbol{K}_i + ?_i \qquad (3)$$

where Y_i is the value of production by household i, A_i is the total area cultivated, R_i is the share of crop area under irrigation, $\boldsymbol{L}_i$ is a vector of family labor days and the share of male over female labor, $\boldsymbol{H}_i$ denotes the corresponding vector for hired labor, $\boldsymbol{K}_i$ is a vector of the user cost of other inputs,[2] $?_i$ is an iid error term and $?_i$ are coefficients to be estimated. To test for systematic productivity differences between male and female labor days for family and hired labor, we include the share of labor days contributed by males in addition to total labor days in $\boldsymbol{L}_i$ and $\boldsymbol{H}_i$ noting that significance of the corresponding coefficient would imply that indeed female labor is less productive than labor contributed by males, either for hired or family labor (Frisvold 1994).

In addition, the coefficients from the production function also allow us to estimate marginal returns to different types of labor. Let Y_m and L_{mk} be the sample means of output and days of labor of type k, respectively. Then VL_k, the value marginal product for labor of type k, is given by $?_{3k} Y_m / L_{mk}$. As VL_k is just a linear combination of regression parameters, we can test the equality of marginal products for

different types of labor. Moreover, if producers maximize profits, the value of VL_h should equal the wage paid to hired labor.

3. Data and descriptive evidence

We use data from a large and nationally representative data set for India to illustrate the relevance of discrimination in informal labor markets for the vast majority of the poor and landless in rural areas and the high levels of vulnerability that are a corollary of such dependence. Aggregate figures on wages paid as well as participation in different types of formal and informal employment suggest that more detailed exploration of the potential for discrimination is indeed warranted.

3.1 Data and key household characteristics

We use a nationally representative 1999 survey of 7,474 rural Indian households with about 30,000 individuals above the age of 14 in 250 villages conducted by the National Council for Applied Economic Research (NCAER). At the household level, the data include comprehensive information on self- and wage employment, thereby allowing us to go beyond a merely descriptive assessment of wage differentials and explore the extent to which these differences can be ascribed to discrimination once the propensity to participate in labor markets is controlled for. Moreover, availability of data on income and its distribution at the village level from a complete listing of all households allows us to make inferences on the extent to which discrimination may change with economic development or overall inequality. Detailed data on agricultural production inputs allow us to test for systematic gender differences in labor productivity and obtain an estimate of the possible earnings by females in self-employment.

Information on income sources as well as other household characteristics for the whole sample and disaggregated by households' asset status (landed or landless), and their position in the income distribution is presented in table 1. It points towards significant differences in households' endowments

Table 1 here

with physical and human capital, a disproportionate importance of casual labor markets for the poor and landless who derive the large majority of their income from this source, and significant differences in implicit wage rates.

The first two panels of table 1 highlight the strong correlation between poverty and endowments with human and physical capital. The poor have much larger households than the rich (7.5 as compared to 4.9

[2] These inputs include seed, manure, fertilizer, pesticide, and others such as irrigation water and electricity. In cases where own equipment was used the value for renting an equivalent piece of equipment is given and used in the regressions.

members for the bottom as compared to the top quintile) and, with 3 as compared to 6 years of schooling by the head, significantly lower endowments of human capital. This is correlated with low endowments of land and other physical assets; 33% of the bottom as compared to 13% in the top quartile are landless and even for those who have land, the mean level for the top quartile is, more than double that of the land endowment of the bottom (6.4 ac compared to 2.3 ac.). Differences are equally pronounced with respect to non-land assets, the level of which is more than four times that of the bottom quartile for those in the top quartile. Composition of assets is more biased towards house and consumer durables as compared to productive assets for the bottom quintile. While we also find a greater incidence of SC/ST and other backward castes (OBCs) among the bottom quartile, relative magnitudes (15% vs 11% for SC/ST and 24% vs. 22% for OBCs) also suggest that differences in access to assets are more pronounced.

It should not be too surprising that such differences in basic endowments will translate into significant gaps in total income which, as displayed in panel 3, ranges from Rs. 109,394 for the top to Rs. 27,979 for the bottom quartile and Rs. 65,970 compared to Rs. 33,185 for the landed and landless, respectively. Similarly, per capita consumption for the top quartile is with Rs. 12,130 which is almost four times that of the bottom quartile (Rs. 3,143). Furthermore, the composition of income varies significantly between the poor and the rich with the former depending disproportionately on casual labor markets. Households in the landless group or the poorest quartile obtain 62% and 48% of their total income from casual wage labor, a category that contributes only 20% and 12% to the incomes of the landed and the top quartile, respectively.

