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Intergenerational Mobility and Interpersonal Inequality in an African Economy

Sylvie Lambert, Martin Ravallion and Dominique van de Walle[1]

Abstract: How much economic mobility is there across generations in a poor, primarily rural, economy? How much do intergenerational linkages contribute to current inequality? We address these questions using original survey data on Senegal that include an individualized measure of consumption. While intergenerational linkages are evident, we find a relatively high degree of mobility across generations, associated with the shift from farm to non-farm sectors and greater economic activity of women. Male-dominated bequests of land and housing bring little gain to consumption and play little role in explaining inequality, though they have important effects on sector of activity. Inheritance of non-land assets and the education and occupation of parents (especially the mother) and their choices about children's schooling are more important to adult welfare than property inheritance. Significant gender inequality in consumption is evident, though it is almost entirely explicable in terms of factors such as education and (non-land) inheritance. There are a number of other pronounced gender differences, with intergenerational linkages coming through the mother rather than the father.

Keywords: inheritance, land, mobility, inequality, gender

JEL: D31, I31, O15

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1. Introduction

Traditional agrarian economies are often thought to have limited intergenerational mobility and (hence) highly persistent inequality. However, while intergenerational mobility has long been a subject of research in developed countries, the issue has received relatively little attention in poor, primarily agrarian, economies.[2] In particular, we know very little about how much of the inequality seen in such economies is associated with the linkages across generations through inheritance of assets and occupations, bequests, parental choices on schooling and parental characteristics. Inheritance of agricultural land—the main non-labor factor of production—is probably the first mechanism one thinks of for the intergenerational transmission of inequality in such settings. However, education could well be at least as important, especially in facilitating diversification into more remunerative non-farm activities. Are these economies characterized by a high degree of intergenerational persistence of poverty and affluence, or is there churning associated with successes and failures for adults taking up new economic opportunities? How much do intergenerational linkages and parental characteristics matter to adult living standards and economic activities?

We also know very little about inter-personal inequality in living standards, including between men and women. This reflects a long-standing limitation of the available survey data on consumption, namely that these data are almost invariably collected at the household level. Inequality and poverty measures typically assume equality within households. Since adult women are generally married, it is difficult to separate their own welfare from that of their husbands on the basis of household data. However, gender dimensions of inequality are considered important. Male control over land and its inheritance has long been a prominent gender issue in development studies.[3] Maternal education and work experience might also be expected to play a role. It has often been argued that maternal education has an important influence on children's health, nutritional status and schooling.[4] There might also be implications for adult welfare and economic activity, though there has been less research on this intergenerational linkage.

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[2] A large sociology literature discusses this question, with seminal books by Blau and Duncan (1967) and Goldthorpe (1987).

[3] In the context of land rights in Africa see Gray and Kevane (1999) for an overview of the issues.

[4] See, for example, Haveman and Wolfe (1995), and Hill and King (1995). The causal interpretation of these correlations can be questioned given the possibility of inter-generationally correlated latent factors; see Behrman and Rosenzweig (2002). Dumas and Lambert (2011) find that maternal education plays a weaker role once properly instrumented.

This paper helps fill this gap in our knowledge on intergenerational mobility and the transmission of inter-personal inequality in a poor, primarily rural, economy. The central question we address is how important various intergenerational linkages are to consumption inequality among adults. The paper takes advantage of an unusual new dataset for Senegal that measures consumption at a relatively disaggregated level within the household, so that we can build an "individualized" consumption-based welfare measure, to be matched with individualized data on inheritance and various control variables. The data also allow us to distinguish intergenerational linkages by gender.

We model individual adult consumption as a function of various intergenerational linkages, including land inheritance, education and parental characteristics (including occupation), with controls for other individual characteristics. In keeping with past literature, we treat inheritance as conditionally exogenous (conditional on our controls).[5] However, that assumption can be questioned (as we discuss later) and so we will test robustness to relaxing exogeneity, under the assumption that the father's death more than two years ago is excludable from the consumption regressions, i.e., that the past death only matters via inheritance.

We use our model of individual consumption to attribute overall consumption inequality to these explanatory factors. Here we use the Shorrocks's (1982) "natural decomposition," as adapted to a linear regression function following Fields (2003). Using the same regression models and identification strategy, the paper also examines the role of intergenerational linkages in occupational and geographic mobility between parents and their offspring.

We find negligible consumption gain from land inheritance. Other sources of intergenerational linkages such as parental education and occupation, as well as parental investments in own education, appear to play a much bigger role in raising consumption. These factors also emerge as significant determinants of the intergenerational transition from farm to non-farm activity and geographic mobility, both likely to be linked with higher consumption. Land inheritance makes it more likely that one will remain a farmer and stay in rural areas. Interestingly, it is also associated with a move from farm to non-farm occupational status but only for men who do not also inherit responsibility for the extended household. In general, formal schooling brings higher returns in consumption terms than the inheritance of physical assets. Nevertheless, it is only for men that education is correlated with a higher probability of engaging in non-farm activities and moving away from the parental location of residence.

[5] Indeed, inheritance has been used as an instrumental variable for current wealth and land rights in explaining various dimensions of current living standards and land productivity. Examples include Besley (1995) and Akresh et al. (2010).

Overall, the inheritance of physical assets (land and housing) plays little role in explaining consumption inequality, even among rural households.

These results lead us to question the traditional model of a developing economy with imperfect credit markets in which privately-owned land is a marketable asset generating an income stream exclusively for the designated individual owner. But our results are easier to understand in the light of richer models of rural economies with limited market development. We already know from the literature (in anthropology as well as economics) that market failures and non-market allocation processes play an important role in how land is used. As anthropologists have emphasized, agricultural land inheritance in much of Africa is typically filtered through customary land allocation processes involving kinship or community groups.[6] Inheritance signals a change in responsibility, such that the recipient of land inherits obligations as well as an asset, and it is an asset that is not easily monetized to support other productive investments.

The impacts of inheritance will naturally reflect how the "dynastic family" allocates its resources, given the market and institutional environment. In principle at least, the extended family has the ability to attain any desired distribution of consumption, independently of the formal assignment of ownership rights. Indeed, it is an open question in this setting whether there is any net impact on the inheritor of a land bequest within the family.

Our results suggest that other mechanisms for the intergenerational transmission of inequality—notably related to parental education including assortative matching, and children's schooling—are more important than land inheritance in explaining interpersonal economic welfare and economic activities in Senegal. Even in very poor settings, parental background can influence the schooling, expectations, and life chances generally, of children in ways that matter to the realized living standards of adults. Our results support this view, echoing other findings in the literature.[7] Some degree of intergenerational correlation in occupational choices can be expected, for which we find supportive evidence.

In the following section, we begin by discussing what is currently known about intergenerational linkages in developing economies. We then describe our data for Senegal and the setting in Section 3. Section 4 briefly examines occupational mobility. The methods of analysis and our empirical results on the intergenerational effects on consumption, economic

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[6] For an overview of the issues see Shipton and Goheen (1992). Also see the discussion in Platteau (2000).

[7] Estudillo et al. (2001) emphasize the combination of both land inheritance and schooling in the inter-generational transmission of wealth in the rural Philippines. Lesorogol et al. (2011) find that the current wealth of Kenyan pastoralists is correlated with parental wealth and formal education but not with livestock inheritance. Ferreira and Gignoux (2010) find that family background characteristics are an important source of unequal opportunities in Latin America. Dumas and Lambert (2011) find that parental education has a strong effect on child schooling in Senegal.

activity and geographic mobility are discussed in the next 2 sections, while Section 7 explores various tests of robustness. Section 8 examines the implications for understanding inter-personal inequality, while a final section concludes.

2. Intergenerational linkages in a developing economy

A still small but growing literature has studied how parents go about assigning various assets across their children in developing countries. Quisumbing et al. (2004) and Estudillo et al. (2001), explore the parental allocation decision over land transfers and investments in education, from the point of view of gender equity. Using data for the Philippines, Sumatra and Ghana, they argue that parents aim to equalize economic well-being across their offspring, which may well result in unequal inheritance of specific assets given gender differences in returns. Intergenerational transfers thus reflect parents' expectations of returns to land and human capital assets and allow multiple sources of linkages and substitution. La Ferrara and Milazzo (2012) also document how parents strategize and substitute land and education transfers to their offspring in Ghana. They examine how a reform in inheritance law alters the transmission of human capital investments and land from parents to sons and daughters in Ghana. As posited by the authors, the relaxation of matrilineal rules of descent results in a reallocation away from schooling and towards land transfers that is more pronounced for boys and only evident for matrilineal (Akan) households. Akan sons are also found to be significantly more likely to be farmers post reform.

Although not our immediate focus in this paper, a strand of the literature has also focused on spousal inheritance at divorce or widowhood, and impacts thereof (Cooper and Bird 2012; Peterman 2012; Kumar and Quisumbing, 2012a and b). For example, Kumar and Quisumbing (2012b) investigate the impact of changes in Family Law and land registration procedures favorable to women in Ethiopia on married women's perceptions of asset and child custody allocations in the event of divorce. Reform induced changes in attitudes are found to have increased women's well-being but also led to intergenerational linkages through increased investments in child schooling.

Similar types of intergenerational transmission mechanisms are also emphasized in the literature documenting the role of property ownership, most prominently land, in enhancing women's status and bargaining power within the household with spillover effects on child human and physical capital (for example, Quisumbing and Maluccio 2003; Quisumbing 2009). Such female control over assets is often obtained through parental bequests.

There has been a lacuna of research on intergenerational mobility in Africa. Indeed, we know of only one paper addressing the issue, focusing on the intergenerational mobility between agricultural and non-agricultural occupations in five countries, namely Côte d'Ivoire, Ghana, Guinea, Madagascar and Uganda. In explaining the revealed variance in intergenerational occupational mobility across the countries, Bossuroy and Cogneau (2013) emphasize educational immobility in Madagascar and the pronounced duality in the spatial distribution of employment in the other countries, which the authors link to the countries' respective colonial histories.

The assignment of land ownership is naturally expected to play a role in any rural economy and this has been a theme in the development literature. Private ownership of land (with or without a formal title) is typically viewed as a form of private wealth, which is expected to deliver exclusively to its owner an income stream derived from the productive capacity of the owned land. In the context of a mainly rural market-based economy, one thus expects land ownership to play an important role in determining the individual's standard of living. Land inheritance is one way of acquiring ownership. Thus land inheritance should be important to the intergenerational transmission of inequality and also to economic activity, including diversification into non-farm production, especially when credit is unavailable. Development policy debates have sometimes focused on inheritance laws, especially reforms aiming to improve women's rights.[8]

Taxation policies have also emphasized land ownership as a basis for assigning taxes, including in poor rural economies. Famously, Henry George, the American political economist of the late 19th century, advocated taxes on the value of land, and (of course) these were to be levied on the designated owner. Taxes on land are found in almost all countries. Also, transfers and various direct interventions are often targeted according to land holding, defined by ownership. These include policies aiming to redistribute land itself. Tenure security is traditionally defined in terms of individual titles of private ownership. There have been many efforts (often supported by external development assistance) to foster individual ownership through land titling, with expected benefits to the government in efforts to tax land value, and also expected gains in both efficiency (promoting land investment through greater tenure security and access to credit) and equity (notably in promoting women's empowerment).[9]

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[8] Hallward-Driemeier and Gajigo (2011), Kumar and Quisumbing (2012b), Deininger et al. (2010) and Roy (2011) find evidence that legal reforms related to property rights have brought gains to women (the first two in Ethiopia and the other two in India).

[9] On the expected land productivity gains from titling see Feder and Noronha (1987), Barrows, and Roth (1990), Besley (1995) and Deininger (2003).

However, it is far from clear how relevant this standard model of land as a form of marketable and productive wealth is to poor rural economies where land markets are thin or non-existent and imperfect (and asymmetric) information and long-established social institutions play an important role in how land is allocated and used. The benefits from efforts to foster individual ownership titles are known to be uncertain when individual titling is introduced in an indigenous system of tenure, which is probably why the evidence that such efforts have had their expected benefits appears to be mixed.[10]

Inheritance of the family farm may well bring enhanced individual power within the family—interpretable as a non-pecuniary gain—but it undoubtedly also comes with responsibilities and constraints. Past observations about African agriculture lead one to question the extent of the gains to the inheritor of land, who may have to take on various obligations. These naturally include responsibility for the family as an economic unit, but they may also extend well beyond the immediate, and even the extended, family. Anthropologists have emphasized the social responsibilities that come with acquired wealth such as through land ownership, notably in Africa. As Shipton and Goheen (1992, p.311) note with reference to land in rural Africa, "Rights often entail duties. .. Cultivation and grazing rights may entail obligations to share farm products beyond the domestic group." Similarly, with reference to the Luo people of Kenya, Shipton (1992, p. 361) argues that "Rights of individuals [over land] were not thought sacrosanct, but instead they interlocked with the rights of others, and overlapped with those of families and wider groups." Individual responsibilities within a village economy are often embedded in broader social ties, interpretable as means of enforcing cooperative equilibria that bring collective benefits (Platteau, 2000). Whether such responsibilities come with a consumption incentive is unclear on a priori grounds, given that there are also likely to be non-pecuniary benefits and costs.

In much of Africa, the local state and community governance are involved in land allocation, as are traditional, customary, non-market kin-based allocation processes. In particular, land that is not kept in use and looked after appropriately risks appropriation by the community in many rural economies: the lineage or household head is thus in charge of making sure this doesn't happen so as to insure the family's long-term security. Further, membership of a (potentially large) extended family often conveys rights to work the family's land holding and/or share in its bounty. These arrangements can mean that individual land ownership conveys

[10] Ensminger(1997) discusses the conflict between private property rights introduced in the context of customary norms and institutions in Kenya. Deininger (2003) reviews the evidence. A recent example of a study pointing to success of land titling in raising productivity is Holden et al. (2009); an example finding little or no impact is Jacoby and Minten (2007).

obligations and associated costs to the owner, especially if he or she is also the head of household. As noted by Ensminger (1997) "Lineages are not just kinfolk…they cooperate in labor, risk management, and investment. Fundamental to the high level of trust and cooperation that such systems enjoy are basic guarantees of subsistence in the short run – through access to land – and the long run through inheritance of that land." (p.165). One cannot even rule out consumption losses to the inheritor. Without a land market it will be hard for the recipient to "cash in" the land to finance some other (non-farm) investment. The lack of a land market may then create occupational stickiness, whereby the bequest of land inhibits the recipient's transition to non-farm activities (though possibly enhancing the scope for such a transition by others in the family). Land-market failures may even entail that the (say) eldest son who gets the land and the responsibilities of being the head of household ends up trapped in farming, while his siblings see new opportunities for diversification into non-farm activities.

Indeed, inheriting the land but without the responsibilities of headship may allow the recipient to leave the land to take up some non-farm activity. As already noted, given weak market and governmental institutions for risk-sharing, the family farm is known to serve a social security role in traditional societies. The recipient of the land bequest may then effectively transfer the right to other family members (the mother, spouse, and children). Their security (at some minimal level) is thus assured, and the son is free to seek work or start an enterprise elsewhere, such as in an urban area. However, one can also imagine situations in which non-market factors in the allocation of command over the product of land can discourage agriculture, even for the household head, in favor of other (non-farm) activities possibly outside the village economy. This can happen when the non-market allocation rules entail a sharing of the product of land, and that the sharing rule entails that inheriting extra land reduces the marginal product of the owner's effort in farming relative to other uses of labor time, thus generating a substitution toward non-farm activities. This is a distortion to inter-sectoral allocation, in the sense that marginal products of labor become unequal between activities. In principle, such an inefficiency could be avoided if the family is well informed about other (non-farm) income sources, so allowing sharing rules based on total income.

Finally, it is worth underlining that land inheritance can be accompanied by learning within kinship groups—a source of specific human capital that may play an important role in the welfare gains from inheritance. It is widely believed that traditional farming practices in developing countries are characterized by a high degree of farm-specific knowledge, accumulated through experience farming the same land. Rosenzweig and Wolpin (1985) have emphasized the role of family-specific information in explaining intergenerational and intra-

household land transfers, including inheritance; they find support for the claim that specific-knowledge about the family farm entails that land is kept within the family rather than being sold. This could also explain why land markets are often thin or non-existent and also why the extended family is so common in poor rural economies, given that the older generation will have accumulated greater knowledge about the family farm. As long as the extended family can share knowledge there will be little economic loss at the death of the head of the household, though one can imagine circumstances (including unanticipated deaths) when that is not the case.

We have seen that in the context of a poor rural economy, and in the African context more specifically, land inheritance may be a mixed blessing. The same is true of the other main intergenerational linkage, namely parental investments in their children's education. It is well understood that the parental decision to favor one son (say) with extra schooling comes with an implicit (and sometimes quite explicit) contract for that son to share a steady stream of his subsequent earnings. These arrangements, and the redistributive pressures on economically successful household members, as synthetized by Platteau (2006), are thought to be common in Africa and there is supportive anecdotal evidence for Senegal (Boltz and Villar, 2013). The son's own consumption gain from schooling is then reduced according to how much is to be sent home, or shared within the larger family group if the son remains resident. (Identifying the individual consumption gain in this case may also require data on consumption within the household.)

The upshot of these observations is that inheritance of land and educational attainments can have ambiguous effects on welfare and economic activities. The linkages may well be quite weak. The rest of this paper will address these issues empirically using an unusual data set for Senegal.

3. Setting and data

The data used here come from an original survey entitled Pauvreté et Structure Familiale (Poverty and Family Structure, henceforth PSF) conducted in Senegal in 2006/2007. The PSF survey stems from the cooperation between a team of French researchers and the National Statistical Agency of Senegal.[11] The survey is described in detail in De Vreyer et al. (2008).

[11] Momar B. Sylla and Matar Gueye of the Agence Nationale de la Statistique et de la Démographie of Senegal (ANSD) on the one hand and Philippe De Vreyer (University of Paris-Dauphine and IRD-DIAL) Sylvie Lambert (PSE) and Abla Safir (now with the World Bank) designed the survey. The data collection was conducted by the ANSD thanks to the funding of the IDRC (International Development Research Center), INRA Paris and CEPREMAP.

