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ABSTRACT

Economic Influences on Child Migration Decisions: Evidence from Bihar and Uttar Pradesh*

Why do young children migrate without a parent? We consider the economic components of the answer to this question by examining the correlates of out-migration for children under 15 whose mother's reside in Bihar and Uttar Pradesh, India. 1 million children appear to have migrated away from home in our data. On average 3 percent of living children 5-14 in our communities are away from home, but the fraction of out-migrant children ranges between 0 and 29 percent. We find that the data are consistent with a classical view of migration: children on average appear to migrate out of competitive, rural child labor markets for net financial gain. The costs of migration are important. Children are less likely to migrate from more remote locations. Children are less likely to migrate from locations where child wages are higher. Overall, patterns of child migration away from their mothers look similar to what other researchers have observed in adult populations in different social and economic contexts.

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1 Introduction

Children who migrate without their parents are an extremely vulnerable population. Some migrate for schooling, others for work. Many are trafficked, and newspapers are filled with horrific tales of their abuse. It is commonly believed that parents are more likely to have the best interest of their own children at heart and that parental co-residency mitigates the likelihood of abuse relative to a child living with a different adult or a child living autonomously. Systematic statistical investigation of the correlates of children living away from home is rare outside of studies of child fostering in Africa (see Akresh 2004) or the effects of parental death (for example, Case, Paxson, and Ableidinger 2004). Little is known about what factors cause children to migrate without a parent, because most studies of child migrants study children at their destination point and most migrant children migrate with their parents (McKenzie 2007). Retrospective accounts from child migrants concerning why they migrated are largely uninformative, because there is no comparison population that did not migrate. The purpose of the present study is to begin to fill this knowledge void by considering the determinants of child migration away in an empirical setting.

In the next section of this study, we consider four different frameworks that might explain why families send a child away from home.[1] The financial motives model is based on Sjaastad (1962), and predicts that child migration will decline with family incomes. The altruism model assumes that migration is on balance costly to the household and corresponds to the case where children are sent away for schooling or future opportunities that won't be transferred to the child's sending family. Within each basic set-up, we compare a model assuming complete rural labor markets for child labor to a model assuming no rural labor markets for child labor. Many

[1] We do not consider child agency in the migration decisions although it is straightforward to recast our theory discussion with the child as the primary decision making agent over his own migration decision.

have argued that the absence of rural labor markets is important in understanding child labor supply (for example, Basu, Das, and Dutta 2007) although the appropriate way to model rural labor markets in developing countries is controversial (for example, Benjamin 1992). We find that different assumptions on the nature of the rural child labor market lead to distinct predictions about the observable correlates of child migration away from home.

We study the correlates of children living away from their mothers in household survey data from the Indian states of Bihar and Uttar Pradesh in order to discern which model of child migration is most consistent with the data.[2] Our data, described in detail in section 3, suggest that there are roughly 1 million living children under 15 from Bihar and Uttar Pradesh who are living away from their mothers on at least a semi-permanent basis.[3] These children come from relatively less remote locations and from communities where child wages are lower. These children come from relatively poor households, but there appears to be considerable flattening in the data: wealth is an important influence on migration only in less remote communities. We observe that there is little clear association between the presence of working capital in the household and child out-migration.

The Bihar / Uttar Pradesh data seem most consistent with a child migration model where rural labor markets are complete and migration is financially motivated. The fact that migration probabilities decline with wealth is a property of the financial motives model. The declining significance of wealth with remoteness ("flattening"), the importance of rural child wages, and the lack of importance of household farm ownership are all implications of the complete rural child labor markets hypothesis (rather than the no rural labor markets hypothesis) when there are

[2] Our emphasis on mothers is not driven by some assumption of the importance of the child's relationship to his mother– we cannot identify fathers of out migrant children in our data.
[3] Temporary migrants are excluded from our analysis. We cannot identify whether the children in our analysis are likely to return.

financial motives for migration. These findings are described in greater detail in section 4. Overall, the data from Bihar and Uttar Pradesh paint a description of the rural to urban child migration without parents that is remarkably similar to what has been used to explain the migration of older populations in very different political and historical contexts.

2 Theory

2.1 Financial motives for migrations with perfect urban and rural labor markets

We consider the determinants of sending children away in an analytical setting where there is one large urban market and a large number of small rural communities that can send labor to the urban market.[4] We begin by treating all rural labor markets as if they are identical and do not consider rural to rural seasonal migrations. Each individual labor market is not large enough to influence the price of labor in the city, so we take all urban prices as exogenous to the decisions of rural families.

Consider the situation where a family consists of one adult and one child. The adult's labor supply is inelastic and brings income Y which also includes a non-labor income component. We consider only one time period. The adult is the primary agent who chooses whether the child stays or leaves home.[5] That decision is irreversible, and all costs and returns related to the migration decision are appropriately discounted to their present value.

[4] In our data below, we do not know anything about the child's destination. It may be urban or rural, but because we cannot say, we cannot learn anything about the causes of migration from the destination side. Hence, it makes sense in our theory discussion to abstract from this problem entirely by considering just one exogenous (urban) labor market.

[5] Some migrant children have considerable agency in their own migration decisions (Iversen 2002). The present data does not have any way to identify agency, and there is no analytical advantage to adding this extra complication in our present discussion. For example, one could simply re-label the child as the agent, and the present discussion would go forward so long as the child cares about the consumption of members left behind.

The exogenous return to sending the child away depends on the financial return to sending the child away w_u as well as utility weight a parent puts on sending the child away, c.[6] The financial return to sending the child away depends on advance payments against future child earnings, the expected present value of future wage remittances of the child,[7] and the additional consumption available to the household by not needing to care for the child. Collectively, we refer to these as the "urban wage" as perceived by the agent. Some of the urban wage may be how families realize returns to past educational investments as in Kochar (2004). The urban wage is understood to be net of transport costs associated with moving from the rural area to an urban area. The utility weight depends on how the parent values the child's presence, the risks inherent in leaving home, and the changes in schooling and work related opportunities associated with the child leaving home for the city. We assume that if there was no financial gain from sending children away, parents would prefer their children to stay. On net, the utility weight associated with sending a child away is negative.

The agent cares about the present value of consumption x and whether the child is co-resident, m. Let $u(x,m)$ be the utility representation of his preferences. We assume that all rural households perceive a similar utility or disutility from having a child away. Specifically, utility from consumption is additively separable from the utility associated with sending the child away. Let preferences be characterized by the following utility representation:

$$u(x,m) = h(x) - cm \qquad \text{(eq. 1)}$$

We assume diminishing positive marginal utility of consumption, $h' > 0, h'' < 0$. If the child is away, $m=1$. We assume that when the child does not migrate, the agent allocates the child's time

[6] We abstract entirely from the problem of finding urban employment that Todaro (1969) emphasizes.
[7] Remittances from out-migrants are probably the most studied aspect of migration. Several studies document remittance flows to help families cope with economic shocks (Yang and Choi 2005, McKenzie 2003 for example)

optimally, and the present value of the child's present and future net economic contribution to the family without migration is the "rural wage", w_r. Consumption depends on adult income Y, the migrant child's urban wage w_u, and the non-migrant child's rural wage,:

$$x = Y + w_u m + w_r (1-m) \qquad \text{(eq. 2)}$$

A child migrates when the agent is made strictly better off by the child's departure:

$$u(x,1) + e_1 > u(x,0) + e_0$$

$\{e_1, e_0\}$ are mean zero, independent random errors associated with the agent's assessment of the child's welfare staying home (0) or away (1). Define $e = e_0 - e_1$ with c.d.f. *F(e)* and strictly positive density *f(u)*. The probability a child migrates is then:

$$\Pr(m=1) = \Pr\left(h(Y+w_u) - c + e_1 > h(Y+w_r) + e_0\right)$$

or

$$\Pr(m=1) = F\left(h(Y+w_u) - c - h(Y+w_r)\right) \qquad \text{(eq. 3)}$$

Totally differentiating, we have the determinants of child migration:

$$d\Pr(m=1) = f(e)\left(\left(\frac{\partial h_u}{\partial x} - \frac{\partial h_r}{\partial x}\right)dY + \frac{\partial h_u}{\partial x}dw_u - \frac{\partial h_r}{\partial x}dw_r - dc\right) \qquad \text{(eq. 4)}$$

where $\partial h_l / \partial x \equiv \partial h(Y + w_l)/\partial x$ for $l \in \{r,u\}$.