In the Indian context, demand for wage labor is highly seasonal and may significantly decline in periods with insufficient levels of rainfall, high levels of dependence on wage labor exposes those affected to considerable amounts of risk. To the extent that they lack assets or alternative options to generate income, this makes them highly dependent on wage labor and thus vulnerable to wage discrimination. Considering the number of days worked in casual wage labor and the implicit remuneration obtained helps to illustrate the potential importance of this issue. The bottom panel of table 3 shows that households in the top quartile worked on average 87 days (or about 20% of their total labor time) for wage labor, obtaining an implicit wage of Rs. 152 per day. By contrast, those in the bottom quartile supplied more than four times this amount (411 days in total or 75% of their labor supply) to the labor market but, with an implicit wage of only Rs. 32 per day, ended up with wage earnings that were almost exactly equal to what was earned by the top group. Although part of these wage differentials may be related to productivity and higher education levels, exploring the extent to which these can be attributed to discrimination will be of interest.

3.2 Aggregate evidence

Aggregate evidence pointing towards the potential of wage discrimination is presented in table 2 which

Table 2 here

displays average wage rates for male and female casual labor in agricultural and non-agricultural occupations in the 15 main states in the sample. At the national level, female casual labor is paid 27% less for agricultural casual labor (34 Rs/day as compared to 46 Rs/day for males and females, respectively) and 32% less for non-agricultural casual labor (43 Rs/day compared to 63 Rs/day). In addition, most states are characterized by statistically significant wage differentials of considerable magnitude. In agriculture, differences between male and female wages are significant in 13 out of the 15 states and equal to or greater than 20% in 8 of them. In the non-agricultural sector, where lower participation rates, especially for females, pose some limits on the ability to compare within-states, significant differences emerge in 10 out of the 15 states and in all of these cases, the magnitude of the differences exceeds 20%. We note that even though the non-agricultural sector is characterized by slightly higher wage levels than agriculture, it has a larger wage differential than the latter. Across states, there seems little correlation between wage levels and the gender wage differential; the two states where the gender gap is highest, Tamil Nadu and Kerala, are characterized by one of the lowest and highest wage rates for females, respectively.

Even though they earned significantly lower wages, female participation was disproportionately high in

Table 3 here

unskilled tasks, as illustrated by table 3. One clearly notes that the ratio of female to male participation is much higher in casual than in formal labor markets; in fact in some states (Maharashtra, Bihar, and Rajasthan) women are more likely to participate in such markets than men. Female participation declines apidly as one moves up from casual to salaried workers and managers, where only two states (AP and OR) have a female participation rate above 5%. Thus, while in formal labor markets, use of participation rates can provide an indicator for discrimination (Esteve-Volart 2004), more detailed information on participation as well as wages received will be needed to assess levels of discrimination and their potential impact of such practices on well-being.

4. Econometric results

Econometric analysis highlights that lack of assets and alternative opportunities for self-employment increases individuals' propensity to participate in wage labor markets. Controlling for these and a host of

other factors, those with little human and physical capital (especially land), as well as backward castes, tend to rely disproportionately on casual labor in informal markets. Males earn significantly higher wages than females even after the likelihood of participation and other characteristics are controlled for. We find no evidence for discrimination to diminish with higher levels of economic development. We can not reject the hypothesis that discrimination actually increases with higher levels of per capita income. Drawing on our data on agricultural production to check whether innate productivity differences may provide an explanation does not allow us to reject the hypothesis of equality between marginal products of male and female labor but points towards quantitatively large differences between the returns from own and wage employment. We explore these to derive a number of salient policy conclusions.

4.1 Labor market participation and wage determinants

Results for both the first and second stage from estimating the Heckman regressions of causal wages,

Table 4 here

separately for agriculture and non-agriculture, are presented in table 4. Participation regressions, results for which are displayed in the lower panel, highlight the importance of individual characteristics including gender, asset endowments, social status, and caste. The significance of the inverse mills ratio in both cases suggests that failure to adjust for participation would lead to biased estimates.[3] Consistent with what had been suggested by descriptive statistics, the main reason for individuals to join the casual labor markets is the lack of assets and opportunities elsewhere. Factors that push people into wage labor market participation -in agriculture as well as non-agriculture- include being landless which increases the propensity to participate by 43 percentage points in agriculture and 25 in non-agriculture, being an SC or ST (28 points in agriculture vs. 7 in non-agriculture), and for agricultural but not non-agricultural wage labor, backward caste membership (7 and -7 points, respectively). The likelihood to participate in wage labor is highest at about 30 years. The impact of household size is small in both cases and marginally significant and negative for agriculture but positive for non-agriculture. Male individuals are significantly more likely to participate than females although this is more pronounced in non-agriculture as compared to agriculture. The main pull factors that allow households to escape the dependence on casual labor are asset ownership and levels of education. The fact that both of these significantly reduce the propensity to participate in wage labor, especially in agriculture, suggests that those with a minimum level of assets will go into self employment rather than being left with wage work as the only alternative.

[3] The fact that this ratio is significant only at the 10% level for agriculture provides evidence that rationing of entry is less an issue in these markets, consistent with the hypothesis that such markets provide residual employment for those who are unable to find it elsewhere.