The PSF covers a sample of over 1800 households spread over 150 clusters drawn randomly from the census districts so as to insure a nationally representative sample. About 1,750 household records can be exploited, covering 14,450 individuals. The survey describes a population of which the majority (57%) live in rural areas, 48% are male and 95% are Muslim—statistics that accord well with other sources (World Bank, 2009). Despite more than half of the country's close to 12.5 million inhabitants in 2009 being rural, the contribution of agriculture to GDP amounts to only 18%. Like other African countries, Senegal has seen considerable population urbanization; at the time of independence in 1960 rural areas were the home of 77% of the population. Urbanization over time is evident in the survey in that amongst those adults who had a father in rural areas, 22% now live in urban areas. A similar percentage of those whose mother lived in rural areas also do so.

Senegalese households are large, with slightly more than eight members on average in the PSF. The families are typically multigenerational and extended both horizontally and vertically, with 36% of household members that are neither the head, nor one of his wives or children. Two thirds of households include such "extended" family members. Polygamous unions are common, with 24% of married men and 37% of married women engaged in such unions. Most of these comprise a husband and two wives (only 20% of polygamous unions have more than two wives). We find that 31% of polygamous men have non-cohabiting wives. In half of these cases, the husband is either considered the head of both households, or of one, while one of the wives is considered head of the other household. In the other half, a married polygamous woman lives in a separate household headed by a relative (mainly her father, brother or son).

In addition to the usual information on individual characteristics, the survey collected details on each household's structure and budgetary arrangements. To best reflect intra-household structure and resource allocation, each household was divided into groups or "cells" according to the following rules: the head of household and unaccompanied dependent members, such as his widowed parent or his children whose mothers do not live in the same household, are grouped together. Any unmarried brothers of the head would also be considered in his cell. Each wife of the head and her children and any other dependents then form separate cells. Other women with children or other dependents and whose husbands are not present, are also considered cell heads. The same goes for any other family nucleus such as a married child of the household head with his/her spouse and children, or a sister of the household's head residing in the household with her children (after divorce or while her husband looks for a job). This disaggregation emerged from field interviews as being the relevant way to split the household

into its component groups. It is worth noting that enumerators saw this as a natural way to divide households and had no difficulty collecting the data accordingly.

Consumption expenditures are recorded in several parts: first all common expenditures are collected (housing, electricity bills etc). Food expenditures are compiled based on a detailed account of who shares which meal and how much money is specifically used to prepare the meal. These are the "DQ" or "dépenses quotidiennes" ─ the name the Senegalese give to the amount of money a woman has at her disposal to buy fresh ingredients for the meals of the day. Next individual consumption is collected at the group level (such as clothing, mobile phone, transportation, and food outside the home expenditures). Finally, expenditures that are shared between several cells but not the whole household are collected.

A measure of per capita consumption can then be constructed at the cell level allowing us to identify unequal consumption levels within households. Subgroups also emerge that take some or all of their meals separately (in 17% of households), thus widening the possibility for differences in nutritional intake among household members. Thanks to these data we can construct a relatively individualized measure of consumption, which is almost never available in household surveys. This is what we will use to assess individual economic welfare. The measure we use here is the amount of expenditures specific to the cell and not shared with any other cell plus the cell's imputed share of the household's joint expenditures per person.

We will restrict our study to individuals who are heads of their cells. For consumption purposes, they are assumed to be the decision makers at the cell level.[12] We are therefore left with 4401 observations, of which 56.8% are women. 75% of cell heads are household heads or the head's spouse, 7.5% are daughters of the head, and 3% are daughters-in-law. The average number of cells per household is 2.51. The range is from 1 to 12; 81% of the sampled households have more than one cell.

In this sample, average per capita total consumption amounts to about 276 000 CFA francs per year, which corresponds to nearly $925 US in 2005 PPP exchange rates for consumption, or about $2.50 per day. When looking at total expenditures, inequalities within the household are evident: the ratio between the expenditures of the richest and the poorest cell within a household can be as high as 18 and is still equal to 4.4 after trimming off the 5% most unequal households. Computing an inequality index for the distribution of cash expenditures in the population, we find a Gini index of 59.8% if we attribute to each person the average per

[12] Note that this sample is not representative of the adult population in Senegal. For example, among adult women, wives of household heads are over-represented, while daughters of the head are under-represented. It is nevertheless representative of the adult population that has at least one dependent.

capita consumption level in his or her household. The index is 62.7% if instead each individual is attributed the per capita consumption in his cell (i.e. the sum of the per capita expenditures specific to the cell and of the cell's share of common household expenditures, distributed on a per capita basis within the cell). The Gini index of inequality in the distribution of the cell-specific component of cash expenditures (ignoring the joint consumption within the household) is 77.9%.

The individualized consumption data also reveal a sizeable gender gap. Regressing the log of cell consumption on gender, the regression coefficient (the difference in mean log consumption) is 0.57 and is significant at the 1% level (t=14.92).

Importantly for the purpose of our paper, these data include information on parental characteristics and inheritance. If the parent has died, the survey asked whether he or she left any inheritance and then, for each person, whether they obtained any inheritance in the form of land, housing, money, durable goods or productive capital. No valuation of these inheritances was obtained.[13] In particular, we do not know how much land was inherited. For this reason we will use a dummy variable indicating whether land was inherited or not (and likewise for the other forms of inheritance). This may well affect the size and significance of our estimates, although the endogeneity concerns (which we return to) would clearly be even greater using amounts of inherited land rather than simply the incidence of inheritance.

On paper, agricultural land is allocated through local community level administrative processes in Senegal. Since 1964, most of the land (between 95 and 98%) has been owned by the state and part of what is called the national domain (Caveriviére 1986; Boone 2007). Allocation and use is reserved for those who belong to the local community or kinship group (Boone 2007). Land use rights are attributed by local land committees on the basis of needs and capacity to farm. This land cannot be sold and in theory cannot be bequeathed either. As a result, rural land markets are very weak. A land reform aiming to strengthen the security of use rights and to facilitate market transfers was attempted in 2004. Following extensive consultations with rural producers and civil society, the Law for agro-sylvo-pastoral development (LOASP) was finally enacted in 2004 but its land component was dropped due to a lack of consensus. The specific fear was that communities would be at risk of being dispossessed of lands not yet formally attributed by the local land committees. The need for a land reform is still being discussed.

The unequal access to land across gender is also a source of concern in Senegal. The legal setting has recently evolved to try to fight this source of gender inequality. The constitution of

[13] This is information that households were firmly unwilling to reveal, probably because inheritance rules are well established and contrary to what is universally asserted, are not in actual fact adhered to.

2001 finally granted women the right to own land. They have only been allowed to be on the local land committees in charge of the attribution of use rights since May 2010. Hence, in the past, women very rarely received land through this allocation mechanism. There has been little progress in the last decade. In its 2011 report on land policy in West Africa, the Economic Commission for Africa still emphasizes Senegalese women's very poor access to land (UNECA 2011).

Despite the legal setting described above, the reality on the ground is that land bequests are common. Our survey data indicate that, in our sample of cell heads, 32% of men and 43% of those whose fathers have died, but only 17% (28%) of women, report that they inherited land. Looking at all forms of inheritance (including housing, durables, money and productive assets) 54% of men in the sample inherited something, while 38% of women did so. In practice, heirs are given priority over land use rights relative to other potential users. Hence, inheritance of paternal lineage land is an important means of access to ownership. In our survey, we observe very few changes in land ownership over the five years preceding the survey. Nevertheless, half of the cases where the amount of land owned increased are due to inheritance.

Several inheritance laws that give different treatment to women coexist in Senegal. Individuals can choose which law to abide by before their death.[14] The French inspired ("modern") system of inheritance dictates that wealth be shared equally among children, whatever their gender. By contrast, Islamic inheritance law (which is by far the most common choice) limits the inheritance of daughters to half of that of sons.[15] In addition, entrenched tradition favors sons for inheriting land (with a small exception in Basse Casamance where there is slightly more access to land for women, due to strong tradition in women-dominated rice cultivation). Since daughters typically move to their husband's abode, they are supposedly compensated by their brothers with money or other forms of wealth such as their imputed yearly share of the harvest, for what would have otherwise been their share of land inheritance.

Another relevant point regarding inheritance practices is that inheritance is not always shared immediately after a father's death. The heirs may carry on living in the parental house, using the parental land, without a formal sharing having taken place. During this period ─ which can last for years ─ the heirs who do not partake in the use right (typically daughters) because

[14] If someone dies without having expressed a choice of inheritance regime, the default is supposed to be modern law. Nevertheless, if it can be proved that during his or her life, the defunct always behaved according to Islamic precepts, Islamic law can be applied. As a result, Islamic inheritance laws prevail almost universally.

[15] Although some ethnic groups in Senegal are of matrilineal tradition (such as the Lebu-Wolof-Sereer in the country's north and center), such traditions have mostly been displaced by Islam when it comes to material inheritance (Sow, 1992). As a result, inheritance from an adult male other than the father (such as a maternal uncle or foster parent for example) is now a rare occurrence.

they live somewhere else, are not compensated. Although they are, in practice, owners of their share, they cannot cash it in. In this paper, we do not consider pre-mortem gifts as inheritance. These do not appear to be prevalent. Sons may receive some money to help pay the bride price and to settle down upon getting married. However, such transfers are not taken into account in the sharing of inheritance.

As can be seen in Table 1, 72% of deceased fathers left some form of inheritance to their children and 32% left land bequests. In contrast, only 22% of deceased mothers transmitted any inheritance, while 2% left land. Fathers bequeath their wealth to their sons more often than to their daughters, particularly when it is in the form of land. Mothers treated sons and daughters roughly equally in this respect, although they also favored sons with the little land they bequeathed. The Statistical Addendum provides probits for inheritance (both land and any form of inheritance) with a wide range of controls for individual and parental characteristics. Even with these controls, we continue to find that men are more likely to inherit than women. Conditional on the controls, being male adds 0.11 to 0.13 to the conditional probability of receiving any inheritance, while it adds 0.08 to the probability of inheriting land.

The data reveal that very few women (about 2%) have any land to transfer to their heirs when they die, while more than a third of men leave some land. Note that the large discrepancy between the above noted 17% of women reporting that they inherited land and the 2% leaving land is largely explained by the fact that women's land use rights are highly revocable when their marital situations change. A woman loses access to her family land when she marries, and often loses access to her husband's land in the event of widowhood or divorce. She may well also lose control over any land she has inherited over her lifetime. In addition, she has no decision power over its transmission: a deceased woman's land is first returned to her husband (or his family) or to her brothers, and eventually transferred to children only at their father's death.

In these respects, Senegal is not unusual within Sub-Saharan Africa (Cooper 2008, 2010). The rights of women to land are mainly indirect (Platteau et al. 2000) and contingent on marital status. As a daughter living in her father's household, a woman will work on the family land and eventually obtain use rights to a plot. As a wife, she'll work on the land of her husband's family and might also have use rights on her personal plot. If she is in neither of these positions, she simply won't have access to land. This in part explains the high remarriage rate following widowhood or divorce.

The complex nature of households in Senegal ─ reflecting households' extended, multigenerational character, the prevalence of polygamy, as well as of widowhood and divorce followed by widespread remarriage, and of child fostering ─ together with inheritance customs,

means that it is important to control for household structure in explaining the role of inheritance and other factors in intergenerational mobility and interpersonal inequality outcomes. For example, a child's inheritance and how that may affect his outcomes will be a function not only of his gender but likewise of the gender and number of competing siblings as well as whether they share the same father and mother, or just the same mother, or the same father. The interaction of gender and birth order may also play a determining role. We will control for all these factors in our regressions.

Despite net primary schooling rates now reaching 78%, the average education in the adult population is still low. In the sample of cell heads we are using (hence excluding the youngest cohorts who have benefitted from the expansion of schooling), 30% have some formal (non Koranic) education. This is the case for only 11% of those living in rural areas (47% in urban areas). In addition, in rural areas, 75% of people with some education never went beyond primary schooling. The gender gap is also quite sizeable: only 25% of women have ever had any formal schooling, while 35% of men have. The gap increases with the level of education. Less than 40% of women with some education reached at least the secondary level, while this is true for half of the men who attended a formal school. Women in rural areas cumulate both disadvantages and only 8% of them have ever been to a formal school. In all cases our education variable is defined as a dummy for whether the individual has some formal education.

A statistical addendum is available from the authors providing summary statistics on the main PSF variables.

4. Occupational mobility

The first form of intergenerational linkage we consider is in occupations. Do sons of farmers tend to be farmers? What about daughters? Are there links with mothers' occupation? Information was collected on the occupation and education of each parent for each individual. The last place of the mother and father's residence is also known allowing us to know whether an individual resides in the same village as his parents.

Occupation has been classified under four categories: agriculture, non-agriculture, other, or inactive. 'Other' contains individuals who reported that they were active but not employers, wage workers, or self-employed. As their activities are not known to us, we are unable to classify them into farm/non-farm and so have kept them as a separate group.[16] Inactive includes

[16] Our hunch is that this group is made up primarily of marabouts (religious leaders), and others engaged in traditional positions or as traditional social leaders such as griots (village story tellers), traditional healers, circumcisers and midwives.

"housewives," students, and those unable to work due, for example, to disability. Table 2 gives the joint distribution of occupations for parents and their children, for men and women.[17] We find that 36% of individuals had a father working in agriculture, while 22% declare that their mother was in agriculture. It is likely that mothers were identified as housewives even when they did modest agricultural work, so that those who report being in agriculture probably dedicated considerable time to this occupation, suggesting relatively poor households. When the mother is declared a farmer, in 72% of the cases, the father is also in farming. More generally, parents' sectors of activity are highly correlated.

Women have been moving out of an almost exclusive focus on (or self-identification with) household work over time. We find that 38% of sampled women were coded as "inactive" but that this was true of 58% of their mothers. Over one third of those with inactive mothers went into the non-farm sector, with far fewer (13%) going into farming. Very few women have a mother whose occupation is classified as "other," but the reproduction over time is quite strong. Over half of those women are themselves classified in other. This is quite understandable if as we believe, the category consists mostly of traditional non-farm occupations that require skills and possibly reputations built up and transmitted across generations.

Table 2 suggests considerable intergenerational mobility out of farming. Only one third of the one third of men whose father worked in agriculture stayed in the sector, though there is somewhat stronger persistence with respect to mother's sector with 43% of the men (33% of the women) who declared that their mother was working in agriculture doing so as well. One explanation for this is that poorer farm households are both more likely to have had a mother in farming and to be less mobile. Participation in the non-farm sector was more persistent across generations, with nearly three-quarters of those men whose father worked in the non-farm sector being also recorded as working in that sector. A significant amount of persistence is also apparent with respect to "other" for mothers and their sons (74% of sons with mothers in "other" were also classified that way) as well as their daughters (53%).There is little occupational stickiness for fathers engaged in "other" and daughters, although close to half of sons followed in their footsteps.

There seems to be considerable persistence in occupations across generations. How does this compare to other developing countries? A common measure of mobility is the odds ratio

[17] Interviewers were instructed to collect information on parents' last held occupations prior to retirement. Older adults do not typically say they are 'retired' or are not described this way unless they were public servants and receive a pension which is relatively rare. They more typically refer to themselves as being in the occupation they spent the last part of their working lives in. This can pose a problem to measures of occupational mobility since it is not uncommon for older men to return to their natal village and become farmers.

(widely used in quantitative sociology), which has the advantage that it can be compared with similar calculations for other countries. To help assure comparability with Bossuroy and Cogneau (2013) we confine our calculations to the odds ratio given by the ratio of the odds of the son being in the non-farm (*NF*) sector when his father was in that sector to the odds of the son having switched to *NF* when the father was in the farm (*F*) sector.[18] The odds ratio is then:[19]

$$OR = \frac{p(y = NF|x = NF)/[1 - p(y = NF|x = NF)]}{p(y = NF|x = F)/[1 - p(y = NF|x = F)]} \quad (1)$$

Here $p(.)$ denotes the empirical probability of the term in parentheses where $x=k$ denotes that the father is in sector k ($=NF,F$) and $y=k$ denotes this for the son. Table 2 gives the results. The OR for fathers and sons of 5.5 suggests a relatively high degree of mobility. Amongst the nine developing countries for which results are reported in Bossuroy and Cogneau (2013), Senegal is the third most mobile (behind Ghana and Uganda). At the other extreme, India is the least mobile with an odds ratio of 32, clearly reflecting the caste system.

Bossuroy and Cogneau (2013) only give results for fathers and sons, but we can repeat the calculation for mothers and daughters and the cross-effects, as given in Table 2. We find that women are less mobile than men, with a "mothers-daughters" odds ratio of 10.7. We also find that there is more occupational mobility for daughters relative to their father's sector than there is for sons relative to their mother's sector.

5. Intergenerational effects on individual consumption

We regress the log of individualized (cell-specific) consumption expenditure on dummy variables for having inherited land, housing and other assets (finance, consumer durables and physical capital). The regressions also include a large number of control variables to account for the heterogeneity in individual and household characteristics, including parental characteristics. Specifically we control for gender, age and age squared, age at first marriage, whether one is the first born of a given gender among siblings with the same mother and same father, whether one is the first born among all children with the same mother and father, whether the first born sibling from the same mother and father is a boy, number of brothers from the same father and

[18] Our results are not perfectly comparable with Bossuroy and Cogneau because we observe the last occupation of the father and not, as they do, the main occupation during adulthood. As a result, we might count as farmers men who have worked in the urban formal sector during their active life and have returned to their village of origin and to agriculture for their retirement. Our expectation is that this measurement error is likely to bias mobility upward (odds ratio downward).