Two important points come out of this set-up. First, poor families will be more likely to send children away even where they care as much about living with their children as do wealthier families (in the sense that they have the same c). This follows directly from the assumption that the financial return to sending the child away is greater than that associated with staying (otherwise no one migrates), $w_u > w_r$ and the diminishing marginal utility of income. This point also draws attention to the implicit assumption that migration is not liquidity constrained.

McKenzie and Rapoport (2007) look at Mexico – US migration and argue that liquidity constraints keep the poorest from migrating while the wealthiest have little incentive to migrate.

Second, the effect of a change in the net financial return to sending a child away depends on both the change in the net return and the marginal utility of income. Define the difference in wages as the net financial return from sending the child away: $wg = w_u - w_r$. Rearranging (4), we have:

$$d\Pr(m=1) = f(e)\left(\left(\frac{\partial h_u}{\partial x} - \frac{\partial h_r}{\partial x}\right)(dY + dw_r) + \frac{\partial h_u}{\partial x}(dw_u - dw_r) - dc\right). \qquad \text{(eq. 5)}$$

Suppose rural wages remain fixed as do adult incomes and utility weights. Then, an increase in the net financial return to sending the child away raises the probability a child migrates, but less so in richer households because of their lower marginal utility of income.

2.1.1 Heterogeneous rural communities

Villages differ in their location and their agricultural and labor endowments. We begin by considering communities that vary in their location. Variation in location causes the net financial return of sending the child away to differ because of differences in the travel costs of moving to the city and the costs of moving transfers from the city back to the rural community. We model these "transport costs" for rural community *j* as a type of iceberg cost, τ_j. Urban wages do not vary with where the child is from.[8] Hence, the perceived net financial return to sending the child to the city from community j is the urban wage less the transport cost: $w_u - t_j \equiv w_{uj}$. One component of these transport costs might owe to information about employment opportunities, how to find a place to live, etc (Dolfin and Genicot 2006). Hence,

[8] This assumption may be wrong if children from different rural communities track into different tasks in the city based on their indigenous skill set. However, this complication does not substantively alter our discussion so long as the rural community does not impact urban wages.

the existence of migration networks from a community might have an important influence on transportation costs beyond physical isolation as Munshi (2003) and McKenzie and Rapoport (2007) emphasize.

Child migration decisions are less adult income elastic in communities with higher transport costs. Suppose wages and utility weights are fixed and that wages do not vary across rural communities. Then, the effect of changes in adult income on child migration can be written as:

$$d\Pr\left(m_j=1\right)=f\left(e\right)\left(\left(\frac{\partial h\left(Y+w_u-t_j\right)}{\partial x}-\frac{\partial h\left(Y+w_r\right)}{\partial x}\right)dY\right) \qquad \text{(eq. 6)}$$

We restrict our attention to the case when the net financial return is still positive: $w_u - t_j > w_r$. Larger transport costs make the net financial return of sending the child away smaller. Hence, the utility gained by sending the child away will be smaller, and therefore the difference in the marginal utility of income when the child is at home versus away is smaller. Everything else equal, migration decisions will be less income elastic in rural communities that are more remote.

Rural communities differ in their land and capital endowments as well. Differing endowments cause wages to vary by rural location. Denote w_{rj} as the net financial return to the adult of keeping the child in rural community *j*. Rewriting equation (5):

$$d\Pr\left(m_j=1\right)=f\left(e\right)\left(\left(\frac{\partial h_{uj}}{\partial x}-\frac{\partial h_{rj}}{\partial x}\right)\left(dY+dw_{rj}\right)+\frac{\partial h_{uj}}{\partial x}\left(dw_u-dt_j-dw_{rj}\right)-dc\right) \qquad \text{(eq. 7)}$$

where $\partial h_{rj}/\partial x \equiv \partial h\left(Y+w_{rj}\right)/\partial x$ and $\partial h_{uj}/\partial x \equiv \partial h\left(Y+w_u-t_j\right)/\partial x$. Communities with higher rural wages will have fewer migrant children for two reasons. Higher rural wages lower the net financial gain from migration and work like any other increase in adult income in reducing migration incentives (a price and an income effect). Also, for a given rural wage, migration will

be less adult income elastic in communities with a higher rural wage, because the difference in household expenditure and thus the marginal utility of income between the migrant and non-migrant states will be smaller.

2.1.2 No rural child labor market

In the above presentation, there is a local rural labor market where a child can freely work. How do our analytics change in the case when there is no rural labor market outside of the child's own household? Denote k_i as household *i*'s endowment of productive capital. This obviously influences adult incomes: $Y\left(k_i\right) \equiv Y_i$. When the resident child's financial contribution to the household depends only on work done in the child's own household, his rural wage is the extra family income available when the child stays at home rather than migrates and it depends on the family's endowment: $w_r\left(k_i\right) \equiv w_{ri}$.[9] We assume that greater capital stock raises both the shadow value of child time at home and adult income, both at a diminishing rate:

$\partial w_i / \partial k_i > 0, \partial^2 w_i / \partial^2 k_i < 0$, $\partial Y_i / \partial k_i > 0, \partial^2 Y_i / \partial^2 k_i < 0$.

Adding this extra complication to the heterogeneous communities set-up, we have:

$$d\Pr\left(m_{ij}=1\right) = f\left(e\right)\left(\left(\left(\frac{\partial h_{ui}}{\partial x}-\frac{\partial h_{ri}}{\partial x}\right)\frac{\partial Y_i}{\partial k}-\frac{\partial h_{ri}}{\partial x}\frac{\partial w_{ri}}{\partial k}\right)dk_i+\frac{\partial h_{ui}}{\partial x}\left(dw_u-dt_j\right)-dc\right) \qquad \text{(eq. 8)}$$

where $\partial h_{ri}/\partial x \equiv \partial h\left(Y_i + w_{ri}\right)/\partial x$ and $\partial h_{ui}/\partial x \equiv \partial h\left(Y_i + w_u - t_j\right)/\partial x$. Families with more working (productive) capital are less apt to send children away because of the effect of that capital on family incomes and on the non-migrant child's potential economic contribution. The smaller the effect of working capital on the child's economic contribution, the more important is family

[9] As written, this is not the child's shadow wage per se. This shadow wage is the value of the child's marginal product in the family enterprise at the optimum allocation of all inputs. No additional analytical advantage is gained by fully specifying the household's problem.

income. This point also appears in the child labor literature: the effect of working capital on child labor depends on how that capital interacts with the child's productivity (e.g. Mueller 1984).

How does this no labor market setup differ from the complete, heterogeneous labor markets model of section 2.1.1? First, in the competitive labor markets model, household ownership of working capital affects migration decisions solely through capital's impact on family incomes. In the no-markets model, working capital also determines the child's rural wage. Second, in the competitive labor markets case, within community differences in living standards become less important in more remote communities, because transport costs lower the importance of the marginal utility of income as a motive for migration (we call this property of competitive labor markets a "flattening" property). The attenuated importance of living standards persists in the no labor markets case, but within community heterogeneity in migration decisions also persist because of differences in the child's rural wage that owe to differences in the presence of working capital within the family.