Turning from determinants of participation to earnings highlights that, even though education, age, and caste membership are important, the magnitude of gender bias easily dominates these more traditional factors. Wage levels increase for workers up to an age of 46 and 35 years in agriculture and non-agriculture, respectively, pointing towards higher relevance of experience in the former as compared to the latter. Also, the elasticity of wages with respect to education is, with 0.36, not significantly different between the two sectors and relatively small, supporting the hypothesis that casual labor markets do not provide high rewards to human capital, consistent with the hypothesis that households who do not expect their children to be able to enter formal labor markets might not be too concerned about child labor.[4] While we are unable to discern a wage bias against SC/STs or backward castes in non-agriculture once participation is controlled for, wage levels for these are, according to our estimates, lower by about 3 percentage points.

Even after controlling for age, education, and caste, a considerable gender gap remains. In fact, wages for males are estimated to be higher than those for females by between 27 and 41 percentage points in agricultural non-agricultural labor markets, respectively once all the other factors discussed above are controlled for. This suggests that gender is indeed a main determinant of wages received by those employed, with an impact the magnitude of which is several times larger than that of the more traditional factors (e.g. more than 10 times the level of caste-based discrimination). In fact the mean difference ascertained earlier from descriptive statistics seems to constitute a lower bound.

To assess whether levels of discrimination vary with education, something that has been linked to incentives for human-capital investments in the literature, we interact the male dummy with the level of education (columns 2 and 4). Results from doing so suggest that, in non-agricultural casual labor markets, all the returns to education accrue exclusively to males whereas for females returns to education are not significantly different from zero, providing an added disincentive to female human capital acquisition.

4.2 Will economic growth eliminate discrimination?

Although the underlying mechanisms are rarely clear, it is often implicitly assumed that economic development will eventually lead to the elimination of gender discrimination. While our earlier review of the literature suggests that this can not be taken for granted, it will be of interest to use our data to test at least indirectly for this possibility. Results from doing so for our sample where agricultural and

Table 6 here

[4] To illustrate, raising the level of education from 3 to 5 years would increase the wage received by 0.6 percentage points.

non-agricultural occupations are pooled together are presented in table 6. As results from the selection equation (in the lower panel) are similar to those discussed earlier, we focus on wage determinants directly.

The specification in column 1 which only adds the level of village income to what had been estimated earlier suggests that not too surprisingly, higher income levels will be associated with an increase in wages although the modest size of the elasticity (0.048) implies that the aggregate wage increases are not fully transmitted to casual wage laborers, possibly because of high levels of pre-existing inequality.[5] In fact, availability of the village-level income distribution allows us to test for this possibility with results form doing so suggesting that higher levels of inequality reduce overall wage level (column 2) but have little impact on growth rates.

To explore whether the extent of wage discrimination varies with income levels, we interact the male dummy with village income. Results from doing so, as reported in column 3, suggest that, contrary to what one might expect, the wage differential for male casual workers that can not be explained by the other factors included in the regression, and which is normally equated to discrimination, increases with levels of per capita income. This would be consistent not only with the interpretation that the markets for casual labor considered here are far from competitive but also that higher levels of growth may even reinforce pre-existing inequalities based on differences in status and asset ownership (similar to what was observed elsewhere in the context of dowry payments (Anderson 2003)). From a policy perspective, it implies that, in India's current situation, expecting gender discrimination to disappear with overall economic growth may not be realistic.

4.3 Production function estimates and the potential for self-employment

Although the above results provide strong support for the presence of discrimination, one might argue that these reflect only gender differences in physical ability which imply that male and female labor are not perfect substitutes but that there is instead a need to adjust for labor quality. At least for agriculture, the fact that we have data on the number of days worked by males and females separately allows us to test this hypothesis. Indeed, as discussed above, computation of the value marginal product for family and hired labor also provides an estimate of returns to self- rather than wage employment.

[5] In addition, the estimates point towards significantly lower wages in agriculture and reaffirm earlier findings of a significant positive effect of age and the presence of significant discrimination, the level of which is estimated at 33%.

Results for different specifications of a production function that uses output value from a total of 40 crops

Table 5 here

as the dependent variable are presented in table 5.[6] The elasticity of about 0.4 for land, 0.22 for family labor, 0.07 for hired labor, and 0.23 and 0.14 for seeds and fertilizer, respectively, are in line with the literature and we are unable to reject constant returns to scale in conventional inputs. While experience, proxied by the head's age, is estimated to have a weak impact (significant at 10%), we can not reject the hypothesis that education does not have an impact on the output obtained in agricultural production.

To assess whether the gender composition of family and hired labor affects outcomes, we include the ratio of male to total labor in the respective category in columns 1 and 2, respectively. The lack of significance of the coefficient on this variable in either specification allows us to reject the hypothesis that, in agricultural production, observed gender wage differentials only reflect underlying productivity differences. At the same time, we note that the coefficients on family and hired labor are significantly different from each other and that, possibly due to the fact that it also performs a supervisory function, family labor is indeed significantly more productive than hired labor.