[19] This can be thought of as an inverse measure of how strong the off-diagonal elements are in the matrix giving the joint distribution of the data for fathers' and sons' occupations, as in Table 2; more precisely, one can re-write *OR* in (1) as the product of the counts of the diagonal elements (*F-F* and *NF-NF*) divided by the product of the off-diagonal counts (*F-NF*, *NF-F*).

mother, number of brothers from the same father only and same mother only, and the same three variables for sisters, ethnic group, being Muslim relative to other religions, having some formal education, whether fostered as a child, and whether fostered at a young age (prior to two years of age, which typically implies a permanent move for the child in the Senegal context). There are also controls for parental characteristics (education, occupation, place of residence, whether the father died in the last two years) and some demographic variables describing the household (log household size) and the individual's cell (log cell size, share of adults and share of children age 5 and under). We begin by following past literature in assuming the exogeneity of inheritance; we test robustness to relaxing this in Section 7.

Tables 3, 4 and 5 give results for (log) cell expenditure per person; recall that this combines the cell-specific expenditures with imputed values for the cell's share of jointly consumed items within the household. Table 3 first presents the coefficients on inheritance estimated without any controls. This is followed by coefficients estimated by adding various correlates, which we do in two steps: adding controls for geographic effects alone, and then adding the controls for individual, household and parental characteristics. We next give results with all controls for the full sample, and for both an urban-rural stratification and gender stratification in Tables 4 and 5.[20]

Without any controls, inheriting land has a strong negative correlation with consumption (Table 3): those who inherited land have consumption that is lower by about 28%.[21] But this is considerably attenuated when one controls for location, reflecting the fact that rural households tend to be both poorer and more likely to inherit land. The negative effect is further reduced with the addition of other controls, remaining close to 7%. Inheriting a house is strongly positively correlated with consumption without controlling for location or other individual and household characteristics. Here again, the effect is reduced, but remains significantly positive when the full set of controls are added (of the order of 7%). Finally, a positive effect of other (non-land, non-housing) forms of inheritance emerges when conditioning on location alone.

This finding of a small negative effect of land in the full sample with controls loses statistical significance in the various strata (urban/rural, male/female and the gender/location interaction) (Tables 4 and 5). Here and elsewhere, we cannot rule out the possibility that the small or insignificant estimated impacts of land inheritance are due to the fact that the variable is

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[20] Given that we control for demographics, using consumption per equivalent adult instead makes little or no difference to the estimates (depending on the functional form of the scale).

[21] As usual, the regression coefficient is the change in log consumption resulting from a unit change in the explanatory variable. Note that if the change in log consumption is x, then the proportionate change in consumption is e^x.

measured as a dummy variable as opposed to land area or value, and hence does not capture sufficient variation. Given our data, we are unable to test this.

Housing inheritance has a positive effect in the full sample and for urban women. The significant effects of other types of inheritance are confined to the urban stratum and to men. When we stratify by the interaction of gender with urban-rural residence, a sharper picture emerges on the adult consumption gains from other forms of inheritance, namely that they are confined to men (Table 5). Recall that we find a sizeable gender gap in consumption. Strikingly, this gender gap in consumption largely vanishes when we add our controls. *Ceteris paribus* then, adult male heads of cells (typically, though not always, the overall household head as well) do not have higher consumption than females (Table 4). Note, however, that our controls include variables such as schooling, which are unequal between genders. So our finding can be interpreted as indicating that the gender gap in consumption can be explained by the gender difference in individual and household characteristics.

Along with the gender differences in characteristics, which (as we have seen) account for the gender disparity in consumption, there are also gender differences in returns to characteristics. A Chow test rejects the null hypothesis of equality of the coefficients across the regressions for men and women ($F(72,1498) = 1.84$; Prob. $> F < 0.00005$).

Both own education and mother's education are significant in the full sample consumption regressions. Strikingly, maternal education has a much stronger effect—a change of 0.17 in log consumption—than paternal education, and this is due to its effect in urban areas and for women.

Other parental characteristics matter. Having a father (but not a mother) who worked in the non-farm sector has a large and significant effect on log consumption of 0.30; having a father in farming has a smaller effect (0.17). (The left out category is inactive.) These effects are stronger for men than for women. It is clear that parental characteristics matter, even though land and housing inheritance do not.

Being fostered out as a child is associated with higher adult consumption; the effect is confined to men, and is stronger for those living in urban areas. This result is consistent with the previously noted fact that the common practice of fostering is often associated with investment in the human capital of the child. Notice, however, that having been fostered out young (under age 2) has an offsetting effect for men. The positive effect on adult welfare is for those who were not fostered young.[22]

[22] See Beck *et al.* (2011) for a detailed discussion of fostering practices in Senegal. On the long term impact of fostering in Senegal see Coppoletta *et. al* (2011).

To throw some light on the costs and benefits to adult offspring of parental sorting by sector and schooling, Table 6 presents the total effect on log consumption of various combinations of fathers' and mothers' characteristics using the full sample estimates. The results suggest that whatever the education of one's parents, having both parents in the non-farm sector yields higher consumption than having both in farming. That is probably what one would expect. However, there is a more surprising and interesting effect of having parents from different sectors. The mixed combination of a father in a non-farm and a mother in a farm-related occupation provides the highest welfare gain to a child at any given combination of parental education—a higher gain than having had both in non-farm activities. This could well reflect longer-term benefits from a more dynamic and diversified family background. But notice that this only holds when it is the father who is in the non-farm sector; the reverse parental combination (father in farming; mother in non-farm work) yields the lowest consumption gain at whatever education combination is considered—even lower than having both parents in farming.

At any given combination of parental occupation, the consumption gains are largest when both parents have had some formal schooling (Table 6). Furthermore, for any parental farm and non-farm occupational combination, having better schooled parents is better for the offspring's adult living standards. Positive parental matching on education is beneficial while positive sorting on sector is not (holding education and all else constant). Finally, mothers' formal education is always more welfare enhancing than fathers' education whatever the parents' combination of occupational sectors.

6. Intergenerational effects on economic activities and geographic mobility

We now turn to the question of how much intergenerational linkages matter to the sector of economic activity and location. Table 7 summarizes the key marginal effects from probits for agricultural self-employment. Again, parental characteristics matter, though in some possibly surprising ways. Having a father in farming does not have a significant effect, but having a mother who was a farmer makes it more likely one will be a farmer. This is so for men and women, but is significantly larger for men in rural areas (consistent with the effect of having a mother in farming on the probability of inheriting land being positive and stronger for men). Having had either parent (and more so a mother) in the non-farm sector makes it less likely one will be a farmer in rural areas, with a far more pronounced effect for men.

Parental schooling effects on the probability of being a farmer seem weak, though for urban men there is a significant negative effect of mother's schooling. Own formal schooling

makes it less likely men will be in farming (particularly urban men), but makes this slightly more likely for urban women.

We find that inheriting land makes farming more likely though this effect is confined to women in rural areas. Endogeneity is a concern here; as women rarely inherit land, those who remained in the same village as their parents and are in farming are more likely to be the ones who inherit land. Inheriting land does not make it more likely that men will be farmers. We find no significant effects of inheriting a house. Other (non-land, non-housing) forms of inheritance are associated with lower probabilities of an adult being in agricultural self-employment. This effect is found in both rural and urban areas, though it is stronger for rural areas (Table 7).

Analogous results for non-farm occupations are found in Table 8. For rural men, having a father in the rural non-farm sector enhances the probability of being in that sector. On the other hand, having a mother who farms or whose occupation is 'other' significantly reduces that likelihood for rural men. A mother in the non-farm sector significantly enhances the probability of an adult working in the non-farm sector, although not for rural women. Higher own schooling increases the probability for men (and it is a larger effect for men in rural areas) but not for women. Fathers' schooling has no influence, while mothers' formal education is positively associated with rural men's off-farm work.

We find no evidence that inheriting land has a significant effect on the likelihood of doing non-farm activities (Table 8) (although, as we will see, this changes when we allow land to be endogenous). However, inheritance of other (non-land, non-housing) assets makes it more likely that women overall, and men and women in urban Senegal, will be employed in the non-farm sector (Table 8).

A number of effects on geographic mobility—identified by whether an adult lives in the same place as his or her parents—are evident in Table 9. Having a farmer for a father makes a child's mobility more likely in the full sample. The effect is much attenuated and only significant at the 10% level for the rural and all male and female samples. Having a father who worked in the non-farm sector has the opposite effect—increasing the likelihood of living in the same place, though the effect is only significant for rural areas, and is larger for rural women. A mother who was engaged in a non-agricultural activity also has a significant effect on living in the same place, but in this case, not for daughters. Children with parents occupied in 'other' are also more likely to be where their parents resided. Having a father with formal schooling makes mobility more likely for urban men; a mother with schooling makes it more likely that rural men will live in the same place as their parents. Own formal schooling makes mobility more likely, though the effect is only significant for men. These results underline the fact that the

intergenerational occupational mobility discussed in the last section implies geographical mobility more often when parents are farmers than when they are in a non-farm activity and hence, less likely to have a rural location.

Inheriting land does not have any significant effect on the probability of moving to a location different from where one's father resided in the sample as a whole (Table 9). However, there is a sign that inheriting land actually encourages such mobility for urban women. Inheriting a house makes it more likely that a man living in rural areas will have the same residence as his parents—in a rather obvious way since the one son who will inherit the house is the one who intends to live in it (or already does)—but there are no other significant effects of this form of inheritance. Nor are there any significant effects of other (non-land, non-housing) inheritance.

7. Tests of robustness

Possibly the effect of inheritance is diluted by including in the sample cell heads whose parents are still alive, and cannot (of course) be a source of inheritance. We tested this possibility by only including cases where either the father or the mother is dead or both were dead. (Details are found in the Statistical Addendum.) In all three cases, the coefficients and standard errors results in Table 3 were very similar. Again we found no significant effect of inheriting land on consumption. There were only minor differences for Table 4.[23]

We also tested sensitivity to allowing for an interaction effect between inheritance and the time since the father died; for those with a dead father, the mean time since death is 22 years (the median is 19). It is not clear on *a priori* grounds what one would expect. The inherited asset may have a positive rate of return allowing for capital accumulation, though other factors may come into play; for example, there were clearly fewer options to farming for those who inherited the land a long time ago. Also, assets (including land) depreciate in value over time. Our tests involved simply adding an interaction effect between inheritance and years since the death of the father to the preceding regressions.[24] For cell consumption per capita, there was a negative interaction effect though only amongst urban men, for which the effect was significant at the 5% level. The total effect was positive up to about 30 years, though not significant even when the

[23] When confined to the sample with the father dead, the positive effect of inheriting a house on consumption remained but only in the urban sample. A positive effect of inheriting a house was found for rural areas in the sample with the mother dead. The effects of maternal characteristics (sector and education) on the probability of being a farmer are stronger when one confines attention to the sample with either parent dead.

[24] If one assumes that the current value per unit of past inheritance is given by $f(t)=[(1+r)(1-d)]^t$ (where r is the rate of return, d is the depreciation rate and t is the number of years since father's death) then the function $f(t)$ can be approximated by a linear function of t with constant parameters if one takes its first-order Taylor series expansion and assumes that r and d are common across all households. However, these are potentially strong assumptions, especially the constancy of returns.

father died recently. For agricultural self-employment the interaction effect was often positive though generally not significant, except for urban men; for non-farm employment the pattern switched, with a negative interaction effect, though again not strong. However, allowing for such an interaction effect does not change our main findings reported above.

Yet another variation is to allow for "cross-effects" of inheritance and education of the spouse (for example, including the inheritance of a woman's husband in the regression for her consumption or economic activity). We found no significant cross-effects of inheritance or education on consumption for either men or women. Nor were there any significant effects of a husband's inheritance on the wife's sector of work.[25] There were signs that a wife's inheritance increased the likelihood of men in rural areas being farmers, and made it more likely that urban men would be inactive. One significant cross-effect was that having an educated husband made mobility more likely for women, as measured by whether she lived in the same village as her parents. This was found in both urban and rural areas.

Another possible concern is that some of our regressors may be considered endogenous. The main results on the effects of inheritance on the various dependent variables were found to be robust to dropping other potentially endogenous variables, namely own-schooling, being fostered as a child and age at first marriage. (The endogeneity concern here is that these variables may be jointly determined with land inheritance.) One change of note is that dropping own education revealed even weaker effects of parental education on sector of employment.

Our assumption that past inheritance is exogenous to current living standards might also be questioned. Choices about who inherits the land may be influenced by factors that are unobserved by us, but observed by the parents or other stakeholders—factors that are also correlated with the economic activity and economic welfare of the child on reaching adulthood. It may be decided by the family group that one of the sons is best suited to taking charge of the family farm on the father's death. This may reflect a latent interest or ability at farming, revealed while growing up. Or it may be that other sons show more aptitude for non-farm work. Parents may also have gender preferences in their choices about inheritance and schooling—choices that are influenced by both market and non-market parameters.[26] Another potential source of endogeneity is the fact that children could possibly decline the inheritance, in particular of land,

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[25] Among those rural women whose husband inherited land, in most cases the husband also had some other form of (non-land, non-housing) inheritance (there were only 27 exceptions, comprising women whose husband only got some other inheritance). This made it impossible to credibly separate these two forms of spousal inheritance for women, so we aggregated them.

[26] For example, using data from the rural Philippines, Estudillo et al. (2001) show how sons are preferred for land inheritance, while daughters are preferred for investments in schooling.

if taking care of it is not compatible with their preferred activity or if, being themselves economically successful, they feel that their siblings have a greater need for it.

In testing the robustness of our results to treating inheritance as endogenous, the key identifying assumption we make is that the death of the father or mother only matters to an individual adult's current economic welfare via inheritance of land or other assets. It is hard to see why parental death sometime in the past would matter to current adult consumption except via inheritance and (hence) wealth. Possibly the shock of parental death will have an impact, but then we control for a father's recent death (within the last two years) in all our regressions.

We can only convincingly treat one inheritance variable as endogenous, solving out other endogenous variables.[27] We do so for any land, excluding other forms of inheritance. We also drop any variables that could be endogenous by the same logic, notably own education. (Parents may decide that one son gets the schooling while the other gets the land.) We also drop fostering and age at marriage for the same reason.

The Statistical Addendum gives the first-stage regressions. Unsurprisingly, the death of either parent significantly increased the probability of inheritance, and the coefficients are considerably higher for paternal death.

Table 10 gives the IV estimates, treating land inheritance as endogenous, for each of the dependent variables.[28] (Note that the estimator is not feasible for the sub-sample for which the father is dead.) Our results on land inheritance are reasonably robust to relaxing the exogeneity assumption. In particular, we still find that land inheritance does not convey any significant consumption benefit.

However, we now find that land inheritance tends to encourage a male only shift from farm to non-farm work, suggesting that there was a downward bias in the earlier estimates. On investigating this effect further we find that it is present for both the sub-samples of men that are heads of households and those that are not, but that it is far stronger in size and only statistically significant for those who are not household heads. Table 11 gives a split of the results for farm and non-farm activities (as well as for the other dependent variables) according to whether or not the cell head is also the overall household head.[29] The IV coefficients on land inheritance in the non-farm regression are 0.133 (s.e.=0.105) for male heads of household as compared to 0.457 (s.e.=0.151) for male non-heads. Likewise, the significant negative impact of inheriting land on

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[27] We tried using death of father and death of mother as two IVs for two inheritance variables (land and other) but these did not have sufficient power for credible identification.

[28] For consumption, we also used the treatment effects model (the "treatreg" estimator in STATA) which uses full maximum likelihood to estimate the effect of an endogenously chosen binary treatment on another endogenous continuous variable, conditional on two sets of independent variables. This gave very similar results.

[29] No such interaction effects were evident for the other dependent variables in Table 11.

being a farmer is only present for non-household heads. The latter sub-sample tends to be comprised of married brothers of household heads. Finally and in line with the above findings, land inheritance also makes it significantly more likely that male heads live where their parents lived, and less likely for non-heads. When land inheritance comes without the responsibilities of headship it appears to be an important factor in encouraging diversification into non-farm activities.

8. Implications for explaining inequality

It is clear from these results that bequests can play little role in perpetuating consumption inequality. However, other parental characteristics clearly do matter, both directly and via a child's characteristics at adulthood, notably education. To quantify the contributions of the various additive factors we have identified above, we follow Shorrocks (1982) in identifying the contribution of the *k*'th explanatory variable to total inequality by its share of variance, with equal sharing of the interaction terms stemming from correlations amongst the factors. (Shorrocks terms this the "natural decomposition" and shows that, under certain conditions, it is also relevant to other inequality measures besides the variance.) Following Fields (2003), when the "income" variable *y* is given by its linear regression on a vector *x*, this gives:

$$c_k = \frac{\beta_k \operatorname{cov}(x_k, y)}{\operatorname{var}(y)} \tag{2}$$

where

$$y_i = \sum_{k=1}^{m} \beta_k x_{ik} \tag{3}$$

And x_{ik} is the *k*'th predictor (x_{im} can be taken to be an error term, with β_m=1). Thus the contribution of the *k*'th explanatory variable to inequality in *y* is simply the product of the partial regression coefficient of *y* on x_k (holding all other variables constant) with the total regression coefficient of x_k on *y* (holding nothing else constant). Note that the decomposition is unchanged if *y* is the log of income (Fields, 2003).

Table 12 presents decompositions of consumption inequality implied by the regressions in Table 4. As expected, the inheritance variables (land, housing or other assets) contribute very little. Far more important to inequality than these forms of inheritance is "own schooling," which contributes 9% to overall consumption inequality (almost one fifth of the explained component) and 11% in urban Senegal. The share is even higher for women but is much lower in rural areas. The father's sector of employment is important, with the incidence of non-farm parental work

contributing almost 6%, while the incidence of farm employment amongst fathers reduced inequality. Demographics, especially cell size and the proportion of adults, also emerge as large contributors to inequality, especially in rural areas. In the national sample, almost half of the explained inequality is attributable to rural-urban location.

9. Conclusions

We find evidence of significant intergenerational linkages in this setting. This is evident in the correlations between parents' and children's sectors of occupation, which persist on adding controls for heterogeneity in other respects. Nonetheless, there is still considerable intergenerational mobility, both across sectors and residentially, primarily associated with the transition from farm to non-farm activities. Only one third of the sons of farmers stayed in farming. Father-son mobility between farm and non-farm sectors is high in Senegal, relative to other developing countries for which comparable estimates are available. And adult women in our sample are far more economically active than were their mothers, although there is still less occupational mobility for women.