2.2 Altruistic motives for migration

In this second, we present an alternative, simple characterization of preferences where parents want children to migrate for better opportunities, but migration is costly. The model above corresponds to the case where children are migrating for work or some other financial gain. The present model more closely corresponds to the case where children migrate for schooling or future economic opportunities for which the parent must pay and does not expect compensation. We begin with the competitive rural labor markets case.

We modify preferences in equation (1) to allow parents to prefer children to migrate:

$$u(x,m) = h(x) + cm \qquad \text{(eq. 9)}$$

Again, we treat the utility an agent receives from having the child pursue opportunities elsewhere as independent of the family's standard of living. Migration is costly by transport costs t_j and does not yield a positive expected benefit to the child's rural family. Hence, the standard of living becomes:

$$x = Y - t_j m + w_r (1 - m). \qquad \text{(eq. 10)}$$

The determinants of migration can then be viewed as:

$$d\Pr(m_j = 1) = f(e)\left(\left(\frac{\partial h_{uj}^a}{\partial x} - \frac{\partial h_{rj}}{\partial x}\right)(dY - dt_j) - \frac{\partial h_r}{\partial x}(dw_{rj} + dt_j) + dc\right) \qquad \text{(eq. 11)}$$

with $\partial h_{uj}^a / \partial x \equiv \partial h(Y - t_j) / \partial x$. The cost of migrating to the city is $(w_{rj} + t_j)$. Thus, $(dw_{rj} + dt_j)$ describes variation in the cost of migrating, and the migration decision's responsiveness to changes in the cost of migration depends on the marginal utility of income.

Contrasting equation (11) with equation (7) highlights several ways in which different motives for migration will be discernable in the data. The most important difference comes from the fact that in equation (11), family incomes are higher when the child is in the rural household. Hence, the sign of $\left(\frac{\partial h_u}{\partial x} - \frac{\partial h_{rj}}{\partial x}\right)$ is positive in equation (11) whereas it is negative in equation (7). This has two important implications. First, within a community, children from wealthier families are more likely to migrate. Second, the more remote the community, the more responsive child migration decisions are to family income, because the difference between marginal utilities of income increases.

The no labor market variant of this model appears similar to equation (8):

$$d\Pr(m_{ij} = 1) = f(e)\left(\left(\left(\frac{\partial h_{ui}^a}{\partial x} - \frac{\partial h_{ri}}{\partial x}\right)\frac{\partial Y_i}{\partial k} - \frac{\partial h_{ri}}{\partial x}\frac{\partial w_{ri}}{\partial k}\right)dk_i - \frac{\partial h_{ui}^a}{\partial x}dt_j + dc\right) \qquad \text{(eq. 12)}$$

with $\partial h_{ui}^{a} / \partial x \equiv \partial h\left(Y_i - t_j\right) / \partial x$. More working capital in the family increases the likelihood the child migrates by increasing family income and decreases the likelihood of migration through raising the child's economic contribution to the family at home. Hence, the sign of the income effect in the altruistic model with no rural labor markets is the opposite of what was observed in the financial motives model, but the attenuating affect of working capital on migration through raising the value of child's time at home is the same. As with the financial motives model, remoteness decreases migration probabilities (everything else equal), but migration is more responsive to remoteness in the altruism model, because the marginal utility of income is higher ($\partial h_{ui}^{a} / \partial x > \partial h_{ui} / \partial x$ when $w_u > 0$).

The difference between the perfectly competitive and no-labor markets model in the case of the altruism model is that working capital attenuates the heterogeneity in who migrates with income, because it raises the value of the child's time. That is, the extent to which working capital influences migration decisions depends on two factors in equation 12. First, it depends on how working capital influences family income. The weight the family puts on this additional income depends on the marginal utility of income when the child is at home and when the child is away. This income effect of working capital occurs in both the labor markets case and the no labor markets case. Second, working capital increases the child's economic contribution, and the agent values this contribution based on the marginal utility of income when the child stays home (which does not depend on remoteness). This effect on the child's economic contribution is unique to the no labor market case. Taken together, the income effect of working capital increases migration, but conditional on living standards, working capital attenuates migration decisions. This later attenuation does not depend on remoteness while the income effect depends on remoteness as remoteness affects the difference in marginal utilities between when the child is

home or away. The more remote the household, the more important the income effect of working capital, because the difference in marginal utilities will be greater. Hence the attenuating effects of working capital on migration probabilities that work through the child's rural economic contribution become less significant as families become more remote. The importance of the presence of working capital in the family is declining with remoteness in the no-labor market model relative to the perfectly competitive model with altruistic motives for migration.

In summary, these different motives and models of child migration decisions vary in the predicted responsiveness of child migration to remoteness, living standards, and working capital in the family. The predictions of each model are summarized in table 1. The financial motives model predicts declining migration with family income and flattening (declining income inequality in the migration decision) with remoteness. The no rural child labor market variant of the financial motives model does not have this flattening property and predicts the presence of working capital in the household to attenuate migration probabilities. The altruistic motives model predicts increasing migration with family income and increasing divergence (increasing income inequality in the migration decision) with remoteness. In the no rural child labor market variant of the altruistic motives model, the presence of working capital attenuates migration probabilities. In the next sections, we attempt to distinguish between these distinct views of the child migration decision using data from Bihar and Uttar Pradesh.

3. Data

This study looks at the determinants of child migration using the Uttar Pradesh and Bihar Survey of Living Conditions (the UPB Survey, World Bank 1998). The survey was collected between December 1997 and March 1998 as a part of a rural poverty study carried out in south and

eastern Uttar Pradesh and north and central Bihar. In our analysis, we rely on household and village level survey data collected from 2,250 households resident in 120 villages spread over 25 districts in the two states.

The UPB region is a natural focus for a study of child migration patterns. The region is an important source of internally trafficked children in India. For example, Table 2 tabulates state of origin for children engaged in worst forms of child labor in Mumbai as documented by the case contact records of a large Indian NGO involved with child laborers in Mumbai. Of the five thousand children contacted between 2001 and 2003 who did not live with any parent, 77 percent of the children were from Uttar Pradesh and Bihar. 54 percent of these children were under 12, and the state of origin break downs do not differ substantively by age. The data tabulated in table 2 is not representative of any known sampling frame and may be an inaccurate characterization of child migrants into Mumbai, but it is consistent with contemporaneous reports from Mumbai's remand homes where 65 percent of children were from Uttar Pradesh, Madhya Pradesh, and Bihar (Times of India, 2004).

The UPB survey is also a useful instrument for the study of child migration decisions. First, it contains a detailed fertility instrument that we use to identify all surviving births to ever married women 15-49 in the household. Using a fertility instrument to identify children of ever married women is more useful than collecting data through a migration survey, because respondents are less apt to be focused on the sensitive issues of child migration and trafficking. Second, unlike other surveys with similarly detailed fertility histories such as the Demographic and Health Surveys, the UPB survey is also a multi-purpose household survey with extensive detail on the woman's household and her surrounding environment.

3.1 Out-migrants

We identify out-migrant children by contrasting living births to ever-married women in the household against the separately collected list of children in the household from the roster. That is, a migrant child is defined as a child who is currently alive but no longer resides with his mother. The fertility module itself does not ask about migration, and the rest of the household survey only collects information on temporarily migrant household members. We are concerned that children who have left the household will not be documented in the temporary migrants' information, and the ambiguity of the question is such that respondents are likely only to answer about individuals who are in the household at present but have been away recently. In both the fertility module and roster, we can identify the child's full name, his mother, his age, and gender. Hence, matching children from the fertility module to the roster is straightforward.

Our approach of identifying migrants by contrasting fertility history information with children on the roster will miss all children whose mothers have left or died or whose mothers are unwed. We see no alternative to accepting this sample selection bias in presently available Indian data. It is important to remember that our data is then only representative of children whose mothers have been married, are age 15-45, and are living in the UPB region.