Using the "correct" specification in column 3, where, hired and family labor enter the production function separately, to compute the estimated value marginal product (VMP) for one day of family and casual labor, respectively, allows us to test for the equality of the VMPs for these two types of labor and their relation to wages. In the case of hired labor, the estimated value for VMP_H of Rs 52 is only slightly above the daily wage rate of Rs. 46 for males; indeed the inability to statistically reject equality of the two figures is consistent with the hypothesis that employers act in an economically rational manner. In the absence of significant productivity differences, the much larger and statistically significant gap between the VMP and the female daily wage rate (Rs. 34) points towards labor market discrimination.

A second finding of interest is that VMP_F, the estimated value marginal product for family labor is, with Rs. 157, more than three times that of hired casual labor (Rs. 52), a difference that is statistically significant at 1%. While this suggests that making the transition from wage labor to self-employment would be hugely profitable even if land rent would have to be paid, it raises the question why, in the presence of differences of this magnitude, markets do not bring about a more efficient equilibrium, e.g. by allowing wage laborers, and in particular women for whom the relative benefits of doing so would be

[6] We note that, with a R^2 of 0.74, the predictive power of the regression is very high for a cross section, pointing towards the high data quality that was achieved by very careful accounting of inputs and outputs by the survey.

even greater, to rent in land and make the transition towards self employment and thus escape labor market discrimination.

Although a full answer to this question is beyond the scope of this paper, it has long been known that, in the presence of wealth constraints, mortgage-based acquisition of land by the poor is difficult and thus unlikely to bring about a transfer of land to the poor even in cases where the latter could use it to make more productive use of their labor. At the same time, land rental would be a desirable option with high social benefits and the magnitude of the differential between wages and the returns to self employment should easily allow for payment of land rental. In fact, the most likely explanation for the failure of rental markets to eliminate the large differences is that, in most Indian states, land rental markets is highly circumscribed by legislation that either bans land rentals, limits the amount of rent to be charged, or provides for tenants to gain ownership rights after some time. All regulations of this type will limit the supply of land to the rental market or increase transaction costs to levels that would drive markets into informality and make it impossible for those who want to rent in land to get access to land, even if they

were willing to pay more than the legal maximum (Deininger, Jin, Nagarajan).[7] This suggests that a careful review of the case for such restrictions may be in order and, if it were to lead to reformulation of the applicable policies, could provide large benefits for those, in particular women, who currently depend on wage labor markets.

4.4 Access to assets

It has been shown elsewhere in this paper that access to assets could affect the participation rates of males and females in the market for casual labor. We are able to show that access to land significantly alters the rate of participation for women. The elasticity associated with land related land holdings is significant

Table 7 here

(-0.1702). this implies that policy aimed at inheritance, and land rental need to be strengthened. Similarly access to business assets retards entry of women into the labor force. We also find evidence that the Government has to address the problems associated with access to credit. This is shown in three places. First, where access to credit is from the husband (interpreted as “tied grants”), the propensity to enter the casual labor market increases. Second, access to government credit retards participation. This ties in well with our results that there are gain to self employment and credit promotes self employment Thirdly, where borrowing from parents exists (“untied grants”), the entry into casual labor market is

lesser(significantly). A point to be noted here is that the results on access to assets and credit must be read along with those pertaining to family composition. It is worth noting that these results are not symmetric across married and unmarried women. Presence of very young children seems to have a stronger impact on unmarried women in the family than on married women. Secondly the presence of elderly is also asymmetric. All of these point to the fact that policy aimed at fostering a reduction in gender discrimination (which is rampant in the rural casual wage labor market) cannot be based on single thought experiments that includes measures such as access to credit or access to land.

5. Conclusion and policy implications

The results from the above analysis suggest that casual labor markets in rural India, which provide the economic mainstay for the poorest parts of the population, suffer from significant gender discrimination. The evidence suggesting that gender discrimination will not disappear with broader development implies that there may indeed be scope for government intervention to try and reduce the scope for gender discrimination in such markets. To the extent that both men and he fact that women in particular could earn much higher returns to their labor from self-employment implies that expanding opportunities for self-employment would be one promising strategy to do so. In fact, to the extent that land rental legislation prevents them from doing so, it would be important to amend such legislation to enable the poor, in particular women, who have few other opportunities, to overcome discrimination in wage labor markets, thereby complementing other strategies (e.g. affirmative action) which, unless they are supported by access to economic resources, may yield results that are only of a short-term nature.

[7] In fact, there is considerable anecdotal evidence about groups of poor women in self-help group in AP who are leasing in land and make a profit at rates well above the legally stipulated ceiling.