Our results suggest that gender plays an important role. There is consumption inequality between men and women, though this is largely accountable to differences in observable factors such as education. The intergenerational linkages through the mother appear to be stronger than through the father, including on the son's economic activity. Educated mothers are more likely to have sons in the non-farm sector. While women with formal schooling are no more likely to be in non-farm employment and (slightly) more likely to be farmers, it is their sons who are more likely to find their way into the non-farm sector.

Assuming conditional exogeneity of inheritance (and with a wide range of controls), inheriting the land makes it more likely that a woman will stay a farmer, but this is not so for men. Inheriting other (non-land, non-housing) assets appears to strongly help get urban women into non-farm work, but the effect is less significant and smaller for urban men and not present in rural areas. However, endogeneity bias might partly account for those results. When we allow for the possible endogeneity of land inheritance by assuming that the death of a parent only matters via inheritance (though allowing for the short-term shock of parental death) we find evidence that land inheritance does play a role in facilitating diversification from farm into non-farm activities, although this is only present for men who do not also inherit the responsibilities of being the overall head of the household. The potential wealth effect of inheritance on activity choice seems to be inhibited by the obligations attendant to household headship.

On average, inheriting the land or house brings no significant gain to an adult's consumption. It appears that intra-household allocation across generations comes fairly close to equalizing consumption between otherwise identical individuals, only one of whom takes on the responsibility for the family's land and housing assets. However, we find that there are significant gains from inheriting other (non-land and non-housing) assets. In particular, formal schooling appears to yield much higher returns.

In short, while intergenerational linkages clearly matter, there still appears to be considerable intergenerational mobility in this setting. Inheritance of land or housing contributes very little to overall inequality, and does not appear to be an important channel for enhancing economic efficiency through transfers of ownership. Non-land inheritance, schooling and parental characteristics (especially the mother's) appear to play a far more important role.

Table 1: Inheritance, by gender

Among individual heads of cells whose father or mother is dead	Men	Women	All	t-test of the difference (women-men)
Father has left any form of inheritance	75.34% (987)	68.26% (974)	71.65%	-4.12
Father has transmitted land to this person	40.61% (588)	24.74% (410)	32.14%	-9.58
Mother has left any form of inheritance	21.23% (173)	22.49% (190)	21.87%	0.62
Mother has transmitted land to this person	2.62 (38)	1.75% (29)	2.16%	-1.67

Note: number of observations in brackets.

Table 2: Sectoral occupational mobility across generations for men and women

No. observations (% of all individuals)	Men					Women				
	Farm	Non-farm	Inactive	Other	Total	Farm	Non-farm	Inactive	Other	Total
Father's occupation										
Farm	219	314	28	76	637	229	276	267	121	893
	(12.41)	(17.79)	(1.59)	(4.31)	(36.09)	(9.74)	(11.73)	(11.35)	(5.14)	(37.97)
Non-farm	53	421	53	27	554	49	403	358	19	829
	(3.00)	(23.85)	(3.00)	(1.53)	(31.39)	(2.08)	(17.13)	(15.22)	(0.81)	(35.25)
Inactive	175	279	50	40	544	107	183	280	41	611
	(9.92)	(15.81)	(2.83)	(2.27)	(30.82)	(4.55)	(7.78)	(11.90)	(1.74)	(25.98)
Other	1	10	5	14	30	1	6	6	6	19
	(0.06)	(0.57)	(0.28)	(0.79)	(1.70)	(0.04)	(0.26)	(0.26)	(0.26)	(0.81)
Total	448	1,024	136	157	1,765	386	868	911	187	2,352
	(25.38)	(58.02)	(7.71)	(8.90)	(100.00)	(16.41)	(36.90)	(38.73)	(7.95)	(100.00)
Cramer's V					0.204					0.194
Odds-ratio (farm and non-farm only)					5.54					6.82
Mother's occupation										
Farm	154	134	13	50	351	187	173	89	104	553
	(8.67)	(7.54)	(0.73)	(2.81)	(19.75)	(7.97)	(7.37)	(3.79)	(4.43)	(23.56)
Non-farm	19	208	20	13	260	22	218	155	14	409
	(1.07)	(11.71)	(1.13)	(0.73)	(14.63)	(0.94)	(9.29)	(6.60)	(0.60)	(17.43)
Inactive	268	684	103	58	1,113	172	476	652	53	1,353
	(15.08)	(38.49)	(5.80)	(3.26)	(62.63)	(7.33)	(20.28)	(27.78)	(2.26)	(57.65)
Other	5	7	2	39	53	4	6	5	17	32
	(0.28)	(0.39)	(0.11)	(2.19)	(2.98)	(0.17)	(0.26)	(0.21)	(0.72)	(1.36)
Total	446	1,033	138	160	1,777	385	873	901	188	2,347
	(25.10)	(58.13)	(7.77)	(9.00)	(100.00)	(16.40)	(37.20)	(38.39)	(8.01)	(100.00)
Cramer's V					0.289					0.265
Odds-ratio (farm andnon-farm only)					12.59					10.71

Table 3: Estimated effects of inheritance on log cell per capita consumption with and without controls

	(1) No controls	(2) Rural location and department dummies	(3) As in (2) + controls for individual and household characteristics
Inherited land	-0.324***	-0.0978**	-0.0740*
	(0.0541)	(0.0430)	(0.0449)
Inherited house	0.196***	0.0733**	0.0736**
	(0.0438)	(0.0361)	(0.0368)
Other inheritance	0.0234	0.0889**	0.0642
	(0.0494)	(0.0424)	(0.0419)
Constant	12.53***	13.01***	12.95***
	(0.0276)	(0.247)	(0.285)
Observations	4,339	4,339	3,392
R^2	0.014	0.325	0.465

Note: Robust standard errors in parentheses, clustered at the household level. *** p<0.01, ** p<0.05, * p<0.1.Controls included in the regression reported in column 3 are: rural location, the cell head's gender, age and age squared, age at first marriage, whether the first born of a given gender among siblings with the same mother and same father, whether the first born among all children with the same mother and father, whether the first born sibling from the same mother and father is a boy, number of brothers from the same father and mother, number of brothers from the same father and same mother only, and the same three variables for sisters, ethnic group, whether Muslim relative to other religions, whether has some formal education, whether fostered as a child, and whether fostered under two years of age; parent's characteristics (education, farm, non-farm or other occupation, last place of residence, whether the father died in the last two years, whether the mother died in the last two years); log household size, log cell size, cell's share of adults and share of children age 5 and under and regional (department) dummies.

Table 4: Regressions for log cell expenditure per capita

	(1) Full sample	(2) Rural	(3) Urban	(4) Men	(5) Women
Male	-0.00550	-0.0400	0.0249	--	--
	(0.0409)	(0.0614)	(0.0564)		
Age	-0.00281	-0.00575	0.00327	0.00602	-0.0148*
	(0.00623)	(0.00755)	(0.00993)	(0.0101)	(0.00829)
Age squared	-2.31e-06	1.56e-06	-2.95e-05	-9.40e-05	0.000139
	(6.24e-05)	(7.56e-05)	(9.89e-05)	(9.50e-05)	(8.74e-05)
Muslim	0.0649	-0.0934	0.123	0.0975	0.0409
	(0.0968)	(0.199)	(0.106)	(0.128)	(0.105)
Serere ethnicity	-0.191***	-0.209*	-0.181***	-0.259***	-0.131*
	(0.0630)	(0.122)	(0.0685)	(0.0845)	(0.0697)
Poular ethnicity	-0.0475	0.0687	-0.104	-0.0828	-0.0139
	(0.0521)	(0.0852)	(0.0646)	(0.0682)	(0.0542)
Diola ethnicity	-0.158	-0.163	-0.111	0.0259	-0.264***
	(0.0995)	(0.373)	(0.102)	(0.154)	(0.0978)
Mandingue ethnicity	-0.110	0.152	-0.256***	-0.175*	-0.0590
	(0.0867)	(0.159)	(0.0804)	(0.102)	(0.0957)
Sarakole ethnicity	-0.0853	0.0782	-0.104	-0.171	-0.00624
	(0.127)	(0.235)	(0.167)	(0.175)	(0.146)
Mandiaque ethnicity	-0.443**	-0.585	-0.390**	-0.181	-0.554***
	(0.181)	(0.380)	(0.193)	(0.217)	(0.200)
Other ethnicity	-0.0103	0.152	-0.128	0.0880	-0.101
	(0.108)	(0.180)	(0.115)	(0.142)	(0.116)
Brothers same father	-0.000649	-0.0113	0.00398	0.000877	-0.00205
	(0.00782)	(0.0106)	(0.0114)	(0.0135)	(0.00969)
Brothers same parents	0.000895	0.00962	-0.00638	0.0159	-0.0134
	(0.00940)	(0.0129)	(0.0132)	(0.0147)	(0.0117)
Sisters same father	0.0114	0.0201*	0.00548	0.00171	0.0200**
	(0.00794)	(0.0121)	(0.0107)	(0.0139)	(0.00980)
Sisters same parents	0.0195**	0.0285**	0.0157	0.0123	0.0306***
	(0.00908)	(0.0142)	(0.0122)	(0.0143)	(0.0117)
Brothers same mother	0.0459**	0.0325	0.0496**	0.0753***	0.0271
	(0.0180)	(0.0317)	(0.0219)	(0.0257)	(0.0230)
Sisters same mother	-0.0287	-0.0246	-0.0251	-0.0374	-0.0246
	(0.0206)	(0.0270)	(0.0294)	(0.0291)	(0.0287)
First same gender	0.00358	0.0408	-0.0323	-0.00374	0.0180
	(0.0321)	(0.0449)	(0.0448)	(0.0604)	(0.0452)
First of siblings	0.0122	-0.0154	0.0463	-0.0337	0.0749
	(0.0382)	(0.0521)	(0.0538)	(0.0661)	(0.0627)
First born is male	0.0561*	0.106**	-0.0113	0.0334	0.0931**
	(0.0310)	(0.0435)	(0.0413)	(0.0628)	(0.0415)
Father died recently	-0.0188	-0.00483	-0.0176	0.0161	-0.0428
	(0.0534)	(0.0760)	(0.0740)	(0.100)	(0.0585)
Father in farming	0.0932**	0.0567	0.123*	0.0672	0.0986**
	(0.0418)	(0.0534)	(0.0660)	(0.0573)	(0.0490)
Mother in farm	-0.0738	-0.0967	0.00610	-0.0922	-0.0672
	(0.0449)	(0.0589)	(0.0669)	(0.0619)	(0.0538)
Father in non-farm	0.168***	0.154**	0.177***	0.198***	0.134***
	(0.0426)	(0.0701)	(0.0560)	(0.0609)	(0.0511)
Mother in non-farm	-0.118***	-0.0516	-0.136**	-0.164**	-0.0793
	(0.0441)	(0.0686)	(0.0574)	(0.0696)	(0.0525)

Father in 'other'	0.400***	0.139	0.573**	0.422**	0.369
	(0.151)	(0.181)	(0.250)	(0.205)	(0.250)
Mother in 'other'	-0.223**	-0.184*	0.0543	-0.186	-0.313*
	(0.0960)	(0.104)	(0.255)	(0.128)	(0.161)
Father's schooling	0.0744	-0.0656	0.0984*	0.152*	0.0356
	(0.0493)	(0.0905)	(0.0561)	(0.0802)	(0.0592)
Mother's schooling	0.165***	0.0987	0.228***	0.0371	0.245***
	(0.0630)	(0.0959)	(0.0816)	(0.0879)	(0.0893)
Father rural	0.00560	-0.0166	-0.0160	0.0498	-0.0292
	(0.0510)	(0.0799)	(0.0667)	(0.0911)	(0.0584)
Mother rural	-0.0659	-0.0394	-0.0707	-0.114	-0.0274
	(0.0515)	(0.0821)	(0.0677)	(0.0909)	(0.0583)
Log hh size	-0.305***	-0.289***	-0.315***	-0.286***	-0.327***
	(0.0362)	(0.0626)	(0.0416)	(0.0487)	(0.0415)
Log cell size	-0.112***	-0.170***	-0.100***	-0.141***	-0.0553
	(0.0271)	(0.0397)	(0.0366)	(0.0505)	(0.0438)
Share of cell aged<5	-0.194**	-0.224*	-0.126	-0.349*	-0.159
	(0.0962)	(0.132)	(0.143)	(0.202)	(0.113)
Share of cell adults	0.438***	0.245**	0.553***	0.381***	0.478***
	(0.0769)	(0.115)	(0.105)	(0.145)	(0.0997)
Has formal schooling	0.274***	0.160**	0.322***	0.229***	0.288***
	(0.0361)	(0.0638)	(0.0438)	(0.0535)	(0.0461)
Fostered	0.102**	0.126*	0.0987	0.159**	0.0256
	(0.0521)	(0.0767)	(0.0714)	(0.0785)	(0.0648)
Fostered young	-0.00118	-0.0452	-0.00601	-0.150	0.117
	(0.0669)	(0.103)	(0.0904)	(0.118)	(0.0828)
Age at first marriage	-7.50e-05	0.00329	-0.00165	-0.00315	0.00450
	(0.00276)	(0.00419)	(0.00362)	(0.00403)	(0.00379)
Inherited land	-0.0740*	-0.0266	-0.0897	-0.102	-0.0366
	(0.0449)	(0.0691)	(0.0586)	(0.0622)	(0.0539)
Inherited house	0.0736**	0.0601	0.0862*	0.0617	0.0883*
	(0.0368)	(0.0614)	(0.0448)	(0.0535)	(0.0452)
Other inheritance	0.0642	0.0330	0.114*	0.159***	-0.0186
	(0.0419)	(0.0558)	(0.0614)	(0.0566)	(0.0508)
Rural	-0.298***	--	--	-0.322***	-0.291***
	(0.0607)			(0.0842)	(0.0653)
Constant	12.95***	13.41***	12.46***	13.69***	13.52***
	(0.285)	(0.484)	(0.326)	(0.512)	(0.366)
Observations	3,392	1,756	1,636	1,479	1,913
R^2	0.465	0.279	0.415	0.471	0.463

Note: Robust standard errors in parentheses, and are clustered at the household level. *** p<0.01, ** p<0.05, * p<0.1. The variables 'First same gender', 'First of siblings' and 'First born is male' all refer to children of the same father, same mother. Regressions also contain regional (department) dummies. The reference variables are Wolof ethnicity, all other religions, occupation 'inactive', share of cell members 5-15, no and non-formal schooling.

Table 5: Regressions for log cell expenditure per capita by gender and rural/urban residence

	(1) Rural men	(2) Rural women	(3) Urban men	(4) Urban women
Age	-0.0110	-0.00852	0.0310**	-0.0216
	(0.0138)	(0.00866)	(0.0148)	(0.0134)
Age squared	2.80e-05	5.68e-05	-0.000290**	0.000245*
	(0.000129)	(8.85e-05)	(0.000140)	(0.000140)
Muslim	-0.261	-0.00343	0.269*	0.0682
	(0.232)	(0.196)	(0.150)	(0.127)
Serere ethnicity	-0.186	-0.237**	-0.271***	-0.0591
	(0.161)	(0.120)	(0.0938)	(0.0925)
Poular ethnicity	0.0758	0.0565	-0.168*	-0.0575
	(0.103)	(0.0914)	(0.0948)	(0.0680)
Diola ethnicity	0.308	-0.394	0.0561	-0.193*
	(0.485)	(0.391)	(0.167)	(0.104)
Mandingue ethnicity	0.238	0.126	-0.414***	-0.160*
	(0.164)	(0.184)	(0.126)	(0.0863)
Sarakole ethnicity	-0.0774	0.285	-0.155	-0.0299
	(0.322)	(0.287)	(0.239)	(0.171)
Mandiaque ethnicity	-0.481	-0.678*	0.00144	-0.477**
	(0.408)	(0.383)	(0.262)	(0.225)
Other ethnicity	0.326	0.0227	0.0234	-0.220*
	(0.209)	(0.198)	(0.166)	(0.129)
Brothers same father	-0.0216	0.00527	0.0154	-0.0113
	(0.0191)	(0.0138)	(0.0191)	(0.0146)
Brothers same parents	0.0341	-0.0161	0.00828	-0.0173
	(0.0233)	(0.0153)	(0.0190)	(0.0172)
Sisters same father	0.0134	0.0215	-0.00529	0.0208
	(0.0199)	(0.0157)	(0.0190)	(0.0134)
Sisters same parents	0.00783	0.0522***	0.00588	0.0244
	(0.0217)	(0.0173)	(0.0188)	(0.0162)
Brothers same mother	0.0401	0.0185	0.0845***	0.0224
	(0.0509)	(0.0392)	(0.0296)	(0.0299)
Sisters same mother	0.0419	-0.0602**	-0.0728**	0.00366
	(0.0686)	(0.0243)	(0.0288)	(0.0467)
First same gender	0.0263	0.0615	0.0461	-0.0491
	(0.0822)	(0.0630)	(0.0864)	(0.0636)
First of siblings	-0.0861	0.0691	-0.0309	0.0769
	(0.0942)	(0.0897)	(0.0964)	(0.0866)
First born is male	0.106	0.152***	0.00555	-0.00539
	(0.0886)	(0.0581)	(0.0894)	(0.0599)
Father died recently	0.0760	-0.0227	-0.00617	-0.0561
	(0.140)	(0.0920)	(0.153)	(0.0752)
Father in farming	-0.0529	0.145**	0.239***	0.00457
	(0.0754)	(0.0607)	(0.0916)	(0.0818)
Mother in farm	-0.0828	-0.0999	-0.0873	0.0945
	(0.0856)	(0.0651)	(0.0891)	(0.0885)
Father in non-farm	0.0849	0.206**	0.279***	0.0802
	(0.0947)	(0.0875)	(0.0795)	(0.0697)
Mother in non-farm	-0.134	0.0652	-0.169*	-0.124*
	(0.101)	(0.0902)	(0.0917)	(0.0668)
Father in 'other'	0.147	0.0268	0.586*	0.398
	(0.240)	(0.232)	(0.322)	(0.386)