A total of 8,230 births to ever married women 15-45 are recorded in the survey. [10] Figure 1 plots the probability that a living child, born to sampled mothers between 1973 and 1993, co-resides with his mother. From age 18 on, more than 20 percent of children are no longer resident with their mothers. In this study, we focus on children between the ages of 5 and 14 inclusive. Under Indian child labor laws, most types of work are prohibited to children under 15. We infer from these laws that this is a culturally appropriate definition of a child. A total of 4,294 births are recorded in the survey in this age range and 3,661 are alive at the time of the

[10] The household number is below the number of interviewed households in the UPB survey. 315 sampled households had no eligible women resident. For undocumented reasons, 169 households did not complete maternity questionnaires of eligible women. These households are excluded from our analysis.

survey. Out of this group of living children ages 5 to 14, a total of 117 children, or 3 percent, are no longer living with their mother.

Table 3 provides basic summary statistics for the children that are the focus of our study. Column 1 describes the full sample of all births, column 2 refers to living births, and columns 3 and 4 bifurcates living children by whether they live in their mother's household. The size of the population surveyed is striking. The state of Bihar has a population of roughly than 83 million people in the 2001 census, and its population grew by nearly 30 percent between 1991 and 2001. Uttar Pradesh has a population of 166 million in the 2001 census, and its population grew by 26 percent between 1991 and 2001. The data used in this study are representative of 34.4 million births. The skewed sex-ratios in births and living child population (1.17 males per female) in the data are above the sex-ratios observed in the under 6 population (1.08 males per female) and that of the adult population (1.11) in this region in the 2001 census. Throughout our discussion of the data, we assume that the probability a child age 5-14 is reported by his mother as deceased is independent of child migration decisions, wealth, remoteness, or the presence of a home enterprise.

The data suggest that 1 million children from the UPB region live separately from their mothers. This estimate is fairly conservative, because it does not count children that are temporarily away from home (they should be listed in the household roster) nor does it capture children that live away from their mother because of her death or residence outside the region. Children that live away are a year older on average than children who live with their mother and tend to be relatively lower birth order (old among siblings). Migrants are also more likely to be male than female. There are 1.6 migrant male children for every migrant female child under 15. Thus, marriage motives for the migration of girls as in Rosenzweig and Stark (1989) are

unlikely to dominate our discussion of a much younger population. Relative to the population living with their mothers, migrant children are more likely to come from a backward agricultural caste and less likely to be from a scheduled caste or tribe. The remainder of this paper examines the correlates of the child living away from home. The theory above suggests the way child migration is correlated with wealth, remoteness, and the presence of working capital in the household is important for distinguishing between theories of child migration. The measurement of working capital is limited to whether or not the household operates a farm or business. In the next subsections, we explain how we measure wealth and remoteness in the UPB data.

3.2 Wealth and living standards

Per capita expenditures are the standard measure of living standards used in the literature. In the present case, it is clear from the budget constraint (equation 2) that total expenditures depend on the child migration decision, and of course migration also impacts the number of family members. Hence, it is not clear what meaningful interpretation could be applied to the association between child migration and per capita expenditures.

Table 4 summarizes other correlates of the family's living standards (aside from caste, described in table 3). Column 1 provides summary statistics for the full sample of living children. Columns 2 and 3 contain summary statistics for the resident and non-resident sample respectively. Caste and education are two strong correlates of living standards in India, and the data for both are ambiguous in their association with absent children. With regards to education, more educated individuals are more likely to have out migrant children (absent children come from households with a higher incidence of literate women, women who have completed primary school, and males who have completed primary school). The caste picture is more ambiguous and hints at a possible confounding issue in the descriptive statistics. Children from backwards

castes (agricultural or Muslim) are more apt to be migrants, but children for the disadvantaged schedule castes and tribes are less likely to migrate (table 3). Typically, scheduled castes and tribes live in a more remote location. It's likely the confounding effects of remoteness and living standards make the interpretation of basic descriptive statistics a challenge.

With that caveat in mind, the descriptive statistics paint a picture that absent children seem to be coming from relatively well off households. Households with absent children are less likely to own agricultural land, but the land of households with absent children is more valuable. They are more likely to have a Pucca house. A pucca house is a permanent structure with walls made out of burnt bricks, stones packed with line or cement, cement concrete, timber, ekra, etc. Households with absent children are less likely to have mud floors, and have more rooms. In addition to more education, households with absent children report greater cash income from adults and come from villages with higher child wages.[11] The adult economic activity rate in the village is the fraction of the adult population who are economically active. Not all economically active adults are paid wages, and an indicator for whether any cash wage income is reported in the village in the survey is included in table 4. The standard deviation of days worked in the village is computed based on adults only.

The listing of many of the attributes in table 3 as correlates of living standards may come as a surprise given the endogeneity argument discussed about per capita expenditures. Cash income of adults is exogenous to the child migration decision by assumption in our theoretical work, but we are uncomfortable imposing this assumption in our empirical work. One approach employed below will be to use factor analysis to create a wealth index based on household characteristics or based on land characteristics. The later is not ideal as land ownership in the

[11] In villages without child wages, they are imputed based on the wages of uneducated adult women and village socio-economic characteristics when feasible. When wages of uneducated adult women are not available, child wages are imputed in a similar way based on uneducated adult wages and village characteristics.

family will affect the shadow value of child time when markets are incomplete (see section 2.1.2). Our primary wealth measure will be based on housing attributes. The implicit assumption is that the family does not alter its housing stock or where it lives in reaction to child migration. In our discussion, we discuss the wealth-migration link under this assumption, assuming that labor income is exogenous, assuming housing wealth affects migration only through its impact on family incomes, or assuming that household landholdings are exogenous to child migration decisions. We can relax each of these assumptions, but we cannot relax all of them in our discussion below. In constructing the housing wealth factor, the data suggest a second factor is appropriate that describes the child's caste's position within the village relative to other castes (see appendix one). This caste's position factor reflects whether the family's caste is the main caste in the village, its share of total population, its total land holdings, and the mean landholdings of caste members within the village.

The bottom three rows of table 4 describe the three wealth related factors used in our analysis. Further details of the construction of these factors are in the appendix. Factors are mean zero with a standard deviation of one. The means in table 4 are non-zero, because the factors are computed at the household level without considering the distribution of the population of births that is the focus of table 4. Absentee children are from households with more agricultural wealth and housing wealth. They come from castes that have a relatively weaker position within their village. We shall see below that while the association between caste status and migration does not disappear, the link between wealth and migration (insignificant in the raw data) reverses when we control for caste (scheduled tribes and castes are poor and least likely to migrate) and wealthier households are substantively less likely to have migrant children

when we control for observable household characteristics, especially village economic characteristics such as the child's wage.

3.3 Remoteness

We measure remoteness at the village level. In the theoretical section, remoteness is defined as the cost of moving the child or the child's remittances from the urban center to the rural area. There are several ways to measure this in the data, and they are listed in table 5. Some measures of remoteness are obvious (road characteristics, access to a bus, a bank, a school, etc). Several other characteristics listed in table 5 may be surprising. The number of households in the village reflects the size of the local market and larger villages tend to be more accessible. Manufacturing generally requires trade in both outputs and inputs, and therefore its prevalence tells us something about how economically remote a community is. Children tend to migrate from villages that appear less remote. Migrants come from villages that are closer to bus stops, banks, primary schools, and middle schools. They are from villages that are more likely to have a road.