Table 1. Key household characteristics

	Total	By landownership		By per capita consumption quartiles			
		Landed	Landless	Top	2nd	3rd	Bottom
Household characteristics							
Household size	6.02	6.25	5.29	4.86	5.44	6.27	7.52
Number of family members < 14	1.86	1.88	1.79	1.05	1.45	2.03	2.91
Number of family members between 14 & 60	3.75	3.92	3.22	3.37	3.56	3.85	4.22
Head's age	49.20	50.46	45.17	51.24	49.29	48.57	47.71
Years of education by head	4.28	4.49	3.59	5.98	4.53	3.66	2.93
Land owned (acres)	3.97	5.22	0.00	6.40	3.88	3.29	2.33
Landless households (%)	24.22	0.00	100.00	13.43	21.88	26.84	33.14
ST/SC (%)	18.14	14.73	26.67	10.53	13.81	12.01	15.17
Other backward castes (%)	22.67	23.88	18.98	21.59	22.23	23.04	23.62
Non-land asset s and share of individual components							
Value of all non-land assets (Rs)	195,255	228,053	90,453	368,473	194,104	137,350	81,122
House (%)	46.05	44.21	60.82	41.92	45.09	50.30	59.91
Financial assets (%)	21.95	21.99	21.58	22.71	23.33	20.35	17.85
Farming assets (%)	15.45	17.35	0.18	17.69	14.74	14.02	9.44
Consumer durables (%)	11.44	11.28	12.76	12.91	10.27	10.81	8.61
Livestock & non-farm assets (%)	5.11	5.17	4.66	4.77	6.57	4.52	4.19
Income and its sources							
Total per capita consumption (Rs/year)	6,583	6,968	5,354	12,130	6,387	4,675	3,143
Total household income (Rs/year)	58,155	65,970	33,185	109,394	55,608	39,645	27,979
Total income per capita (Rs/year)	10,646	11,880	6,704	22,689	10,045	6,171	3,682
.. of which from crop production (%)	40.06	51.68	4.43	43.50	44.26	40.20	33.50
.. of which from livestock production (%)	10.64	10.18	7.13	11.36	11.83	10.08	7.10
.. of which from wage work (%)	29.36	20.01	62.12	12.16	22.41	35.32	47.70
Of which in agriculture (%)	55.68	53.26	57.94	55.18	55.09	57.37	55.27
Of which in non-agriculture (%)	44.27	46.05	42.73	44.25	44.77	42.76	44.41
.. of which from salaried work (%)	12.01	12.38	13.01	23.40	13.64	8.29	5.74
.. of which from self-employment, transfer(%)	7.47	5.36	12.04	9.43	8.38	6.40	6.10
Household level participation							
Total days worked	485.44	427.19	617.50	437.48	464.77	498.25	545.45
Days spent on wage labor	249.83	182.38	470.70	87.33	211.86	301.29	411.24
Share of days spent on wage work (%)	51.46	42.69	76.23	19.96	45.58	60.47	75.39
Female participation (%)	74.16	71.11	78.41	67.86	68.97	79.55	72.83
Implicit wage (Rs/day)	68.34	72.37	43.79	152.35	58.82	46.48	32.45
Number of observations	7476	5694	1782	1869	1868	1870	1869

Source: Own calculation from NCAER REDS Survey.

Table 2. Wage rates (Rs/day) for casual labor in agriculture and non-agriculture by gender

	Agricultural labor			Non-agricultural labor			No. of obs.
State	**Male**	**Female**	**Difference**	**Male**	**Female**	**Difference**	
Andhra Pradesh	45.36	33.94	25%***	46.34	33.64	27%***	671
Assam	48.14	49.06	-2%	49.71	47.27	5%	276
Bihar	40.05	33.42	17%***	45.82	35.28	23%***	544
Gujarat	44.46	40.32	9%***	54.98	38.57	30%***	498
Haryana	74.14	59.00	20%***	86.95	76.82	12%	137
Karnataka	43.22	31.92	26%***	51.22	35.17	31%***	415
Kerala	101.36	60.93	40%***	107.14	60.81	43%***	350
Maharashtra	43.26	28.37	34%***	50.50	33.60	33%***	474
Madhya Pradesh	32.30	27.42	15%***	40.07	31.25	22%**	887
Orissa	41.00	30.79	25%***	61.92	35.00	43%***	261
Punjab	68.53	59.13	14%***	83.44	66.67	20%	205
Rajasthan	54.50	55.51	-2%	68.75	44.58	35%***	513
Tamil Nadu	54.24	29.33	46%***	67.80	33.18	51%***	556
Uttar Pradesh	47.51	44.57	6%**	61.74	57.86	6%	483
West Bengal	41.75	32.02	23%***	50.47	37.90	25%	259
All India	46.35	33.70	27%***	62.77	42.75	32%***	6,529

Note: Statistical significance of the difference between male and female rates indicated by stars as follows: *** = significant at 1%; ** = significant at 5%. 1 US $ equals about 42 INR at the time of the survey.
Source: NCAER 1999 REDS Survey