Mother in 'other'	-0.119	-0.287	0.401	0.0399
	(0.136)	(0.209)	(0.301)	(0.421)
Father's schooling	-0.242*	0.121	0.230**	0.0305
	(0.142)	(0.112)	(0.0948)	(0.0680)
Mother's schooling	0.0382	0.109	0.0969	0.292***
	(0.158)	(0.143)	(0.117)	(0.111)
Father rural	-0.0790	0.00103	-0.0576	-0.0394
	(0.159)	(0.0894)	(0.110)	(0.0822)
Mother rural	-0.167	0.0439	-0.0132	-0.0626
	(0.165)	(0.0870)	(0.112)	(0.0845)
Log hh size	-0.207**	-0.359***	-0.332***	-0.310***
	(0.0872)	(0.0636)	(0.0537)	(0.0557)
Log cell size	-0.255***	-0.0863	-0.0880	-0.0756
	(0.0776)	(0.0616)	(0.0664)	(0.0606)
Share of cell aged<5	-0.631**	-0.0906	0.123	-0.254
	(0.286)	(0.152)	(0.303)	(0.173)
Share of cell adults	0.104	0.309**	0.602***	0.503***
	(0.218)	(0.137)	(0.196)	(0.148)
Has formal schooling	0.111	0.142	0.278***	0.359***
	(0.0876)	(0.0871)	(0.0704)	(0.0552)
Fostered	0.209*	0.0131	0.181	0.0178
	(0.112)	(0.0953)	(0.118)	(0.0861)
Fostered young	-0.299	0.108	-0.112	0.128
	(0.182)	(0.118)	(0.157)	(0.114)
Age at first marriage	0.00241	0.00461	-0.00861	0.00613
	(0.00641)	(0.00586)	(0.00552)	(0.00501)
Inherited land	-0.0875	0.0363	-0.127	-0.0600
	(0.0898)	(0.0845)	(0.0921)	(0.0697)
Inherited house	0.0298	0.0785	0.105	0.100*
	(0.0799)	(0.0768)	(0.0752)	(0.0576)
Other inheritance	0.176**	-0.100	0.166*	0.0458
	(0.0727)	(0.0636)	(0.0888)	(0.0786)
Constant	14.28***	12.44***	11.78***	13.20***
	(0.811)	(0.534)	(0.530)	(0.384)
Observations	758	998	721	915
R^2	0.292	0.309	0.419	0.413

Note: Robust standard errors in parentheses, clustered at the household level. *** p<0.01, ** p<0.05, * p<0.1. The variables 'First same gender', 'First of siblings' and 'First born is male' all refer to children of the same father, same mother. Regressions also contain regional (department) dummies. The reference variables are Wolof ethnicity, all other religions, occupation 'inactive', share of cell members 5-15, no and non-formal schooling.

Table 6: Returns to log per capita consumption of parental characteristics

	Formal schooling			
	Neither	Father yes/mother no	Father no/mother yes	Both
Same sector				
Both farm	0.019	0.093	0.184	0.258
Both non-farm	0.050	0.124	0.215	0.289
Mixed sectors				
Father farm/ mother non-farm	-0.025	0.049	0.140	0.214
Father non-farm/ mother farm	0.094	0.168	0.259	0.333

Note: Based on the coefficients estimated for total log consumption per capita given in Table 4, Column 1.

Table 7: Marginal effects of inheritance, schooling and parental characteristics on agricultural employment

	(1) All	(2) Rural	(3) Urban	(4) Men	(5) Women	(6) Rural men	(7) Rural women	(8) Urban men	(9) Urban women
Father in farming	0.0169	0.0141	0.00740	0.0120	0.0198	-0.00175	0.0353	0.0218	-0.00463
	(0.0168)	(0.0324)	(0.0104)	(0.0271)	(0.0191)	(0.0485)	(0.0409)	(0.0196)	(0.00294)
Mother in farm	0.0770***	0.116***	0.0175	0.112***	0.0567**	0.192***	0.0692	-0.0209**	0.0500
	(0.0240)	(0.0396)	(0.0185)	(0.0377)	(0.0241)	(0.0588)	(0.0426)	(0.00932)	(0.0313)
Father in non-farm	-0.0235	-0.0765*	-0.00121	-0.0523	-0.0213	-0.180***	-0.0226	0.00792	-0.0109
	(0.0198)	(0.0450)	(0.0103)	(0.0325)	(0.0243)	(0.0653)	(0.0634)	(0.0152)	(0.00724)
Mother in non-farm	-0.0541***	-0.159***	-0.00426	-0.105***	-0.0262	-0.237***	-0.106*	-0.0129	-0.000300
	(0.0208)	(0.0483)	(0.00923)	(0.0325)	(0.0237)	(0.0679)	(0.0588)	(0.0119)	(0.00306)
Father in 'other'	-0.112***	-0.244***	--	-0.142***	--	-0.289**	--	--	--
	(0.0239)	(0.0827)		(0.0451)		(0.118)			
Mother in 'other'	-0.104***	-0.221***	--	-0.150***	-0.0773***	-0.276***	-0.174***	--	--
	(0.0177)	(0.0490)		(0.0276)	(0.0184)	(0.0789)	(0.0578)		
Father's schooling	0.0273	0.0795	-0.00209	0.0200	0.0103	0.0148	0.0803	0.00639	-0.000983
	(0.0301)	(0.0819)	(0.00978)	(0.0516)	(0.0321)	(0.121)	(0.103)	(0.0194)	(0.00279)
Mother's schooling	-0.0147	-0.0963	0.00123	-0.0849*	0.0356	-0.145	-0.0947	-0.0307***	0.0353
	(0.0384)	(0.0776)	(0.0159)	(0.0454)	(0.0530)	(0.107)	(0.0872)	(0.00879)	(0.0275)
Own schooling	-0.0203	-0.0673	-0.00524	-0.0656**	0.0354	-0.0902	0.0136	-0.0542***	0.00835*
	(0.0181)	(0.0451)	(0.00802)	(0.0282)	(0.0243)	(0.0633)	(0.0621)	(0.0170)	(0.00474)
Inherited land	0.0557**	0.0801*	0.00998	0.00373	0.114***	-0.00998	0.171***	0.00312	0.0118
	(0.0218)	(0.0412)	(0.0128)	(0.0304)	(0.0343)	(0.0571)	(0.0643)	(0.0158)	(0.0100)
Inherited house	0.00825	0.0128	0.0148	0.00210	0.0153	-0.0298	0.0769	0.0196	-0.000619
	(0.0180)	(0.0371)	(0.0117)	(0.0273)	(0.0218)	(0.0515)	(0.0528)	(0.0144)	(0.00375)
Inherited other	-0.0404**	-0.0669*	-0.0157**	-0.0402	-0.0255	-0.0519	-0.0438	-0.0142	-0.00492*
	(0.0160)	(0.0343)	(0.00723)	(0.0260)	(0.0186)	(0.0490)	(0.0442)	(0.0114)	(0.00270)
Observations	3,407	1,761	1,565	1,479	1,843	752	957	675	725
Pseudo R^2	0.306	0.222	0.240	0.318	0.348	0.234	0.285	0.314	0.433

Notes: Robust standard errors in parentheses, clustered at the household level; *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported. The regressions include controls listed in Table 3 notes. The 'other' occupation drops out of the urban regressions as it is found only in rural areas.

Table 8: Marginal effects of inheritance, schooling and parental characteristics on non-agricultural employment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Rural	Urban	Men	Women	Rural men	Rural women	Urban men	Urban women
Father in farming	0.0122	-0.00256	0.0333	0.0355	-0.00763	0.0202	-0.0255	0.0330	0.0430
	(0.0273)	(0.0301)	(0.0381)	(0.0373)	(0.0339)	(0.0469)	(0.0340)	(0.0411)	(0.0602)
Mother in farm	-0.0350	-0.0388	0.0275	-0.131***	0.0354	-0.148***	0.0245	-0.0146	0.0493
	(0.0308)	(0.0322)	(0.0464)	(0.0448)	(0.0378)	(0.0497)	(0.0368)	(0.0581)	(0.0686)
Father in non-farm	0.0377	0.106**	-0.00258	0.0979**	0.00573	0.199**	0.0636	0.0383	-0.0144
	(0.0283)	(0.0440)	(0.0334)	(0.0429)	(0.0366)	(0.0774)	(0.0559)	(0.0393)	(0.0506)
Mother in non-farm	0.140***	0.157***	0.133***	0.168***	0.128***	0.222**	0.0961	0.103***	0.144***
	(0.0302)	(0.0544)	(0.0296)	(0.0482)	(0.0379)	(0.0899)	(0.0631)	(0.0328)	(0.0455)
Father in 'other'	-0.111	0.0334	-0.201	-0.0914	-0.134	0.106	--	-0.398*	-0.0866
	(0.113)	(0.122)	(0.172)	(0.175)	(0.108)	(0.152)		(0.214)	(0.188)
Mother in 'other'	-0.201***	-0.173***	0.0144	-0.308***	0.0325	-0.270***	0.0117	-0.129	0.160
	(0.0761)	(0.0432)	(0.250)	(0.107)	(0.145)	(0.0607)	(0.112)	(0.238)	(0.312)
Father's schooling	-0.0303	-0.0765	0.0245	-0.0107	-0.0350	-0.0377	-0.0619	0.0401	-0.000904
	(0.0326)	(0.0549)	(0.0348)	(0.0603)	(0.0384)	(0.118)	(0.0617)	(0.0445)	(0.0493)
Mother's schooling	-0.00922	0.172*	-0.0652	0.0655	-0.0489	0.284**	0.100	-0.0215	-0.0856
	(0.0476)	(0.0889)	(0.0530)	(0.0835)	(0.0510)	(0.124)	(0.106)	(0.0774)	(0.0683)
Own schooling	0.0560**	0.0919**	0.0375	0.166***	0.00599	0.278***	0.0378	0.118***	-0.0172
	(0.0258)	(0.0437)	(0.0290)	(0.0364)	(0.0321)	(0.0682)	(0.0504)	(0.0350)	(0.0412)
Inherited land	-0.0323	-0.0161	0.00446	0.00839	-0.0209	0.0656	-0.0615	-0.0307	0.0576
	(0.0305)	(0.0359)	(0.0434)	(0.0429)	(0.0397)	(0.0566)	(0.0409)	(0.0494)	(0.0604)
Inherited house	0.0225	-0.00491	0.0173	-0.00856	0.0324	-0.0278	0.0152	-0.0163	0.0285
	(0.0269)	(0.0344)	(0.0331)	(0.0382)	(0.0335)	(0.0528)	(0.0441)	(0.0375)	(0.0453)
Inherited other	0.0464*	0.00324	0.121***	0.0170	0.0855**	-0.0120	0.0297	0.0752**	0.174***
	(0.0272)	(0.0316)	(0.0335)	(0.0362)	(0.0354)	(0.0467)	(0.0398)	(0.0341)	(0.0499)
Observations	3,385	1,732	1,646	1,479	1,906	741	974	718	921
Pseudo R^2	0.208	0.154	0.156	0.262	0.175	0.233	0.148	0.148	0.141

Notes: Robust standard errors in parentheses, clustered at the household level; *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported. The regressions include controls listed in Table 3 notes.

Table 9: Marginal effects of inheritance, schooling and parental characteristics on living in the same residence

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	All	Rural	Urban	Men	Women	Rural men	Rural women	Urban men	Urban women
Father in farming	-0.0730***	-0.0541*	-0.0448	-0.0630*	-0.0619*	-0.0296	-0.0483	-0.0412	-0.0643
	(0.0259)	(0.0325)	(0.0522)	(0.0359)	(0.0339)	(0.0200)	(0.0458)	(0.0774)	(0.0667)
Mother in farm	-0.00612	0.00221	0.000699	0.0239	-0.0299	0.0316*	-0.0441	0.00264	0.0229
	(0.0289)	(0.0352)	(0.0649)	(0.0397)	(0.0369)	(0.0189)	(0.0480)	(0.104)	(0.0853)
Father in non-farm	0.0755**	0.125***	0.0438	0.0634*	0.0693*	0.0536***	0.182***	0.0214	0.0451
	(0.0298)	(0.0429)	(0.0427)	(0.0378)	(0.0389)	(0.0170)	(0.0700)	(0.0654)	(0.0535)
Mother in non-farm	0.120***	0.150***	0.105***	0.121***	0.0681*	0.0567***	0.123	0.175**	0.0676
	(0.0297)	(0.0441)	(0.0398)	(0.0385)	(0.0378)	(0.0162)	(0.0817)	(0.0723)	(0.0474)
Father in 'other'	0.192**	--	0.0547	0.0656	0.268**	--	--	-0.117	0.119
	(0.0878)		(0.149)	(0.103)	(0.128)			(0.213)	(0.187)
Mother in 'other'	0.248***	0.131*	0.322**	0.170**	0.249**	0.0461**	0.144	0.116	0.280
	(0.0585)	(0.0747)	(0.127)	(0.0693)	(0.108)	(0.0227)	(0.160)	(0.165)	(0.187)
Father's schooling	-0.0282	0.0846	-0.0667*	-0.0644	-0.0321	0.0248	0.0326	-0.120**	-0.0278
	(0.0360)	(0.0693)	(0.0393)	(0.0514)	(0.0440)	(0.0410)	(0.113)	(0.0606)	(0.0497)
Mother's schooling	0.0740	0.146**	-0.0159	0.0781	0.0249	0.0509***	0.183	0.0182	-0.0531
	(0.0452)	(0.0608)	(0.0554)	(0.0654)	(0.0583)	(0.0171)	(0.113)	(0.119)	(0.0625)
Own schooling	-0.0457*	-0.0606	-0.0698**	-0.0762**	-0.00579	-0.105**	0.0352	-0.107*	-0.0672
	(0.0277)	(0.0536)	(0.0343)	(0.0383)	(0.0356)	(0.0504)	(0.0705)	(0.0581)	(0.0436)
Inherited land	-0.0213	0.0288	-0.0948**	0.0221	-0.0810**	0.0349	0.0244	-0.0574	-0.120**
	(0.0283)	(0.0387)	(0.0419)	(0.0383)	(0.0389)	(0.0233)	(0.0613)	(0.0703)	(0.0556)
Inherited house	0.0459*	0.00788	0.0469	0.0562*	0.0250	0.0408*	-0.0449	0.0618	0.0291
	(0.0245)	(0.0365)	(0.0349)	(0.0321)	(0.0328)	(0.0227)	(0.0563)	(0.0564)	(0.0438)
Inherited other	0.0170	0.0239	0.000188	0.0242	-0.0220	0.0258	-0.00785	0.0282	-0.0218
	(0.0257)	(0.0351)	(0.0422)	(0.0342)	(0.0349)	(0.0211)	(0.0537)	(0.0692)	(0.0537)
Observations	3,407	1,736	1,646	1,436	1,921	701	994	702	921
Pseudo R^2	0.180	0.279	0.330	0.346	0.109	0.366	0.183	0.426	0.309

Notes: Robust standard errors in parentheses, clustered at the household level; *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported. The regressions include controls listed in Table 3 notes.

Table 10: IV estimates for all dependent variables for the total, men only and women only samples.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Log per cap expenditures			Farm employment			Non-farm			Same residence as parents		
	All	Men	Women	All	Men	Women	All	Men	Women	All	Men	Women
Inherited land	0.119	0.0475	0.214	-0.0394	-0.159**	0.0510	0.124**	0.178**	0.0650	0.0373	0.0756	-0.0316
	(0.110)	(0.151)	(0.164)	(0.0449)	(0.0714)	(0.0602)	(0.0611)	(0.0856)	(0.0914)	(0.0614)	(0.0751)	(0.0934)
Father in farming	0.0849**	0.0537	0.0955**	0.0103	0.00758	0.0167	0.0192	0.0364	0.000268	-0.0589***	-0.0404*	-0.0636**
	(0.0404)	(0.0568)	(0.0474)	(0.0195)	(0.0289)	(0.0226)	(0.0218)	(0.0305)	(0.0277)	(0.0209)	(0.0239)	(0.0304)
Mother in farming	-0.0811*	-0.0840	-0.0936*	0.0965***	0.113***	0.0791***	-0.0333	-0.105***	0.0221	-0.00340	0.0230	-0.0235
	(0.0440)	(0.0631)	(0.0523)	(0.0248)	(0.0346)	(0.0285)	(0.0239)	(0.0358)	(0.0300)	(0.0239)	(0.0280)	(0.0328)
Father in non-farm	0.210***	0.226***	0.181***	-0.0217	-0.0651**	-0.0135	0.0575**	0.122***	0.0241	0.0668***	0.0552*	0.0648*
	(0.0442)	(0.0626)	(0.0547)	(0.0172)	(0.0291)	(0.0201)	(0.0238)	(0.0359)	(0.0326)	(0.0253)	(0.0317)	(0.0354)
Mother in non-farm	-0.0980**	-0.135**	-0.0678	-0.0285*	-0.0695**	-0.0235	0.108***	0.105***	0.113***	0.106***	0.118***	0.0609*
	(0.0436)	(0.0679)	(0.0533)	(0.0157)	(0.0283)	(0.0185)	(0.0247)	(0.0372)	(0.0336)	(0.0256)	(0.0327)	(0.0346)
Father's schooling	0.170***	0.263***	0.129**	0.0138	0.0109	0.00273	-0.0175	0.00455	-0.0240	-0.0114	-0.0430	-0.00684
	(0.0503)	(0.0784)	(0.0610)	(0.0152)	(0.0277)	(0.0177)	(0.0262)	(0.0395)	(0.0357)	(0.0296)	(0.0383)	(0.0381)
Mother's schooling	0.193***	0.0571	0.278***	0.00894	-0.0399	0.0293	-0.0210	0.0420	-0.0618	0.0543	0.0764	0.0140
	(0.0638)	(0.0974)	(0.0863)	(0.0248)	(0.0432)	(0.0264)	(0.0373)	(0.0607)	(0.0453)	(0.0361)	(0.0503)	(0.0492)
Constant	13.73***	12.97***	13.79***	0.149	0.789***	0.537***	0.386**	0.0374	0.201	0.608***	0.623***	0.752***
	(0.308)	(0.412)	(0.363)	(0.197)	(0.161)	(0.148)	(0.197)	(0.179)	(0.135)	(0.135)	(0.210)	(0.228)
Observations	3,571	1,554	2,017	3,587	1,561	2,026	3,587	1,561	2,026	3,587	1,561	2,026
R^2	0.449	0.461	0.437	0.286	0.306	0.326	0.242	0.278	0.212	0.218	0.393	0.147

Notes: Linear IV coefficients for (4)-(12). Robust standard errors in parentheses, clustered at household level; *** p<0.01, ** p<0.05, * p<0.1. The regressions exclude own education, whether fostered and age at first marriage; other controls are as listed in Table 3 notes.