To measure remoteness, we consider travel time to a bus, a bank, and a composite measure of remoteness constructed by extracting a common factor out of the measures of remoteness listed in table 5. The data suggest that the remoteness proxies in table 5 are best fit by 1 factor. This factor is summarized in the bottom row of table 5. It is constructed to be mean zero, standard deviation 1 at the village level. Because table 2 is weighted by living children, the full sample mean is not zero. Migrant children appear to come from substantially less remote communities. Anecdotally, this is surprising as one often reads that migrants come from remote locations, but it is important to recall that all the study area is remote from the perspective of Mumbai. Moreover, the remoteness summary statistics are also consistent with the caste of

migrants observed in table 3. Migrants are less likely to be from scheduled castes or tribes. Similar patterns of migrants coming from relatively less remote areas have been observed in studies of the migration patterns of American blacks in the early twentieth century (Fligstein 1981).

4 Main Findings

The empirical work in this study is not causal. Hence, our goal in turning to observational data is to see what theory of child migration decisions seems most consistent with the data. Different models of the child migration decisions lead to differences in how migration responds to living standards, remoteness, and family enterprises after controlling for differences between villages in the economic opportunities available to non-migrant children These opportunities will vary with child caste, age, and position in the family.[12] Hence, in all regression work we control for the child's age with year of birth fixed effects, number of sibling with sibling fixed effects, caste with caste fixed effects, birth order, gender, and village economic opportunities proxied by the child's daily wage, the village adult economic activity rate, whether any economically active adults work for wages (the alternative is self-employment), and the standard deviation of days worked per month by adults in the village over the year.[13] The most important of the village economic characteristics in the data is the child's daily wage in the village. It stands out in the empirical work below as a consistent, statistically robust influence on whether children migrate. Children are less apt to migrate from communities with higher wages. Gender also appears to play a role as girls are consistently less likely to migrate. Another

[12] Child education may be an important influence on migration decisions, but we do not control for it because of concerns about migration's feedback into educational decisions as emphasized in Kochar (2004) and de Brauw and Giles (2006).

[13] These four village economic characteristics are only weakly correlated with one another, so the application of factor analysis was not suggested by the data (all eigenvalues of all factors below 1). The standard deviation of days worked is derived from a retrospective question that collects information on days worked by month for each of the last 12 months.

important control throughout is the child's mother's marital status. Children are less likely to be missing from households where the mother is married. Throughout, standard errors are clustered at the village level.

4.1 Migration and wealth

In the raw data, absent children appear to come from wealthier families. However, scheduled caste and tribe children are poorer and less likely to migrate. Controlling for caste leads to a negative (if tiny) association between wealth and child migration, and the reductions in migration probabilities associated with higher wealth become substantive in magnitude if one controls for caste and child wages. Table 6 explores the link between absent children and different measures of wealth in greater detail with the full set of child, mother, and village economic characteristic controls.

Families with greater housing wealth are less likely to have children away. This is evident in column 1 where a standard deviation increase in household wealth is associated with a 16 percent decline in the probability a child lives away from his mother. In column 2, we include a control for the child's caste's position within the village (see appendix 1 for factor definitions). Conditional on the child's caste, if that caste is relatively unrepresented in the village, the child will be more likely to migrate. The interpretation of the caste position measure is complicated. The caste's position may reflect something about the employment opportunities open to the child, or it may be another aspect of family wealth. We think this later interpretation is most consistent with the data. If caste position were related to the child's employment opportunities, its inclusion in the regression should substantively alter the relationship between

child wage variation and migration. However, we see no such effect. Thus, we interpret the child's caste's position within the village as another aspect of household living standards.[14]

Agricultural wealth appears to have little relationship to child migration (column 3 of table 6) once we condition on wealth and caste position. As described in the appendix, the agricultural wealth factor is constructed separately from the household wealth factor. It is not necessarily independent of housing wealth or caste position. However, the interpretation of the agricultural wealth variable is a challenge if labor and land markets are imperfect or if land markets are perfect and households can adjust their landholding to the presence of children or other sources of labor.

Children are more likely to migrate from families with more adult cash income. This association appears inconsistent with the wealth results above. However, the prevalence of cash income in the household may reflect a lack of agricultural wealth or employment opportunities within the household. We have seen in the theory discussion how these factors may increase the probability a child migrates. An alternative possibility is that those with cash income are less apt to be liquidity constrained and that liquidity constraints play a role in the household's ability to pay for costly migrations (McKenzie and Rapoport 2007). Overall, the interpretation of the positive coefficient on adult cash income is complicated. In theory, variation in income that is associated with housing wealth should not have this endogeneity problem attributable to household earnings opportunities. Hence, we instrument for adult cash income with our housing wealth factor. The first stage is in column 5 of table 6, and the second stage is in column 6. Housing wealth is positively associated with adult cash income, and the resulting variation in

[14] By construction, the caste position measure should have little effect on our wealth index's association with migration. The association that exists must owe some correlation between wealth, caste position, and the number of children born to the mother, because wealth and caste position are derived from the same, household level, factor analysis.

adult cash income is negatively associated with the probability that a child migrates. Hence, the two stage least squares results in column 6 of table 6 are consistent with the idea that children are less likely to migrate from wealthier households. Thus, the relationship between child migration and wealth is more consistent with the financial motives for migration model of section 2.1.

4.2 Flattening

While measuring remoteness is complicated, the data are consistent. Children are less likely to be absent in more remote communities. Moreover, the interaction of remoteness measures with wealth are consistently positive, suggesting that differences in the effect of living standards on the migration decision attenuates with remoteness. Hence, the data exhibit the flattening property of the financial motives model with competitive rural labor markets.

Column 1 of table 7 measures remoteness with the time it takes to get from the village center to a bus stop. Travel times to a bus stop vary in the data between 0 and 2 hours. Thus, the column 1 estimates imply that moving from a community with a bus stop to the most distant community reduces migration probabilities by 1 percentage point (3 percent of children in the sample migrate). The standard deviation of time to a bus stop is 0.6. Thus, a standard deviation move in time to a bus stop reduces migration probabilities by about 10 percent. Estimates for time to a bank in column 3 are of a similar magnitude.

Flattening is the idea that the responsiveness of migration to wealth is reduced in more remote communities. This occurs, because the utility gained from migrating is smaller in more remote communities conditional on the economic opportunities and child wages in those communities (we typically think that economic opportunities are worse in more remote locations). Flattening is a property of the competitive labor market model but not the missing labor market model. The presence of working capital increases the child's economic contribution

absent labor markets. The weight the family puts on the child's economic contribution does not vary with remoteness.

We see flattening in both columns 2 and 4 of table 7, because the coefficient on wealth is negative and the coefficient on the interaction of wealth and each remoteness measure is positive. The estimates from column 2 suggest that adding an hour of travel time to a bus stop completely eliminates the association between wealth and migration. Moving from having a bank to living an hour and a half from a bank eliminates the association between wealth and migration.

Columns 5 and 6 contain our preferred measure of remoteness, derived from factor analysis of the remoteness proxies in table 5 and including time to a bus stop and a bank. Estimates from column 5 imply that a standard deviation increase in remoteness reduce the probability a child migrates by 16 percent. Moving from the minimum to the maximum observed remoteness decreases the probability of migrating by one percentage point.

Column 6 includes the interaction of the remoteness factor and wealth. We continue to observe flattening. Half a standard deviation increase in remoteness eliminates the effect of wealth on migration, and the estimates from column 6 imply that in the most remote communities, the effect of wealth on migration is actually positive. This hints at the likely reality that both financial and altruistic motives for migration exist in the data. Our results are best interpreted as suggesting that the financial motives model with competitive labor markets more closely resembles the data on average, but one should not assert that the model characterizes all migration decisions.