Table 3. Gender gaps in labor market participation and literacy

	Female to male participation ratios			
	Agr. Casual	Non-agr. casual	Workers	Managers
Andhra Pradesh	63.9	57.1	21.1	8.2
Assam	27.3	6.3	27.5	3.0
Bihar	100.0	27.8	8.8	3.0
Gujarat	92.9	45.5	12.6	2.3
Haryana	25.0	20.0	7.1	1.4
Karnataka	78.6	50.0	21.9	5.3
Kerala	66.7	36.4	23.9	3.4
Maharashtra	133.3	25.0	14.3	4.6
Madhya Pradesh	96.0	50.0	12.2	4.4
Orissa	38.5	25.0	18.8	6.9
Punjab	42.9	10.0	7.0	1.6
Rajasthan	100.0	26.1	10.9	3.3
Tamil Nadu	82.1	37.5	19.3	3.6
Uttar Pradesh	42.9	11.1	7.3	2.7
West Bengal	61.9	33.3	11.8	2.2

Source: NCAER 1999 REDS Survey and Esteve-Volart (2004).

Table 4: Determinants of daily wages for casual labor in rural India (Heckman 2-stage estimation)

	Agriculture		Non-agriculture	
Age (log)	0.605***	0.594***	3.261***	3.252***
	(2.73)	(2.67)	(9.38)	(9.36)
Age squared (log)	-0.079**	-0.078**	-0.458***	-0.457***
	(2.49)	(2.43)	(9.16)	(9.14)
Male dummy	0.267***	0.260***	0.415***	0.392***
	(25.14)	(20.14)	(18.43)	(15.11)
Years of education (log)	0.035***	0.029***	0.036***	0.007
	(5.68)	(3.15)	(4.69)	(0.40)
Male * education years (log)		0.009		0.033*
		(0.91)		(1.85)
SC/ST caste dummy	-0.028**	-0.029**	-0.012	-0.014
	(2.50)	(2.51)	(0.73)	(0.84)
Backward caste dummy	-0.030**	-0.029**	-0.014	-0.015
	(2.47)	(2.46)	(0.82)	(0.87)
Selection equation (Determinants of participation in wage employment)				
Age (log)	9.635***	9.635***	10.495***	10.495***
	(21.72)	(21.72)	(20.11)	(20.11)
Age squared (log)	-1.408***	-1.408***	-1.534***	-1.534***
	(22.22)	(22.22)	(20.48)	(20.48)
Household size	-0.006*	-0.006*	0.007**	0.007**
	(1.73)	(1.73)	(2.24)	(2.24)
Male dummy	0.433***	0.433***	0.990***	0.990***
	(18.29)	(18.29)	(33.41)	(33.41)
Years of education (log)	-0.236***	-0.236***	-0.118***	-0.118***
	(18.49)	(18.49)	(8.42)	(8.42)
SC/ST caste dummy	0.283***	0.283***	0.071**	0.071**
	(10.16)	(10.16)	(2.17)	(2.17)
Backward caste dummy	0.073**	0.073**	-0.078**	-0.078**
	(2.55)	(2.55)	(2.38)	(2.38)
Landless dummy	0.429***	0.429***	0.248***	0.248***
	(12.64)	(12.64)	(6.49)	(6.49)
Financial assets (log)	-0.089***	-0.089***	-0.068***	-0.068***
	(11.96)	(11.96)	(8.47)	(8.47)
Agricultural assets (log)	-0.016***	-0.016***	-0.051***	-0.051***
	(3.67)	(3.67)	(11.07)	(11.07)
House & durable goods (log)	-0.342***	-0.342***	-0.289***	-0.289***
	(21.86)	(21.86)	(16.60)	(16.60)
Non-farm assets (log)	-0.082***	-0.082***	-0.072***	-0.072***
	(12.88)	(12.88)	(11.45)	(11.45)
Inverse Mills Ratio	-0.027*	-0.026*	0.086***	0.086***
	(1.85)	(1.85)	(4.19)	(4.19)
No. of observations	30038	30038	30032	30032

Robust z statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%
State dummies included in both stages but are not reported.
Note: Dependent variable is the log of the wage rate in the respective sector.