Table 11: IV estimates for all dependent variables for the sample of men only

	(1)	(2)	(3)	4)	(5)	(6)	(7)	(8)
	Log expenditure per capita		Farm employment		Non-farm employment		Same residence as parents	
	Heads	Non-heads	Heads	Non-heads	Heads	Non-heads	Heads	Non-heads
Inherited land	0.168	-0.307	-0.127	-0.283**	0.133	0.457***	0.224**	-0.200*
	(0.200)	(0.261)	(0.0896)	(0.115)	(0.105)	(0.151)	(0.107)	(0.111)
Father in farming	0.0950	-0.154	0.00702	-0.0133	0.0278	0.115	-0.0504*	-0.0463
	(0.0654)	(0.119)	(0.0306)	(0.0650)	(0.0330)	(0.0808)	(0.0275)	(0.0566)
Mother in farming	-0.137**	0.272*	0.0512	0.305***	-0.0676*	-0.210**	0.0297	0.0134
	(0.0698)	(0.146)	(0.0351)	(0.0861)	(0.0378)	(0.0985)	(0.0314)	(0.0744)
Father in non-farm	0.309***	-0.0705	-0.0717**	-0.0784	0.0907**	0.330***	0.0483	0.0387
	(0.0716)	(0.146)	(0.0321)	(0.0612)	(0.0391)	(0.0885)	(0.0378)	(0.0641)
Mother in non-farm	-0.105	-0.0622	-0.0803**	-0.0459	0.128***	0.0409	0.112**	0.119**
	(0.0828)	(0.110)	(0.0353)	(0.0451)	(0.0440)	(0.0699)	(0.0435)	(0.0464)
Father's schooling	0.331***	0.0554	0.0423	-0.0976*	-0.00891	0.0890	-0.0566	-0.0118
	(0.0991)	(0.119)	(0.0329)	(0.0512)	(0.0451)	(0.0939)	(0.0501)	(0.0616)
Mother's schooling	-0.0147	0.258*	-0.0658	-0.000177	0.0688	-0.00361	0.0863	-0.00846
	(0.122)	(0.153)	(0.0504)	(0.0590)	(0.0662)	(0.116)	(0.0678)	(0.0717)
Constant	13.73***	13.26***	0.199	-0.245	0.431	0.110	0.938***	0.931***
	(0.483)	(0.856)	(0.245)	(0.361)	(0.278)	(0.574)	(0.209)	(0.328)
Observations	1,193	361	1,198	363	1,198	363	1,198	363
R^2	0.451	0.505	0.327	0.452	0.309	0.340	0.372	0.358

Notes: Linear IV coefficients for (3)-(8). Robust standard errors in parentheses, clustered at the household level; *** p<0.01, ** p<0.05, * p<0.1. The regressions exclude own education, whether fostered and age at first marriage; other controls are as listed in Table 3 notes.

Table 12: Inequality decomposition for log consumption per person implied by Table 4

	Share of inequality attributable to each source (%):				
	All	Rural	Urban	Men	Women
Male	-0.07	-1.03	0.60	--	--
Age	-0.65	0.39	1.11	-0.07	-2.81
Age squared	0.05	-0.05	-0.89	0.66	2.44
Muslim	-0.05	-0.11	0.00	-0.11	-0.03
Serere	0.79	3.40	-0.28	1.14	0.54
Poular	0.26	0.63	1.02	0.84	0.03
Diola	0.04	0.94	-0.01	0.02	0.30
Mandingue	0.25	-0.10	1.10	0.55	0.07
Sarakole	-0.06	0.41	-0.06	-0.08	-0.01
Mandiaque	0.05	0.91	0.36	-0.09	0.32
Other ethnicity	-0.01	0.36	-0.08	0.17	0.00
Brothers same father	0.001	-0.08	0.19	0.09	-0.03
Brothers same parents	0.01	0.26	0.00	0.43	0.00
Sisters same father	0.39	0.62	0.24	0.01	0.82
Sisters same parents	0.34	0.70	0.20	0.15	0.91
Brothers same mother	0.55	0.44	0.52	0.87	0.38
Sisters same mother	-0.17	0.12	-0.08	-0.12	-0.26
First same gender	0.004	0.03	-0.02	0.01	0.06
First of siblings	0.06	0.00	0.36	-0.05	0.36
First born is male	0.34	2.04	-0.08	0.06	0.03
Father dead recently	0.01	0.03	0.02	0.01	0.04
Father in farming	-1.60	-0.50	-0.87	-0.84	-2.12
Mother in farming	1.42	2.74	-0.04	1.49	1.48
Father in non-farm	4.45	1.19	3.41	4.90	4.03
Mother in non-farm	-0.48	-0.01	0.68	-0.15	-0.64
Father in ‘other’	0.02	-0.27	1.01	-0.28	0.15
Mother in ‘other’	0.65	0.96	-0.03	0.80	0.67
Father’s schooling	1.08	-0.08	1.59	2.17	0.57
Mother’s schooling	1.08	0.33	1.99	0.10	2.61
Father rural	-0.23	0.04	0.20	-1.83	1.20
Mother rural	2.46	0.13	0.74	4.07	1.15
Log hh size	13.82	17.98	19.20	13.95	13.87
Log cell size	4.16	13.65	5.83	4.75	1.28
Share of cell aged<5	1.59	3.04	1.29	2.13	1.03
Share of cell adults	9.25	8.99	14.39	5.47	8.62
Has formal schooling	9.02	1.27	11.02	6.92	9.76
Fostered	0.65	0.47	0.79	0.79	0.19
Fostered young	-0.001	0.01	-0.02	-0.29	0.51
Age at first marriage	-0.07	0.98	-0.56	-0.55	0.91
Inherited land	0.60	-0.07	0.38	1.80	0.16
Inherited house	0.45	0.32	0.66	-0.15	0.92
Other inheritance	0.03	0.10	1.04	-0.47	-0.01
Rural	14.43	--	--	15.25	14.88
Total share explained	46.50	27.90	41.50	47.00	46.20

Note: The sources do not add to the total share explained due to the omission of the share of inequality due to department of residence.

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Statistical Addendum

Intergenerational Mobility and Interpersonal Inequality in an African Economy

Sylvie Lambert, Martin Ravallion and Dominique van de Walle

To further explore the characteristics of those who inherit, Table A2 gives probits for any form of inheritance, while Table A3 gives probits for land inheritance in particular; in both cases we present the marginal effects. We also provide the breakdown by gender. We show two specifications, the second of which drops a number of variables that might be considered endogenous to inheritance. (Later we will use these pruned regressions as the first stage for an instrumental variables estimator.) While the causal interpretation of the first regression (including the endogenous variables) can be questioned, it is still of descriptive interest.

We include a wide range of controls in these regressions (and those reported later), including: gender, age and age squared, age at first marriage, whether one is the first born of a given gender among siblings with the same mother and same father, whether one is the first born among all children with the same mother and father, whether the first born sibling from the same mother and father is a boy, number of brothers from the same father and mother, number of brothers from the same father only and same mother only, and the same three variables for sisters, ethnic group, being Muslim relative to other religions, having some formal education, whether fostered as a child, and whether fostered at a young age (prior to two years of age, which typically implies a permanent move for the child in the Senegal context). There are also controls for parental characteristics (education, occupation, place of residence, whether the father died in the last two years, and whether the mother did so) and some demographic variables describing the household (log household size) and the individual's cell (log cell size, share of adults and share of children age 5 and under).

We continue to find that men are more likely to inherit than women, even with the controls. Conditional on the included controls, being male adds 0.11 to 0.13 to the conditional probability of receiving any inheritance, while it adds 0.08 to the probability of inheriting land.

Unsurprisingly, the death of either parent increases the probability of inheritance, and the coefficients are considerably higher for paternal death. In the full sample, death of the father alone adds 0.67 to the probability of inheritance, while death of the mother adds only 0.13; with respect to land inheritance the probability is increased by 0.32 by a deceased father, but only by

0.03 by a deceased mother. This later estimate reflects the previously noted fact that at a woman's death, her land is returned to her husband (or brothers) first. By contrast, children inherit from their father at his death, whether or not their mother is still alive. These effects are significant across almost all strata and specifications, the only exception being that death of the mother is not a significant predictor of land inheritance by women. The effect of a father's recent death dampens the large "father dead" effect for any inheritance (bringing it down from 0.67 to 0.54, when the mother is still alive). This is consistent with our casual observations from interviews that inheritance, particularly of the house and non-land assets, is typically delayed.[1] The dampening effect is much lower for land inheritance and significant only for men.

There is a positive coefficient on education in the regressions for any inheritance, which suggests complementarity rather than substitution by parents between formal schooling and inheritance (whereby some children get some form of inheritance while others get formal schooling as hypothesized by Quisumbing et al. 2004). However, there is some sign of such substitution for land inheritance, though it is only statistically significant for women; those women with formal schooling are less likely to inherit land. Depending on the timing of parents' death, this might reflect the individual choice of an educated woman with a non-farm economic activity to give up her land inheritance to the benefit of her siblings, rather than a parental decision to substitute one form of transmission for another.

Men who were fostered as boys are more likely to inherit land unless they were fostered before age two. This pattern is plausible. Fostering out a very young child is suggestive of giving away the child (for example to a childless parent), which is an indication that inheritance is unlikely. By contrast, fostering an older child is in general less permanent and more suggestive of an investment in the child, which would also suggest that inheritance is more likely.[2] None of these effects are statistically significant for girls.

Having a mother active in the non-farm sector significantly increases the probability of any inheritance for men although not for women. For land inheritance, paternal activity in farm work has no effect, but maternal farm work has a positive correlation with men's, and less so women's, land inheritance. This could reflect the fact that a mother in farming suggests a greater availability of land for the parental household. The father's non-farm activity matters but negatively ─ significantly reducing the likelihood of inheriting land for both genders. In fact,

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[1] This is due in part to the difficulty of distributing the inheritance – much of which consists of the dwelling, is lumpy – across the extended kinship group.

[2] See Beck *et al.* (2011) for a detailed discussion of fostering practices in Senegal.

symmetrically to the previous result, a father's involvement in a non-farm activity reduces the likelihood that the household has control over any land at all.

Finally, the number of siblings of the opposite gender is significantly associated with inheriting from one's parents. For men a positive effect on land and on any inheritance is related to the number of sisters from the same father, whether or not they also share their mother (i.e same father or same parents).[3] This is in accordance with traditional results on siblings rivalry, suggesting that, if boys are favored with respect to inheritance, controlling for the number of siblings, a higher share of sisters is beneficial to men. For women, the number of brothers from the same mother reduces the likelihood of getting any inheritance while more brothers from the same father has a significant but very small positive influence on land inheritance.[4] Brothers with the same mother may well compete with girls for the inheritance of their mother's personal assets.

Controlling for these other variables, there is little sign that the probability of inheritance is different between urban and rural areas for men. However, women's probability of any inheritance is lower in rural areas.

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[3] "Sibling from same parents" means that the siblings share both parents. By contrast, "sibling from the same father" means that the father is common, but not the mother (and conversely for "sibling from the same mother").

[4] These correlations bring to mind the literature on sibling rivalry in Africa and the role of siblings of the opposite sex in determining outcomes (for ex., Garg and Morduch 1998).

Table A1: Descriptive Statistics for cell heads

Variable	Obs.	Mean	Std. Dev.	Min	Max
Log cell consumption per capita	4339	12.528	1.017	9.932	18.059
In farming	4365	0.196	0.397	0	1
In non-farm	4365	0.454	0.498	0	1
In other	4365	0.084	0.277	0	1
Same residence as parents	4365	0.539	0.499	0	1
Male	4365	0.429	0.495	0	1
Age	4360	42.594	14.931	2	98
Muslim	4365	0.948	0.221	0	1
Serere ethnicity	4352	0.130	0.336	0	1
Poular ethnicity	4352	0.283	0.450	0	1
Diola ethnicity	4352	0.046	0.210	0	1
Mandingue ethnicity	4352	0.062	0.241	0	1
Sarakole ethnicity	4352	0.027	0.162	0	1
Mandiaque ethnicity	4352	0.012	0.110	0	1
Other ethnicity	4352	0.039	0.193	0	1
Brothers same father (no.)	4313	1.671	2.319	0	21
Brothers same parents (no.)	4320	1.984	1.648	0	11
Sisters same father (no.)	4309	1.533	2.239	0	17
Sisters same parents (no.)	4321	1.945	1.690	0	14
Brothers same mother (no.)	4314	0.317	0.888	0	10
Sisters same mother (no.)	4313	0.290	0.856	0	10
First born same gender	4365	0.470	0.499	0	1
First born of siblings	4365	0.294	0.456	0	1
First born is male	4271	0.568	0.495	0	1
Father dead recently	4365	0.075	0.263	0	1
Father in farming	4365	0.354	0.478	0	1
Mother in farming	4365	0.208	0.406	0	1
Father in non-farm	4365	0.320	0.466	0	1
Mother in non-farm	4365	0.155	0.362	0	1
Father in ‘other’	4365	0.011	0.106	0	1
Mother in ‘other’	4365	0.020	0.139	0	1
Father’s schooling	4365	0.117	0.321	0	1
Mother’s schooling	4365	0.056	0.231	0	1
Father rural	3896	0.599	0.490	0	1
Mother rural	3968	0.589	0.492	0	1
Log hh size	4365	2.122	0.700	0	3.784
Log cell size	4365	0.967	0.694	0	2.708
Share of cell members aged<5	4365	0.144	0.213	0	0.800
Share of adults in cell	4365	0.651	0.315	0	1
Has formal education	4365	0.292	0.455	0	1
Fostered	4365	0.162	0.368	0	1
Fostered young	4365	0.079	0.269	0	1
Age at first marriage	4080	22.614	6.827	6	65
Inherited land	4365	0.233	0.423	0	1
Inherited house	4365	0.338	0.473	0	1
Otherinheritance	4365	0.216	0.411	0	1
Rural	4365	0.487	0.500	0	1
Father dead	4337	0.661	0.473	0	1
Mother dead	4277	0.402	0.490	0	1

Notes: The statistics are population weighted. The variables ‘First born same gender’, ‘First born of siblings’ and ‘First born is male’ all refer to children of the same father, same mother.

Table A2: Marginal determinants of the probability of any inheritance

	All		Men		Women	
Male	0.110***	0.125***	--	--	--	--
	(0.0319)	(0.0250)				
Age	-0.00483	-0.00273	0.00590	0.00678	-0.00419	-0.00269
	(0.00472)	(0.00426)	(0.00753)	(0.00696)	(0.00567)	(0.00523)
Age squared	4.71e-05	2.56e-05	-5.81e-05	-6.72e-05	4.06e-05	2.13e-05
	(4.46e-05)	(4.09e-05)	(6.89e-05)	(6.45e-05)	(5.62e-05)	(5.24e-05)
Muslim	0.164***	0.162***	0.180*	0.157	0.162***	0.170***
	(0.0542)	(0.0509)	(0.0966)	(0.0954)	(0.0507)	(0.0441)
Serere ethnicity	-0.0844**	-0.0800**	-0.0728	-0.0647	-0.100**	-0.0956**
	(0.0385)	(0.0366)	(0.0622)	(0.0594)	(0.0413)	(0.0391)
Poular ethnicity	0.00432	0.00590	0.0396	0.0310	-0.0311	-0.0130
	(0.0356)	(0.0343)	(0.0499)	(0.0488)	(0.0406)	(0.0395)
Diola ethnicity	-0.00781	-0.00120	-0.101	-0.0864	0.0523	0.0549
	(0.0772)	(0.0734)	(0.0982)	(0.0958)	(0.0909)	(0.0858)
Mandingue ethnicity	0.0181	0.0111	0.0326	0.00838	-0.0141	-0.00501
	(0.0501)	(0.0487)	(0.0771)	(0.0758)	(0.0533)	(0.0519)
Sarakole ethnicity	0.0464	0.0658	0.0920	0.132	0.0111	0.0155
	(0.103)	(0.0996)	(0.136)	(0.125)	(0.121)	(0.119)
Mandiaque ethnicity	0.0913	0.0726	0.182	0.166	0.0351	0.0425
	(0.167)	(0.159)	(0.218)	(0.225)	(0.160)	(0.150)
Other ethnicity	-0.131**	-0.131**	-0.167*	-0.182*	-0.103	-0.0926
	(0.0640)	(0.0602)	(0.0975)	(0.0942)	(0.0728)	(0.0696)
Brothers same father	0.000819	0.00107	-0.00473	-0.00532	0.00780	0.00817
	(0.00653)	(0.00638)	(0.0105)	(0.0104)	(0.00785)	(0.00750)
Brothers same parents	-0.00323	-0.00281	-0.0129	-0.0108	0.000203	0.000777
	(0.00710)	(0.00686)	(0.0116)	(0.0113)	(0.00869)	(0.00821)
Sisters same father	0.0229***	0.0225***	0.0343***	0.0379***	0.0133*	0.0106
	(0.00681)	(0.00661)	(0.0112)	(0.0110)	(0.00796)	(0.00761)
Sisters same parents	0.0154**	0.0172**	0.0259**	0.0264**	0.00998	0.0111
	(0.00727)	(0.00724)	(0.0114)	(0.0109)	(0.00874)	(0.00867)
Brothers same mother	-0.0238*	-0.0219*	0.000834	0.00442	-0.0395**	-0.0388**
	(0.0138)	(0.0131)	(0.0246)	(0.0231)	(0.0172)	(0.0163)
Sisters same mother	-0.0100	-0.0127	-0.0342	-0.0361	0.000391	-0.00178
	(0.0144)	(0.0137)	(0.0247)	(0.0232)	(0.0172)	(0.0164)
First same gender	0.0257	0.0219	-0.0494	-0.0496	0.0622*	0.0645*
	(0.0278)	(0.0270)	(0.0521)	(0.0515)	(0.0363)	(0.0347)
First of siblings	-0.000272	-0.00876	0.0302	0.0322	-0.0228	-0.0409
	(0.0308)	(0.0298)	(0.0581)	(0.0575)	(0.0440)	(0.0417)
First born is male	0.0369	0.0322	0.0746	0.0600	0.0220	0.0103
	(0.0225)	(0.0219)	(0.0471)	(0.0460)	(0.0304)	(0.0291)
Father died recently	-0.134***	-0.140***	-0.237***	-0.248***	-0.0828**	-0.0779**
	(0.0344)	(0.0325)	(0.0607)	(0.0545)	(0.0375)	(0.0366)
Father is dead	0.671***	0.664***	0.739***	0.732***	0.630***	0.621***
	(0.0147)	(0.0144)	(0.0199)	(0.0195)	(0.0187)	(0.0185)
Mother is dead	0.127***	0.133***	0.110**	0.130***	0.139***	0.138***