4.3 Working capital and migration

We have argued above that flattening is more likely in the financial motives model with perfectly competitive labor markets, because in the no labor markets model, the child's economic contribution at home will be affected by working capital and working capital will be correlated (positively) with wealth. In this section, we look more directly at whether the presence of working capital is associated with increased or decreased child migration.[15] With perfectly competitive, flexible labor markets and no measurement error in living standards, the presence of family farm or business should have no effect on child migration probabilities. In a model without labor markets, the child wage should no effect migration. We have already seen that the child's wage is one of the few robust correlates of child migration. Similarly, the findings in this section for family farms are inconsistent with the no labor markets model.

These results are in table 8. Column 1 shows that families with a farm are more likely to have an absent child, and column 2 shows that this positive association between working capital and child migration is even greater when one controls for wealth and remoteness. At the mean housing wealth in the population, the estimated effect of owning a farm on migration probabilities is about the same as decreasing remoteness by a standard deviation. Thus, while the results for owning a farm are fairly large in magnitude, they are the opposite in sign from what the no labor market predicts. A weakness in our review of theories is that none of the models predict a strong positive effect of working capital on migration conditional on wealth and remoteness (as in column 2). On possible explanation is that the presence of land is correlated with access to credit and thereby the ability to afford to migrate if migration is liquidity constrained. In general, the negative association between wealth and migration is inconsistent with the liquidity constraints interpretation of this result, but it is possible that a non-linear

[15] We assume that child migration has no effect on the presence of a family farm or home enterprise despite evidence to the contrary with adult migrants in the Philippines (Yang 2006).

relationship between wealth and migration is as in McKenzie and Rapoport (2007) lurks in the data and that we have too little data in the present context to detect it.

There is a lot of heterogeneity in farms. Columns 3 and 4 of table 8 look at the association between agricultural wealth (discussed in the context of table 6) and child migration. We do not know that all of these agricultural holding are actually farmed by the child's household, and we have already discussed how this variable proxies for wealth. Hence, its interpretation is difficult. Greater agricultural wealth is associated with increased migration probabilities (column 3) although this association reverses when we control for housing wealth and remoteness (column 4). Hence the findings with respect to agricultural wealth are ambiguous. However, at mean wealth, the coefficients in column 4 suggest that any negative link between agricultural wealth and migration is small. A standard deviation in agricultural wealth in column 4 is associated with less than half the effect of a standard deviation increase in remoteness.

The findings for home enterprises in columns 5 and 6 are consistent with the no labor markets hypothesis in that children are less likely to migrate from families with home enterprises. However, the magnitudes are not large. Moving from no business to a family operated business is about 40 percent of the change in migration probabilities associated with a standard deviation change in remoteness and less than half the wealth elasticity of migration in the least remote villages. Unfortunately, the data do not contain more nuanced detail on the presence or value of working capital in the home enterprise.

Taken together, the patterns observed for working capital do not strongly support the model without rural labor markets for children. The findings for the presence of the family farm are inconsistent with the no labor markets model as are the results for the relationship between

child wages and migration reported in table 6. The findings for agricultural wealth are consistent with the no labor markets model, but their interpretation is complicated by the fact that they also capture wealth. The results for home enterprise ownership are consistent with the no labor markets model, but neither the agricultural wealth nor home enterprise results suggest that the presence of working capital exerts a large influence on whether children migrate. When coupled with the flattening property in the data that is inconsistent with the no labor markets view, we feel comfortable asserting that rural labor markets for child labor appear to exist in this data. When coupled with the finding that poorer families are more likely to have migrant children (especially in less remote locations), we conclude that the model of financial motives for migration with competitive rural labor markets appears to best characterize the present data.

5 Conclusion

In this study, we consider the determinants of child migration by comparing the home (sending) environment of children who live away from their mother to children that live with their mothers. We document roughly 1 million children under 15 from Uttar Pradesh and Bihar living away from their mothers. We do not believe that these children live away from their mothers because of their mothers' migration. Only 11 mothers have more than 1 child away, and no mothers have all of their children away. We observe that children are less likely to migrate from more remote villages.[16] They are less likely to migrate from communities where the child wage is higher. They are less likely to migrate from wealthier households although the negative association between migration and family wealth is largely in the most accessible, least remote

[16] We interpret this remoteness result as a reflection of transport costs, but it could also be interpreted as reflecting the value of social networks in finding employment if remoteness and social networks in distant cities are negatively correlated (for example, Munshi 2003).

areas. We observe that there is little clear association between the presence of working capital in the household and child out-migration.

The classical model of adult migration such as Sjaastad (1962) posits that adults migrate when the expected net present value of earnings gains from migration exceed some moving costs. We argue that the patterns observed in this data from Uttar Pradesh and Bihar are consistent with this financial motives for migration model when there are competitive rural child labor markets. Of course, in reality there is heterogeneity in the population's motives for child migration. Some children migrate for education, but on average the financial motives model seems a more accurate characterization of the data. Most previous studies of child migrants, treat the child at the destination location as the data source. This approach is superior to the present in that the researcher knows that the child is a migrant whereas in the present approach we are vulnerable to considerable measurement error in the child's migrant status. However, one cannot learn about the determinants of migration from only studying migrants at their destination as there is no comparison group of children that did not migrate from the child's home community.

There several limitations of this study that must be emphasized. First, there are problems in the definition of child migration. In addition to the problem of measurement error in the child's migration status, we know nothing about what the migrant child is actually doing. Not all child migrations are the same if one is concerned about child welfare (see Akresh 2004). Designing policies to help or deter child migrants requires more detailed information about the exact nature of the child's migration. Moreover, our approach completely misses children who migrate because of maternal death or household collapse, and these may be the most vulnerable children. Second, this study has done little to address endogeneity in right hand side variables,

and there are substantive measurement problems in important characteristics like wealth, working capital, and remoteness. For this reason, we use the data only to infer which model of child migration seems most consistent with the patterns observed in the data. A richer, causal analysis is necessary before one designs and targets policy. However, despite this study's considerable limitations, its contribution is substantive given the almost complete lack of a literature on child migration within economics and child migration's potential importance in rising economies like India. In fact, perhaps the most interesting observation from the present study is that the migration patterns of children out of Bihar and Uttar Pradesh seem similar to patterns observed in older populations and in very different social and political contexts.

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Appendix: Factor Calculations

1. Housing Wealth

There are many proxies for living standards available in the data. All suffer from being weak proxies and potential endogeneity bias. Our approach is to acknowledge that the underlying variable of interest, the family's living standard without the child's economic contribution, is unobserved. We observe several variables that are functions of the family's living standard and

that are independent of one another conditional on the family's underlying living standard. This later assumption (conditional independence) also rules out variables having a separate impact on the outcome of interest (child migration) other than through the variables association with living standards. For example, the mother's education and caste are strongly correlated with living standards, but we expect both to influence the child migration decision directly.

We feel most comfortable with treating housing characteristics and caste characteristics within the village which vary within caste between village as proxies of living standards. Our assumption is that the type of physical infrastructure of the house is not influenced by whether a child is away nor will it affect the caste's position within the community. The data suggested two factors (two factors with eigenvalues greater than 1), and appendix table 1 summarizes the factor loadings put on each of the housing and caste characteristics:

Appendix Table 1: Factor loadings on housing wealth and caste position within village

Variable	Caste's position in village	Housing Wealth	Uniqueness
Pucca House	-0.050	0.310	0.902
Not Mud Floors	-0.051	0.342	0.880
# of Separate Rooms	-0.058	0.336	0.884
Latrine Present	-0.119	0.317	0.885
Household belongs to dominant caste in village	0.763	0.251	0.355
Caste's share of total village population	0.811	0.299	0.253
Total land held by caste	0.187	-0.557	0.655
Mean landholdings of caste members	0.186	-0.660	0.530
Missing caste information	-0.512	0.229	0.686

2. Agricultural Land Wealth

To compute the agricultural land wealth factor, we use all available information on household landholdings. The data suggest one factor with an eigenvalue greater than 1. The factor is constructed as described in appendix table 2.