Table 5: Cobb-Douglas production function for crop production

	Specification		
	(1)	**(2)**	**(3)**
Total Crop Area (log)	0.412***	0.388***	0.405***
	(16.88)	(14.65)	(16.70)
Share of crop area under irrigation	0.101***	0.097***	0.103***
	(3.62)	(3.30)	(3.69)
Seed expenditure (log)	0.230***	0.238***	0.235***
	(15.94)	(15.69)	(16.40)
Manure expenditure (log)	0.036***	0.036***	0.034***
	(7.59)	(7.21)	(7.29)
Fertilizer expenditure (log)	0.145***	0.146***	0.144***
	(17.29)	(16.75)	(17.26)
Pesticide expenditure (log)	0.025***	0.025***	0.025***
	(5.74)	(5.27)	(5.61)
Other expenditure (log)	0.021***	0.021***	0.021***
	(3.70)	(3.40)	(3.67)
Total family labor (log)	0.221***	0.243***	0.229***
	(14.32)	(15.58)	(15.52)
Share of male in total family labor	-0.021		
	(0.67)		
Total hired labor (log)	0.071***	0.089***	0.072***
	(11.16)	(5.91)	(11.33)
Share of male in total hired labor		0.016	
		(0.80)	
Head's age (log)	0.061*	0.062	0.062*
	(1.70)	(1.64)	(1.72)
Education (max. years in hh)	0.001	-0.001	-0.000
	(0.29)	(0.23)	(0.18)
Dummy for household with hiring labor		-0.060	
		(0.93)	
R^2	0.74	0.74	0.74
No. of observations	4529	4380	4597

Test for equality of value marginal product (VMP) between family labor and hired labor

Value marginal product of family labor (VMP_F)	157.28
Value of marginal product of hired labor (VMP_H)	51.75
Test: $VMP_F=VMP_H$	(4.89)***

Robust z statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%
State dummies included but not reported.

Table 6: Determinants of daily wage of wage workers (Heckman 2-stage estimation)

	Specification			
	(1)	(2)	(3)	(4)
Age (log)	1.863***	1.843***	1.865***	1.848***
	(9.97)	(9.86)	(9.99)	(9.89)
Age squared (log)	-0.263***	-0.260***	-0.263***	-0.261***
	(9.83)	(9.72)	(9.84)	(9.74)
Male dummy	0.331***	0.331***	-0.087	-0.057
	(37.23)	(37.22)	(0.58)	(0.38)
Agricultural worker	-0.104***	-0.105***	-0.103***	-0.104***
	(11.82)	(11.91)	(11.69)	(11.78)
SC/ST dummy	-0.016*	-0.017*	-0.016*	-0.017*
	(1.67)	(1.79)	(1.68)	(1.78)
Other backward caste dummy	-0.029***	-0.029***	-0.028***	-0.028***
	(2.93)	(2.90)	(2.87)	(2.85)
Village average income (log)	0.048***	0.049***	0.018	0.022
	(5.46)	(5.65)	(1.33)	(1.59)
Male * village income			0.043***	0.040***
			(2.79)	(2.58)
Village level inequality (Gini)		-0.138***		-0.126**
		(2.63)		(2.39)
Selection equation (Determinants of participation in wage employment)				
Age (log)	13.158***	13.152***	13.158***	13.152***
	(32.40)	(32.39)	(32.40)	(32.39)
Age squared (log)	-1.923***	-1.922***	-1.923***	-1.922***
	(33.06)	(33.04)	(33.06)	(33.04)
Household size	0.005*	0.005*	0.005*	0.005*
	(1.85)	(1.73)	(1.85)	(1.73)
Male dummy	0.877***	0.876***	0.877***	0.876***
	(39.02)	(38.95)	(39.02)	(38.95)
Years of education (log)	-0.243***	-0.241***	-0.243***	-0.241***
	(20.89)	(20.65)	(20.89)	(20.65)
SC/ST dummy	0.273***	0.272***	0.273***	0.272***
	(10.40)	(10.35)	(10.40)	(10.35)
Other backward caste dummy	0.058**	0.060**	0.058**	0.060**
	(2.25)	(2.32)	(2.25)	(2.32)
Village average income (log)	-0.145***	-0.144***	-0.145***	-0.144***
	(6.15)	(6.09)	(6.15)	(6.09)
Village level inequality (Gini)		-0.235		-0.235
		(1.63)		(1.63)
Dummy for landless households	0.525***	0.527***	0.525***	0.527***
	(16.42)	(16.47)	(16.42)	(16.47)
Value of financial assets (log)	-0.109***	-0.109***	-0.109***	-0.109***
	(15.87)	(15.88)	(15.87)	(15.88)
Value of agricultural assets (log)	-0.046***	-0.046***	-0.046***	-0.046***
	(11.89)	(11.88)	(11.89)	(11.88)
Value of house and durable goods (log)	-0.386***	-0.385***	-0.386***	-0.385***
	(27.05)	(27.01)	(27.05)	(27.01)
Value of non-farm assets (log)	-0.101***	-0.101***	-0.101***	-0.101***
	(19.04)	(19.01)	(19.04)	(19.01)
Inverse Mills Ratio	0.049***	0.048***	0.049***	0.048***
	(5.41)	(5.32)	(5.35)	(5.27)
No. of observations	29104	29104	29104	29104

Robust z statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. State dummies included throughout but not reported.