	(0.0269)	(0.0264)	(0.0434)	(0.0421)	(0.0321)	(0.0314)
Father in farming	-0.0210	-0.0146	0.0400	0.0474	-0.0426	-0.0392
	(0.0291)	(0.0282)	(0.0430)	(0.0416)	(0.0341)	(0.0331)
Mother in farm	0.0518	0.0588*	0.0258	0.0228	0.0641	0.0731*
	(0.0338)	(0.0330)	(0.0524)	(0.0514)	(0.0408)	(0.0397)
Father in non-farm	0.0330	0.0460	-0.00540	0.0121	0.0574	0.0651*
	(0.0330)	(0.0320)	(0.0490)	(0.0477)	(0.0405)	(0.0390)
Mother in non-farm	0.0920**	0.0818**	0.123**	0.119**	0.0588	0.0484
	(0.0362)	(0.0351)	(0.0510)	(0.0501)	(0.0439)	(0.0414)
Father in 'other'	-0.0138	-0.0183	0.0648	0.0560	-0.112	-0.107
	(0.109)	(0.103)	(0.124)	(0.123)	(0.135)	(0.122)
Mother in 'other'	0.0355	0.0227	-0.0786	-0.0867	0.127	0.112
	(0.0825)	(0.0801)	(0.102)	(0.100)	(0.128)	(0.126)
Father's schooling	0.0220	0.0264	0.0682	0.0877	0.00642	0.00123
	(0.0395)	(0.0377)	(0.0598)	(0.0575)	(0.0466)	(0.0441)
Mother's schooling	-0.0246	0.00139	-0.156**	-0.115	0.0332	0.0540
	(0.0491)	(0.0489)	(0.0736)	(0.0726)	(0.0603)	(0.0591)
Father rural	-0.0293	-0.0415	-0.113	-0.152**	0.0146	0.0165
	(0.0465)	(0.0452)	(0.0748)	(0.0725)	(0.0518)	(0.0508)
Mother rural	0.0680	0.0669	0.172**	0.174**	0.0196	0.0147
	(0.0457)	(0.0440)	(0.0754)	(0.0737)	(0.0509)	(0.0494)
Log hh size	0.00423	0.00849	0.0284	0.0253	-0.0140	-0.0147
	(0.0216)	(0.0198)	(0.0331)	(0.0303)	(0.0249)	(0.0234)
Log cell size	0.0469**	0.0426*	0.0711*	0.0671*	0.00828	0.0189
	(0.0232)	(0.0220)	(0.0379)	(0.0364)	(0.0312)	(0.0297)
Share of cell aged<5	-0.00584	-0.00368	-0.0423	-0.0339	-0.00915	-0.0266
	(0.0792)	(0.0748)	(0.161)	(0.154)	(0.0863)	(0.0813)
Share of cell adults	0.0184	0.0173	0.0767	0.0567	-0.0371	-0.0171
	(0.0592)	(0.0568)	(0.107)	(0.104)	(0.0718)	(0.0682)
Has formal schooling	0.0605**	--	0.0897**	--	0.0475	--
	(0.0294)		(0.0425)		(0.0381)	
Fostered	0.00479	--	-0.00501	--	-0.00848	--
	(0.0396)		(0.0552)		(0.0564)	
Fostered young	0.0238	--	0.0686	--	-0.0113	--
	(0.0533)		(0.0876)		(0.0644)	
Age at first marriage	0.00155	--	0.00362	--	-0.00240	--
	(0.00222)		(0.00325)		(0.00283)	
Rural	-0.00245	-0.0173	0.0936	0.0808	-0.0861*	-0.0878*
	(0.0474)	(0.0450)	(0.0702)	(0.0661)	(0.0520)	(0.0494)
No. Observations	3,383	3,587	1,478	1,561	1,905	2,026
Pseudo R^2	0.369	0.372	0.403	0.402	0.374	0.378

Note: Robust standard errors in parentheses, clustered at the household level; *** p<0.01, ** p<0.05, * p<0.1. The variables 'First same gender', 'First of siblings' and 'First born is male' all refer to children of the same father, same mother. The regression also includes department fixed effects. The reference variables are Wolof ethnicity, all other religions, occupation 'inactive', share of cell members 5-15, no and non-formal schooling.

Table A3: Marginal determinants of the probability of land inheritance (also used as first stage regressions for IV estimators)

	All		Men		Women	
Male	0.0814***	0.0840***	--	--	--	--
	(0.0182)	(0.0150)				
Age	-0.00462*	-0.00433*	7.91e-05	-0.00293	-0.00447**	-0.00350*
	(0.00262)	(0.00230)	(0.00513)	(0.00485)	(0.00221)	(0.00186)
Age squared	4.93e-05**	4.82e-05**	9.50e-06	3.65e-05	4.36e-05**	3.78e-05**
	(2.45e-05)	(2.18e-05)	(4.61e-05)	(4.39e-05)	(2.16e-05)	(1.86e-05)
Muslim	0.0501**	0.0506**	0.0665	0.0622	0.0402***	0.0381***
	(0.0224)	(0.0202)	(0.0487)	(0.0516)	(0.0142)	(0.0118)
Serere ethnicity	0.0313	0.0171	0.0974*	0.0616	-0.000391	-0.00362
	(0.0243)	(0.0216)	(0.0509)	(0.0466)	(0.0177)	(0.0147)
Poular ethnicity	-0.00435	-0.00777	0.0293	0.00781	-0.0181	-0.01000
	(0.0180)	(0.0168)	(0.0347)	(0.0337)	(0.0145)	(0.0129)
Diola ethnicity	0.0475	0.0340	0.0159	0.0115	0.0598	0.0400
	(0.0552)	(0.0497)	(0.0790)	(0.0800)	(0.0588)	(0.0482)
Mandingue ethnicity	0.0320	0.0259	0.0611	0.0319	0.00378	0.00915
	(0.0312)	(0.0288)	(0.0601)	(0.0568)	(0.0225)	(0.0207)
Sarakole ethnicity	0.00110	-0.0101	0.0919	0.0278	-0.0237	-0.0163
	(0.0494)	(0.0423)	(0.124)	(0.101)	(0.0238)	(0.0229)
Mandiaque ethnicity	0.179	0.154	0.413	0.368	0.0713	0.0527
	(0.198)	(0.175)	(0.296)	(0.296)	(0.117)	(0.0940)
Other ethnicity	-0.0438	-0.0377	-0.0234	-0.0384	-0.0395**	-0.0299*
	(0.0293)	(0.0285)	(0.0674)	(0.0633)	(0.0154)	(0.0153)
Brothers same father	0.00739**	0.00623**	0.00837	0.00623	0.00672**	0.00551**
	(0.00325)	(0.00309)	(0.00673)	(0.00674)	(0.00287)	(0.00251)
Brothers same parents	-5.29e-06	-0.00175	-0.00145	-0.00374	-0.00101	-0.00127
	(0.00393)	(0.00371)	(0.00841)	(0.00822)	(0.00346)	(0.00303)
Sisters same father	0.00251	0.00499	0.0112	0.0176**	-0.00114	-0.000253
	(0.00339)	(0.00325)	(0.00691)	(0.00730)	(0.00292)	(0.00250)
Sisters same parents	0.00644*	0.00585*	0.0152**	0.0142*	0.00130	0.000958
	(0.00373)	(0.00347)	(0.00751)	(0.00740)	(0.00332)	(0.00291)
Brothers same mother	-0.0173**	-0.0188***	0.00313	-0.00298	-0.0275***	-0.0250***
	(0.00734)	(0.00716)	(0.0167)	(0.0170)	(0.00776)	(0.00710)
Sisters same mother	-0.00739	-0.00761	-0.0207	-0.0179	-0.00238	-0.00220
	(0.00798)	(0.00753)	(0.0168)	(0.0165)	(0.00657)	(0.00586)
First same gender	0.0130	0.00945	0.00293	0.00438	0.0151	0.0135
	(0.0143)	(0.0135)	(0.0354)	(0.0352)	(0.0139)	(0.0124)
First of siblings	0.00391	0.00301	-0.00556	-0.0158	0.0115	0.00943
	(0.0162)	(0.0155)	(0.0393)	(0.0395)	(0.0180)	(0.0157)
First born is male	0.0169	0.0144	0.0492*	0.0464	0.00980	0.00695
	(0.0118)	(0.0112)	(0.0297)	(0.0304)	(0.0117)	(0.0102)
Father died recently	-0.0430***	-0.0423***	-0.0965***	-0.0960***	-0.0198	-0.0176*
	(0.0154)	(0.0142)	(0.0299)	(0.0297)	(0.0121)	(0.0106)
Father is dead	0.319***	0.312***	0.418***	0.409***	0.242***	0.230***
	(0.0135)	(0.0131)	(0.0196)	(0.0190)	(0.0166)	(0.0160)
Mother is dead	0.0301*	0.0306**	0.0418	0.0533*	0.0209	0.0162
	(0.0154)	(0.0148)	(0.0291)	(0.0304)	(0.0141)	(0.0124)

Father in farming	-0.0145	-0.0103	0.00332	0.0112	-0.0146	-0.0127
	(0.0146)	(0.0139)	(0.0285)	(0.0286)	(0.0126)	(0.0112)
Mother in farm.	0.0477**	0.0463**	0.0869**	0.0703*	0.0259	0.0263*
	(0.0192)	(0.0184)	(0.0404)	(0.0389)	(0.0166)	(0.0151)
Father in non-farm	-0.0584***	-0.0569***	-0.0839***	-0.0877***	-0.0388***	-0.0359***
	(0.0163)	(0.0153)	(0.0309)	(0.0305)	(0.0139)	(0.0124)
Mother in non-farm	0.00596	0.00769	0.00526	0.00582	0.00584	0.00407
	(0.0212)	(0.0200)	(0.0422)	(0.0419)	(0.0179)	(0.0156)
Father in 'other'	-0.0443	-0.0474	-0.0227	-0.0481	-0.0384	-0.0342
	(0.0507)	(0.0451)	(0.144)	(0.123)	(0.0326)	(0.0293)
Mother in 'other'	-0.0351	-0.0226	-0.0616	-0.0477	-0.0198	-0.0110
	(0.0330)	(0.0348)	(0.0561)	(0.0624)	(0.0304)	(0.0306)
Father's schooling	0.00167	-0.000215	-0.0560	-0.0503	0.0288	0.0179
	(0.0244)	(0.0224)	(0.0416)	(0.0445)	(0.0265)	(0.0214)
Mother's schooling	0.000504	-0.00889	-0.0490	-0.0552	0.0176	0.00275
	(0.0324)	(0.0275)	(0.0492)	(0.0469)	(0.0370)	(0.0273)
Father rural	0.0259	0.0280	-0.0101	-0.0139	0.0287	0.0315*
	(0.0220)	(0.0209)	(0.0497)	(0.0496)	(0.0175)	(0.0161)
Mother rural	0.0621***	0.0616***	0.105**	0.108**	0.0352*	0.0294*
	(0.0213)	(0.0204)	(0.0454)	(0.0460)	(0.0181)	(0.0164)
Log hh size	0.0298***	0.0190*	0.0535**	0.0323	0.0118	0.00760
	(0.0115)	(0.0103)	(0.0228)	(0.0217)	(0.00964)	(0.00820)
Log cell size	0.00880	0.00894	-0.00701	-0.0117	0.00308	0.00599
	(0.0113)	(0.0104)	(0.0248)	(0.0244)	(0.0112)	(0.00960)
Share of cell aged<5	-0.0670	-0.0718*	-0.167	-0.191	-0.0428	-0.0347
	(0.0450)	(0.0415)	(0.130)	(0.126)	(0.0334)	(0.0285)
Share of cell adults	-0.00608	-0.0150	-0.0936	-0.112	-0.00196	-0.00760
	(0.0315)	(0.0295)	(0.0745)	(0.0728)	(0.0258)	(0.0224)
Has formal schooling	-0.0235*	--	-0.0247	--	-0.0205*	--
	(0.0140)		(0.0276)		(0.0117)	
Fostered	0.0491**	--	0.119***	--	-0.0245	--
	(0.0232)		(0.0461)		(0.0167)	
Fostered young	-0.0477**	--	-0.111***	--	0.0116	--
	(0.0199)		(0.0327)		(0.0292)	
Age at first marriage	9.53e-05	--	0.000723	--	-0.000936	--
	(0.00107)		(0.00199)		(0.00110)	
Rural	0.00706	0.00681	0.0705	0.0744*	-0.0222	-0.0166
	(0.0237)	(0.0222)	(0.0454)	(0.0446)	(0.0187)	(0.0160)
No. Observations	3,383	3,587	1,478	1,561	1,866	2,026
Pseudo R^2	0.354	0.354	0.385	0.370	0.356	0.363

Note: Robust standard errors in parentheses, clustered at the household level; *** p<0.01, ** p<0.05, * p<0.1. The variables 'First same gender', 'First of siblings' and 'First born is male' all refer to children of the same father, same mother. Regressions also contain regional (department) dummies. The reference variables are Wolof ethnicity, all other religions, occupation 'inactive', share of cell members 5-15, no and non-formal schooling.

Table A4: Estimated effects of inheritance on log cell per capita consumption with and without controls for sample whose father is dead

	(1)	(2)	(3)
	No controls	Rural location and department dummies	As in (2) + controls for individual and household characteristics
Inherited land	-0.337***	-0.111**	-0.0633
	(0.0549)	(0.0444)	(0.0464)
Inherited house	0.184***	0.0705*	0.0852**
	(0.0475)	(0.0390)	(0.0407)
Other inheritance	0.00414	0.0840*	0.0559
	(0.0518)	(0.0451)	(0.0433)
Constant	12.56***	12.87***	13.28***
	(0.0367)	(0.247)	(0.445)
Observations	2,852	2,852	2,302
R^2	0.022	0.335	0.473

Table A5: Estimated effects of inheritance on log cell per capita consumption with and without controls for sample whose mother is dead.