Appendix Table 2: Factor loadings on agricultural land wealth

Variable	Agricultural Land Wealth	Uniqueness
Lacks agricultural land	-0.298	0.911
Acres of agricultural land owned	0.474	0.775
Fraction of land irrigated	0.402	0.838

3. Remoteness.

Many of the remoteness measures in table 5 are strongly correlated but do not satisfy the conditional independence assumption necessary for factor calculations (for example: an indicator for whether a bus stop is in a village will be correlated with time to a bus stop even conditional on "remoteness"). Hence, we limit our remoteness related variables used in the calculation of the remoteness factor. Again, the data suggest 1 factor. The loadings are in appendix table 3.

Appendix Table 3: Factor loadings on remoteness

Variable	Remoteness	Uniqueness
Time to nearest bus stop	0.445	0.721
Time to nearest bank	0.586	0.566
No road to village	0.719	0.336
# Months without road access to village	0.674	0.392
# of Households in Village	-0.084	0.854
Fraction of primary earners in manufacturing	-0.160	0.906
Time to primary school (village)	0.026	0.581
Time to middle school (village)	0.415	0.621
Time to middle school (household)	0.584	0.521

Time to primary school (household)	0.193	0.603

Figure 1: Proportion of Live Births No Longer Living with Mother by Child Age

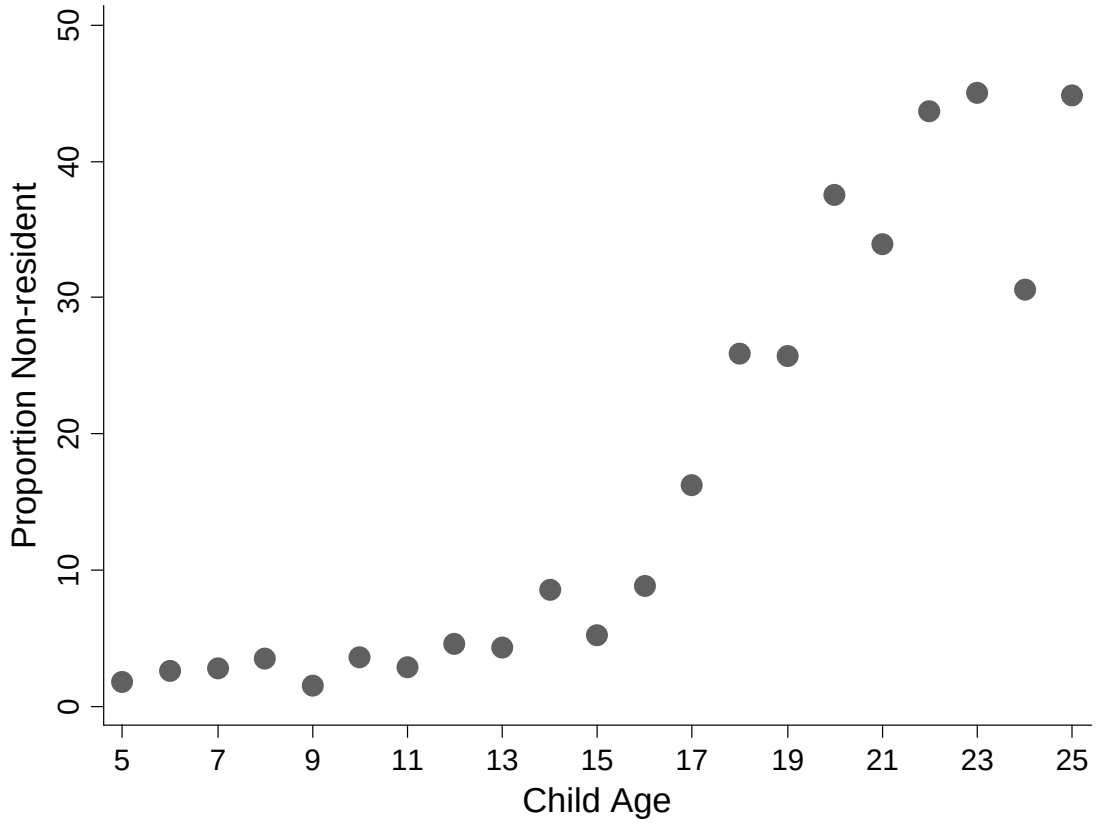

Table 1: Predictions from Theory

	Financial Motives		Altruism	
	Perfect labor markets	No labor markets	Perfect labor markets	No labor markets
Wealth	-	-	+	+
Remoteness	-	-	-	-
Wealth*Remoteness	+	0	+	0
Home enterprises	0	-	0	-
Child Wages	-	0	-	0

All signs are marginal effects conditional on other listed characteristics as well as urban wages.

Table 2: A Mumbai NGO's contact with working children by State of Origin

State	# Contacts		
	all	**under 12**	**12-14**
Andhra Pradesh	49	32	17
Assam	11	5	6
Bihar	3,647	1,672	1,975
Delhi	8	4	4
Gujarat	16	10	6
Haryana	4	1	3
Jharkhand	4	3	1
Karnataka	31	20	11
Kerala	1	1	
Madhya Pradesh	5	3	2
Maharashtra	147	80	67
Orissa	2	1	1
Punjab	4	2	2
Rajasthan	143	50	93
Tamil Nadu	11	4	7
Uttar Pradesh	203	94	109
West Bengal	60	16	44
Other / Not Available	531	246	285
Nepal	111	51	60

Source: Case contact records from a Mumbai NGO, 2001-2003.

Table 3: Children 5-14 born to resident ever married women age 15-45

	All Births	Living Children	Living with Mother	Living away from Mother
Sample Size	4294	3667	3549	118
Population (millions)	34.0	29.0	28.0	1.0
Age	8.98	8.95	8.91	9.94
Female	0.46	0.46	0.46	0.39
Birth Order				
Birth Order	2.98	2.77	2.77	2.68
Birth Order among Living	2.54	2.54	2.54	2.51
Oldest Living Child	0.29	0.29	0.29	0.30
Alive	0.86	1.00	1.00	1.00
Not present in Household	0.17	0.03	0.00	1.00
Mother lives in Bihar	0.51	0.53	0.53	0.51
Religion is Hindu	0.87	0.87	0.88	0.86
Caste:				
Upper Hindu Caste	0.13	0.13	0.13	0.12
Middle Hindu Caste	0.02	0.02	0.02	0.03
Backward Agricultural Caste	0.24	0.24	0.24	0.30
Backward Caste (other)	0.22	0.23	0.23	0.23
Scheduled Caste or Tribe	0.25	0.25	0.25	0.18
Muslim Upper Caste	0.03	0.03	0.03	0.03
Muslim Backward Caste	0.10	0.09	0.09	0.11

Source: UPB Survey. All means weighted to be representative of surveyed population

Table 4: Standard of Living Correlates of Children 5-14 born to resident ever married women age 15-45