Table 7: Determinants of daily wages for casual labor in rural India (Heckman 2-stage estimation)

Wage Equation	Men		Women	
	Single	Married	Single	Married
Age (log)	0.0118*	0.0012	0.0333*	0.0110*
	(2.5108)	(1.9446)	(2.7929)	(1.9983)
Age square (log)	-0.0001	0.0000	0.0504*	-0.0102*
	(0.2500)	(0.2000)	(3.5714)	(-2.0450)
Years of education (log)	0.0370*	0.0328*	0.0303*	0.0250*
	(5.9677)	(13.1200)	(2.5041)	(3.3333)
Jaathi 1	-0.0142*	-0.0155*	-0.0020	-0.1120*
	(-1.9820)	(-2.3410)	(-1.9180)	(-2.7710)
Jaathi 2	-0.0020*	-0.0140*	-0.1080*	-0.0010*
	(-2.1200)	(-1.9970)	(-2.1200)	(-3.0410)
Selection Equation for Labor Force Participation				
Age (log)	0.4978*	0.2745*	0.2940*	0.0544*
	(23.4811)	(18.0592)	(6.7586)	(5.3861)
Age square (log)	-0.0068*	-0.0035*	-0.0041*	-0.0007*
	(22.6667)	(17.5000)	(5.8571)	(7.0000)
Years of education (log)	-0.0591*	-0.0278*	-0.0145	-0.0089
	(8.0959)	(4.2769)	(1.1154)	(1.6481)
Members age <=5 (log)	0.0141*	0.1510*	-0.3570*	-0.0174*
	(2.9910)	(3.4540)	(-2.6606)	(-2.9560)
Members (5<age<=15) (log)	-	-0.2445*	0.0731*	-0.0526*
		(9.8589)	(3.4421)	(-3.7571)
Members age >=65 (log)	-0.1661*	0.2400*	-0.2397*	0.1157*
	(3.5952)	(4.7059)	(2.5914)	(3.9759)
Non working members (log)	-0.1364*	-0.1056*	-0.1895*	-0.0142*
	(27.3755)	(4.0772)	(3.3363)	(-1.9990)
Household size	0.1823*	0.2036*	0.2473*	-0.0761*
	(17.8725)	(13.5733)	(10.3908)	(2.8831)
Log Asset1	-0.0208*	-0.0146*	-0.0491*	-0.1702*
	(3.3548)	(2.4746)	(4.3839)	(3.4120)
Log Asset2	0.0015*	0.0280*	0.0127	-0.0404*
	(2.1200)	(2.2047)	(0.5695)	(-2.9552)
Log Asset3	0.0284*	0.0508*	-0.0025	0.0705*
	(2.8765)	(2.7394)	(0.5518)	(3.6414)
Log Asset4	-0.0037	-0.0177	-0.0048	-0.0965
	(0.1341)	(0.5980)	(0.0886)	(-0.0357)
Log Asset5	-0.0120	-0.0003	-0.0034	-0.0164*
	(1.6901)	(0.0411)	(0.2615)	(-2.5238)
Log Asset6	-0.0155*	-0.0158*	-0.0073	-0.1117*
	(-2.0395)	(-1.9588)	(0.4371)	(-2.0750)

Note: The dependent variable of the wage equation is log wage . Robust Z-statistics are in parenthesis.

* Coefficients are significant at 1%

**Assets are grouped into six categories: Asset1= land, farm equipments (mechanized & non machanized), other farm equipments (farm house, godowns warehouses et.), irrigation assets, animals; Asset2 = financial assets; Asset3 = consumer durables; Asset4 = buildings etc.; Asset5 = jewellery; Asset6 = bussiness assets.

Table 7: Determinants of daily wages for casual labor in rural India Contd..

Wage Equation	Men		Women	
	Single	Married	Single	Married
Education(husband) (log)	-	-	-	-0.0831* (-6.4652)
Age (husband) (log)	-	-	-	-0.0958* (-3.8330)
Dependent on				
Income transfer from husband (Dummy)	-	-	-	0.0967* (3.1812)
Borrowing from parents (log)	-	-	-	-0.1400* (5.8824)
Financial support Dummy (access to credit)	-	-	-	0.0991* (2.4899)
Non-financial support Dummy	-	-	-	-0.0172 (0.4526)
Control over expenditure Dummy(food items)	-	-	-	0.0905* (2.0901)
Control over expenditure Dummy(clothing & other items)	-	-	-	-0.0001 (0.0237)
Mills ratio	-0.0124 (1.5610)	-0.0444* (3.8326)	-0.1593* (-3.6574)	-0.1665* (-2.7166)
No. of observations	3933	9677	1837	9889

Note: The dependent variable of the wage equation is log wage. Robust Z-statistics are in parenthesis.

* Coefficients are significant at 1%

**Assets are grouped into six categories: Asset1= land, farm equipments (mechanized & non machanized), other farm equipments (farm house, godowns warehouses et.), irrigation assets, animals; Asset2 = financial assets; Asset3 = consumer durables; Asset4 = buildings etc.; Asset5 = jewellery; Asset6 = bussiness assets.

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