	Living Children	Living with Mother	Living away from Mother
	3667	3549	118
Primarily agricultural household	0.696	0.697	0.666
Lacks agricultural land	0.280	0.281	0.239
Acres of agricultural land owned	1.993	1.991	2.075
Fraction of land irrigated	62.7	62.6	67.3
Price per acre	74,787	74,513	82,654
House Attributes			
Thatch House	0.289	0.289	0.285
Tile House	0.349	0.351	0.304
Semi-Pucca House	0.170	0.173	0.077
Pucca (state) House	0.015	0.015	0.015
Pucca House	0.177	0.172	0.318
Mud Floors	0.904	0.905	0.872
# of Separate Rooms	3.188	3.169	3.727
Latrine	0.055	0.056	0.027
Literate adult female in household	0.243	0.240	0.338
Female with completed primary school in household	0.180	0.177	0.258
Male with completed primary school in household	0.510	0.506	0.624
Mother Attributes			
Mom Literate	0.222	0.220	0.277
Mom completed primary school	0.153	0.151	0.205
Mom Currently Married	0.972	0.973	0.926
Household belongs to dominant caste in village	0.519	0.521	0.459
Caste's share of total village population	0.399	0.401	0.343
Total land held by caste	5.332	5.325	5.529
Mean landholdings of caste members	2.835	2.834	2.871
Missing caste information	0.058	0.057	0.087
Cash income per adult laborer per year (10,000 rupee)	1.267	1.264	1.371
Child daily wage (rupeee)	70.4	70.3	71.4
Adult Economic Activity Rate in village	0.507	0.508	0.487
Cash wages paid in village	0.934	0.936	0.877
Standard deviation of days worked per month	201	201	200
Constructed Household Level Factors			
Agricultural Land Wealth	0.025	0.024	0.062
Housing Wealth	0.039	0.038	0.066
Caste's position in village	0.046	0.052	-0.128

Source: UPB Survey. All means weighted to be representative of surveyed population

Table 5: Remoteness correlates of children 5-14 born to resident ever married women age 15-45

	Living Children	Living with Mother	Living away from Mother
# Children	3667	3549	118
No road to village	0.118	0.120	0.070
Road to village is a katcha road	0.401	0.400	0.441
Road to village is paved	0.239	0.239	0.229
Road to village is tar	0.242	0.241	0.260
Road to village is new within last 5 years	0.160	0.161	0.138
# Months without road access to village	2.913	2.934	2.305
Bus stop in village	0.181	0.179	0.238
Time to nearest bus stop	0.576	0.578	0.520
Bank in village	0.074	0.073	0.125
Time to nearest bank	0.690	0.692	0.633
# of Households in Village	243	241	291
Fraction of primary earners in manufacturing	0.159	0.158	0.192
Time to nearest primary school	0.220	0.220	0.217
Time to nearest middle school	0.634	0.636	0.581
Remoteness (constructed factor)	0.032	0.037	-0.100

Source: UPB Survey. All means weighted to be representative of surveyed population. All times are in hours. Factors are not mean zero in the population of living children, because they are computed on the full sample of village.

Table 6: Absent Children and Family Living Standards

Dependent Variable	Child absent				Adult Cash Income	Child absent
	-1	-2	-3	-4	-5	-6
Household Living Standards						
Housing Wealth	-0.005	-0.003	-0.003		0.031	
	[0.006]	[0.006]	[0.006]		[0.088]	
Agricultural Land Wealth			0.000			
			[0.009]			
Adult Cash Income				0.002		-0.106
				[0.003]		[0.370]
Caste Position within Village		-0.007	-0.007	-0.008	0.009	-0.007
		[0.004]*	[0.004]*	[0.004]*	[0.066]	[0.009]
Village Economic Characteristics						
Child Daily Wage	-0.007	-0.007	-0.007	-0.008	0.131	0.006
	[0.004]*	[0.004]*	[0.004]*	[0.004]*	[0.048]***	[0.050]
Village Economic Activity Rate	0.000	0.005	0.005	0.004	0.136	0.019
	[0.021]	[0.021]	[0.021]	[0.021]	[0.274]	[0.064]
Pay in Village	0.003	0.002	0.003	0.004	-0.413	-0.041
	[0.034]	[0.035]	[0.036]	[0.034]	[0.226]*	[0.165]
Std Dev of Days Worked in Village	0.000	0.000	0.000	0.000	0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Child Characteristics						
Female	-0.014	-0.014	-0.014	-0.014	-0.010	-0.015
	[0.007]**	[0.007]**	[0.007]**	[0.007]**	[0.066]	[0.009]
Oldest Living Child	-0.017	-0.017	-0.017	-0.016	0.010	-0.016
	[0.010]*	[0.010]*	[0.010]*	[0.010]*	[0.087]	[0.013]
Oldest Living * Female	0.012	0.011	0.011	0.011	-0.078	0.003
	[0.013]	[0.013]	[0.013]	[0.013]	[0.125]	[0.035]
Mother controls	yes	yes	yes	yes	yes	yes
Child controls	yes	yes	yes	yes	yes	yes
Income Instrumented with Wealth	No	No	No	No	N/A	Yes
Observations	3667	3667	3667	3667	3667	3667

Child controls include year of birth fixed effects and caste fixed effects. Mother controls are the mom's literacy status, whether she has completed primary school, whether she is currently married, her age (dummies for age grouping), and her number of births.

Standard errors corrected for clustering at the village level. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 7: Remoteness and Absent Children

Dependent variable: child absent from mother

	-1	-2	-3	-4	-5	-6
Housing Wealth	-0.003	-0.007	-0.003	-0.005	-0.002	-0.001
	(0.006)	(0.009)	(0.006)	(0.007)	(0.006)	(0.006)
Caste Position within Village	-0.008 *	-0.008 *	-0.008 *	-0.008 *	-0.008 *	-0.008 *
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Time to bus stop	-0.005	-0.005				
	(0.009)	(0.009)				
Wealth * Time to bus		0.006				
		(0.010)				
Time to bank			-0.004	-0.004		
			(0.005)	(0.005)		
Wealth * Time to bank				0.003		
				(0.006)		
Remoteness (factor)					-0.006 **	-0.006 *
					(0.003)	(0.003)
Wealth * Remoteness						0.002
						(0.004)
Mother controls	yes	yes	yes	yes	yes	yes
Child controls	yes	yes	yes	yes	yes	yes
Village economic controls	yes	yes	yes	yes	yes	yes
Observations	3644	3644	3644	3644	3535	3535

Child controls include the child's gender, whether the child is the oldest living child, the interaction of these two, year of birth fixed effects, and caste fixed effects. Mother controls are the mom's literacy status, whether she has completed primary school, whether she is currently married, her age (dummies for age grouping), and her number of births. Village economic controls include child wage, local adult economic activity rate, an indicator for whether there's any cash wage work in the village, and the standard deviation of days worked in a month for the village.

Standard errors corrected for clustering at the village level. Observations missing from columns 1-4 missing because of missing travel times. Additional missings from columns 5 and 6 are because of additional missing information in the construction of the remoteness factors. * significant at 10%; ** significant at 5%

Table 8: Working capital and absent children

Dependent variable: child absent from mother

	-1	-2	-3	-4	-5	-6
Household operates a farm	0.001	0.006				
	(0.007)	(0.007)				
Agricultural Land Wealth			0.001	-0.002		
			(0.009)	(0.009)		
Household has home enterprise					-0.002	-0.002
					(0.007)	(0.007)
Housing Wealth		-0.002		-0.002		-0.002
		(0.006)		(0.006)		(0.006)
Caste Position in Village		-0.007		-0.007		-0.007
		(0.004)		(0.004)		(0.004)
Remoteness		-0.005		-0.005		-0.005
		(0.003) *		(0.003) *		(0.003) *
Housing wealth * remoteness		0.002		0.002		0.002
		(0.004)		(0.004)		(0.004)
Mother controls	yes	yes	yes	yes	yes	yes
Child controls	yes	yes	yes	yes	yes	yes
Village economic controls	yes	yes	yes	yes	yes	yes
Observations	3667	3552	3667	3552	3667	3552

Child controls include the child's gender, whether the child is the oldest living child, the interaction of these two, year of birth fixed effects, and caste fixed effects. Mother controls are the mom's literacy status, whether she has completed primary school, whether she is currently married, her age (dummies for age grouping), and her number of births. Village economic controls include child wage, local adult economic activity rate, an indicator for whether there's any cash wage work in the village, and the standard deviation of days worked in a month for the village.

Standard errors corrected for clustering at the village level. Observations missing from columns 2, 4, and 6 because of missing remoteness information. * significant at 10%.