	(1)	(2)	(3)
	No controls	Rural location and department dummies	As in (2) + controls for individual and household characteristics
Inherited land	-0.357***	-0.159***	-0.105*
	(0.0648)	(0.0531)	(0.0548)
Inherited house	0.162***	0.0785	0.0654
	(0.0608)	(0.0490)	(0.0508)
Other inheritance	0.0800	0.136**	0.100*
	(0.0639)	(0.0550)	(0.0553)
Constant	12.53***	12.79***	13.44***
	(0.0434)	(0.374)	(0.452)
Observations	1,708	1,708	1,407
R^2	0.020	0.357	0.474

Table A6: Estimated effects of inheritance on log cell per capita consumption with and without controls for sample whose father & mother are dead

	(1)	(2)	(3)
	No controls	Rural location and department dummies	As in (2) + controls for individual and household characteristics
Inherited land	-0.339***	-0.107**	-0.0653
	(0.0542)	(0.0434)	(0.0453)
Inherited house	0.181***	0.0641*	0.0710*
	(0.0464)	(0.0384)	(0.0395)
Other inheritance	0.0142	0.0905**	0.0681
	(0.0504)	(0.0440)	(0.0429)
Constant	12.56***	13.11***	13.42***
	(0.0349)	(0.387)	(0.390)
Observations	3,088	3,088	2,484
R^2	0.020	0.334	0.467

Table A7: Regressions for log cell expenditure per capita on the sample for whom father is dead

	(1) Full sample	(2) Rural	(3) Urban	(4) Men	(5) Women
Male	-0.00494	-0.0670	0.0578	--	--
	(0.0494)	(0.0715)	(0.0687)		
Age	-0.00195	-0.0113	0.00881	0.00426	-0.0137
	(0.00781)	(0.00930)	(0.0123)	(0.0121)	(0.0103)
Age squared	-1.58e-06	5.55e-05	-6.27e-05	-6.72e-05	0.000140
	(7.54e-05)	(8.93e-05)	(0.000120)	(0.000111)	(0.000105)
Muslim	0.0801	0.107	0.0264	0.0706	0.0411
	(0.0935)	(0.149)	(0.113)	(0.138)	(0.104)
Serere ethnicity	-0.217***	-0.233	-0.220***	-0.274***	-0.160*
	(0.0770)	(0.157)	(0.0788)	(0.0961)	(0.0903)
Poular ethnicity	-0.0723	0.0509	-0.132*	-0.123	-0.0417
	(0.0642)	(0.115)	(0.0748)	(0.0807)	(0.0740)
Diola ethnicity	-0.157	-0.199	-0.112	-0.00241	-0.326***
	(0.113)	(0.380)	(0.123)	(0.176)	(0.116)
Mandingue ethnicity	-0.0900	0.127	-0.199**	-0.161	-0.0180
	(0.103)	(0.186)	(0.0901)	(0.110)	(0.123)
Sarakole ethnicity	-0.180	-0.129	-0.156	-0.246	-0.134
	(0.135)	(0.203)	(0.183)	(0.186)	(0.160)
Mandiaque ethnicity	-0.394*	-0.828*	-0.321	-0.254	-0.540**
	(0.222)	(0.459)	(0.214)	(0.244)	(0.271)
Other ethnicity	-0.114	0.0134	-0.176*	-0.0624	-0.188
	(0.120)	(0.230)	(0.0979)	(0.156)	(0.154)
Brothers same father	-0.00477	-0.0243	0.00537	-0.0126	0.00359
	(0.0111)	(0.0157)	(0.0160)	(0.0179)	(0.0131)
Brothers same parents	0.00136	0.0184	-0.00951	0.0318*	-0.0278*
	(0.0115)	(0.0180)	(0.0149)	(0.0185)	(0.0142)
Sisters same father	0.0106	0.0200	0.00638	0.0172	0.00465
	(0.0108)	(0.0162)	(0.0148)	(0.0175)	(0.0130)
Sisters same parents	0.0278**	0.0373*	0.0221	0.0280	0.0345**
	(0.0114)	(0.0201)	(0.0142)	(0.0173)	(0.0158)
Brothers same mother	0.0607***	0.0669	0.0556**	0.0812**	0.0491*
	(0.0222)	(0.0422)	(0.0243)	(0.0319)	(0.0282)
Sisters same mother	-0.0449**	-0.0332	-0.0422*	-0.0398	-0.0534*
	(0.0218)	(0.0428)	(0.0247)	(0.0376)	(0.0280)
First same gender	0.0266	0.0811	-0.0261	0.0358	0.0434
	(0.0378)	(0.0527)	(0.0527)	(0.0697)	(0.0567)
First of siblings	-0.00640	-0.0217	0.0120	-0.0620	0.0408
	(0.0456)	(0.0626)	(0.0631)	(0.0780)	(0.0765)
First born is male	0.0731**	0.132**	0.0198	0.0835	0.0922*
	(0.0372)	(0.0532)	(0.0495)	(0.0723)	(0.0508)
Father died recently	-0.0119	-0.0120	0.0118	0.0302	-0.0502
	(0.0545)	(0.0775)	(0.0745)	(0.102)	(0.0617)
Father in farming	0.147***	0.112	0.195***	0.131*	0.142**
	(0.0504)	(0.0687)	(0.0719)	(0.0683)	(0.0639)
Mother in farm	-0.103*	-0.107	-0.0722	-0.176**	-0.0755
	(0.0543)	(0.0745)	(0.0712)	(0.0732)	(0.0647)

Father in non-farm	0.238***	0.334***	0.199***	0.265***	0.201***
	(0.0535)	(0.0995)	(0.0653)	(0.0731)	(0.0688)
Mother in non-farm	-0.160***	-0.153	-0.159**	-0.213**	-0.114*
	(0.0554)	(0.0933)	(0.0693)	(0.0922)	(0.0639)
Father in 'other'	0.722**		0.614**	0.870**	0.651
	(0.293)		(0.285)	(0.425)	(0.466)
Mother in 'other'	-0.224*	-0.233*	0.430***	-0.269*	-0.136
	(0.127)	(0.132)	(0.113)	(0.140)	(0.275)
Father's schooling	0.0835	-0.152	0.130*	0.166*	0.0399
	(0.0634)	(0.118)	(0.0710)	(0.101)	(0.0748)
Mother's schooling	0.0664	0.0763	0.0604	-0.0280	0.157*
	(0.0693)	(0.120)	(0.0845)	(0.105)	(0.0940)
Father rural	0.0254	0.0378	-0.0198	0.0441	-0.00750
	(0.0611)	(0.102)	(0.0805)	(0.105)	(0.0706)
Mother rural	-0.0754	-0.0562	-0.0820	-0.0646	-0.0673
	(0.0610)	(0.103)	(0.0821)	(0.109)	(0.0696)
Log hh size	-0.292***	-0.245***	-0.330***	-0.250***	-0.331***
	(0.0423)	(0.0730)	(0.0455)	(0.0557)	(0.0489)
Log cell size	-0.110***	-0.180***	-0.0797*	-0.102*	-0.0773
	(0.0331)	(0.0506)	(0.0435)	(0.0596)	(0.0525)
Share of cell aged<5	-0.142	-0.241	-0.0144	-0.504*	-0.0450
	(0.131)	(0.169)	(0.192)	(0.265)	(0.159)
Share of cell adults	0.446***	0.247*	0.538***	0.410**	0.465***
	(0.0939)	(0.148)	(0.119)	(0.174)	(0.118)
Has formal schooling	0.278***	0.151*	0.316***	0.223***	0.322***
	(0.0428)	(0.0778)	(0.0525)	(0.0612)	(0.0587)
Fostered	0.160**	0.159*	0.156	0.203**	0.0688
	(0.0650)	(0.0881)	(0.0960)	(0.0929)	(0.0869)
Fostered young	-0.0791	-0.110	-0.0913	-0.221	0.0577
	(0.0796)	(0.129)	(0.107)	(0.135)	(0.107)
Age at first marriage	-0.00204	-0.000110	-0.00292	-0.00331	-2.16e-05
	(0.00327)	(0.00482)	(0.00434)	(0.00466)	(0.00463)
Inherited land	-0.0633	-0.00845	-0.0983	-0.100	-0.0151
	(0.0464)	(0.0712)	(0.0620)	(0.0657)	(0.0555)
Inherited house	0.0852**	0.0629	0.124**	0.0751	0.0920*
	(0.0407)	(0.0688)	(0.0498)	(0.0588)	(0.0508)
Other inheritance	0.0559	0.0176	0.102*	0.158***	-0.0427
	(0.0433)	(0.0607)	(0.0614)	(0.0590)	(0.0521)
Rural	-0.274***			-0.299***	-0.285***
	(0.0683)			(0.0951)	(0.0808)
Constant	13.28***	13.29***	12.34***	12.70***	12.74***
	(0.445)	(0.500)	(0.397)	(0.536)	(0.354)
Observations	2,302	1,172	1,130	1,105	1,197
R^2	0.473	0.296	0.420	0.482	0.483

Note: Robust standard errors in parentheses, clustered at the household level. *** p<0.01, ** p<0.05, * p<0.1. The variables 'First same gender', 'First of siblings' and 'First born is male' refer to children of the same father, same mother. Regressions contain department dummies. Reference variables are Wolof ethnicity, other religions, occupation 'inactive', share of cell members 5-15, no & non-formal schooling.

Table A8: Regressions for log cell expenditure per capita, sample whose mother is dead

	(1) Full sample	(2) Rural	(3) Urban	(4) Men	(5) Women
Male	-0.0166	-0.0921	-0.00706	--	--
	(0.0683)	(0.0925)	(0.102)		
Age	-0.0189*	-0.0249**	-0.0172	-0.0113	-0.0297**
	(0.0110)	(0.0120)	(0.0207)	(0.0166)	(0.0150)
Age squared	0.000128	0.000170	0.000137	4.36e-05	0.000265*
	(9.78e-05)	(0.000104)	(0.000183)	(0.000147)	(0.000136)
Muslim	-0.00580	-0.128	0.0423	0.0271	-0.00366
	(0.139)	(0.246)	(0.159)	(0.184)	(0.149)
Serere ethnicity	-0.157	-0.153	-0.244**	-0.222*	-0.0550
	(0.105)	(0.212)	(0.107)	(0.130)	(0.127)
Poular ethnicity	0.0255	0.132	-0.0385	-0.0950	0.119
	(0.0809)	(0.146)	(0.0919)	(0.112)	(0.104)
Diola ethnicity	-0.225	-0.411	-0.138	-0.283	-0.182
	(0.140)	(0.446)	(0.146)	(0.217)	(0.157)
Mandingue ethnicity	-0.00474	0.287	-0.155	-0.0671	0.0726
	(0.127)	(0.228)	(0.124)	(0.150)	(0.166)
Sarakole ethnicity	-0.200	0.110	-0.227	-0.485*	0.000947
	(0.198)	(0.282)	(0.293)	(0.258)	(0.284)
Mandiaque ethnicity	-0.546**	-0.912*	-0.420	-0.503	-0.541**
	(0.252)	(0.550)	(0.274)	(0.335)	(0.264)
Other ethnicity	-0.138	0.107	-0.285*	-0.141	-0.163
	(0.160)	(0.279)	(0.148)	(0.204)	(0.223)
Brothers same father	-0.0174	-0.0557***	0.0161	-0.0153	-0.0204
	(0.0158)	(0.0201)	(0.0228)	(0.0278)	(0.0186)
Brothers same parents	-0.00809	0.0147	-0.0256	-0.0252	-0.0287
	(0.0181)	(0.0269)	(0.0240)	(0.0293)	(0.0245)
Sisters same father	0.0269*	0.0519**	0.00229	0.0310	0.0311
	(0.0157)	(0.0212)	(0.0217)	(0.0238)	(0.0203)
Sisters same parents	0.0306*	0.0337	0.0362	0.0409*	0.0494**
	(0.0161)	(0.0232)	(0.0243)	(0.0232)	(0.0246)
Brothers same mother	0.0227	0.0320	0.0168	0.0607	-0.0144
	(0.0300)	(0.0437)	(0.0430)	(0.0398)	(0.0492)
Sisters same mother	-0.00382	-0.0450	0.0444	-0.109***	0.0482
	(0.0396)	(0.0363)	(0.0677)	(0.0404)	(0.0604)
First same gender	-0.0189	-0.0245	0.00396	-0.0256	0.0295
	(0.0529)	(0.0739)	(0.0800)	(0.0900)	(0.0897)
First of siblings	0.0823	0.132	0.0194	-0.0255	0.144
	(0.0634)	(0.0895)	(0.0842)	(0.0979)	(0.112)
First born is male	0.0773	0.150**	0.0152	0.157*	0.0799
	(0.0470)	(0.0680)	(0.0657)	(0.0881)	(0.0730)
Father died recently	0.0597	-0.0720	0.210	0.117	-0.0114
	(0.0885)	(0.105)	(0.151)	(0.149)	(0.103)
Father in farming	0.0710	0.0315	0.134	-0.0428	0.174**
	(0.0611)	(0.0840)	(0.0895)	(0.0835)	(0.0871)
Mother in farm	-0.0780	-0.0483	-0.0601	-0.0891	-0.0984
	(0.0694)	(0.0911)	(0.0949)	(0.0904)	(0.0968)

Father in non-farm	0.220***	0.212*	0.197**	0.214**	0.216**
	(0.0698)	(0.123)	(0.0887)	(0.0943)	(0.0980)
Mother in non-farm	-0.131	0.242*	-0.292***	-0.0850	-0.142
	(0.0827)	(0.144)	(0.111)	(0.140)	(0.107)
Father in 'other'	0.604*	-0.186	0.802*	0.243	1.140
	(0.350)	(0.235)	(0.473)	(0.360)	(0.720)
Mother in 'other'	0.0389	-0.126	0.466***	0.507*	-0.162
	(0.311)	(0.458)	(0.131)	(0.269)	(0.413)
Father's schooling	0.174*	0.225	0.0996	0.263*	0.134
	(0.0961)	(0.163)	(0.107)	(0.151)	(0.128)
Mother's schooling	0.296*	0.258	0.376*	0.102	0.470
	(0.158)	(0.164)	(0.217)	(0.152)	(0.290)
Father rural	-0.0157	-0.00662	-0.103	-0.137	0.0629
	(0.0849)	(0.144)	(0.108)	(0.146)	(0.110)
Mother rural	0.0425	0.202	0.0376	0.172	-0.00211
	(0.0863)	(0.148)	(0.116)	(0.150)	(0.109)
Log hh size	-0.257***	-0.207**	-0.297***	-0.251***	-0.262***
	(0.0520)	(0.0835)	(0.0603)	(0.0720)	(0.0635)
Log cell size	-0.0958**	-0.119*	-0.0816	-0.0970	-0.0723
	(0.0445)	(0.0645)	(0.0602)	(0.0779)	(0.0702)
Share of cell aged<5	-0.564***	-0.601***	-0.494	-0.933**	-0.483**
	(0.186)	(0.221)	(0.329)	(0.411)	(0.235)
Share of cell adults	0.340***	0.211	0.425**	0.198	0.409***
	(0.118)	(0.164)	(0.168)	(0.236)	(0.152)
Has formal schooling	0.265***	0.114	0.323***	0.154*	0.371***
	(0.0575)	(0.102)	(0.0685)	(0.0806)	(0.0924)
Fostered	0.150*	0.125	0.139	0.264**	0.0346
	(0.0788)	(0.102)	(0.117)	(0.115)	(0.112)
Fostered young	0.0866	0.140	0.0785	-0.0492	0.196
	(0.107)	(0.161)	(0.149)	(0.187)	(0.139)
Age at first marriage	0.000842	0.00586	-0.000891	-0.00300	0.00667
	(0.00389)	(0.00603)	(0.00537)	(0.00525)	(0.00568)
Inherited land	-0.105*	-0.0766	-0.126*	-0.177**	-0.0200
	(0.0548)	(0.0848)	(0.0726)	(0.0756)	(0.0768)
Inherited house	0.0654	0.146*	0.0182	0.0821	0.0342
	(0.0508)	(0.0780)	(0.0691)	(0.0738)	(0.0697)
Other inheritance	0.100*	0.114	0.142*	0.195***	-0.0234
	(0.0553)	(0.0758)	(0.0770)	(0.0733)	(0.0737)
Rural	-0.374***			-0.428***	-0.364***
	(0.0787)			(0.114)	(0.100)
Constant	13.44***	13.35***	13.28***	13.22***	13.61***
	(0.452)	(0.671)	(0.641)	(0.782)	(0.782)
Observations	1,407	726	681	697	710
R^2	0.474	0.316	0.420	0.490	0.505

Note: Robust st. errors in parentheses, clustered at the household level. *** p<0.01, ** p<0.05, * p<0.1. The variables 'First same gender', 'First of siblings' and 'First born is male' refer to children of same father, same mother. Regressions contain department dummies. Reference variables are Wolof ethnicity, other religions, occupation 'inactive', share of cell members 5-15, no & non-formal schooling.

Table A9: Regressions for log cell expenditure per capita: sample with mother or father dead

	(1) Full sample	(2) Rural	(3) Urban	(4) Men	(5) Women
Male	-0.0102	-0.0624	0.0244	--	--
	(0.0478)	(0.0695)	(0.0663)		
Age	-0.00524	-0.0131	0.00453	0.00665	-0.0204*
	(0.00766)	(0.00877)	(0.0127)	(0.0114)	(0.0105)
Age squared	2.45e-05	7.69e-05	-4.09e-05	-9.12e-05	0.000196*
	(7.32e-05)	(8.44e-05)	(0.000121)	(0.000105)	(0.000104)
Muslim	0.0438	-0.0626	0.0816	0.0386	0.0202
	(0.107)	(0.200)	(0.117)	(0.150)	(0.113)
Serere ethnicity	-0.207***	-0.229	-0.220***	-0.283***	-0.136
	(0.0745)	(0.150)	(0.0769)	(0.0939)	(0.0877)
Poular ethnicity	-0.0489	0.0621	-0.107	-0.0950	-0.0164
	(0.0628)	(0.111)	(0.0737)	(0.0794)	(0.0719)
Diola ethnicity	-0.176*	-0.263	-0.116	-0.00646	-0.304***
	(0.106)	(0.378)	(0.113)	(0.170)	(0.107)
Mandingue ethnicity	-0.0884	0.151	-0.217**	-0.167	-0.0208
	(0.100)	(0.183)	(0.0872)	(0.108)	(0.120)
Sarakole ethnicity	-0.180	-0.104	-0.153	-0.223	-0.139
	(0.137)	(0.203)	(0.188)	(0.180)	(0.170)
Mandiaque ethnicity	-0.386*	-0.775*	-0.290	-0.267	-0.464*
	(0.213)	(0.454)	(0.208)	(0.224)	(0.254)
Other ethnicity	-0.108	0.0465	-0.193*	-0.0313	-0.186
	(0.113)	(0.213)	(0.101)	(0.153)	(0.141)
Brothers same father	-0.00480	-0.0253*	0.00490	-0.00685	-0.00315
	(0.0102)	(0.0143)	(0.0148)	(0.0165)	(0.0131)
Brothers same parents	0.00174	0.0208	-0.0117	0.0269	-0.0255*
	(0.0113)	(0.0175)	(0.0150)	(0.0181)	(0.0144)
Sisters same father	0.0124	0.0206	0.00857	0.0115	0.0135
	(0.0105)	(0.0163)	(0.0137)	(0.0166)	(0.0129)
Sisters same parents	0.0282**	0.0373**	0.0248	0.0231	0.0420**
	(0.0116)	(0.0188)	(0.0155)	(0.0167)	(0.0166)
Brothers same mother	0.0498**	0.0559	0.0431	0.0886***	0.0241
	(0.0222)	(0.0390)	(0.0265)	(0.0305)	(0.0288)
Sisters same mother	-0.0221	-0.0199	-0.0155	-0.0389	-0.0153
	(0.0245)	(0.0330)	(0.0348)	(0.0367)	(0.0340)
First same gender	0.0205	0.0563	-0.00534	0.00243	0.0686
	(0.0365)	(0.0513)	(0.0504)	(0.0678)	(0.0556)
First of siblings	0.0136	-0.0126	0.0384	-0.0260	0.0479
	(0.0442)	(0.0603)	(0.0611)	(0.0753)	(0.0743)
First born is male	0.0745**	0.142***	0.0130	0.0726	0.0948*
	(0.0363)	(0.0523)	(0.0480)	(0.0703)	(0.0491)
Father died recently	-0.0200	-0.0163	-0.00594	0.0260	-0.0636
	(0.0541)	(0.0763)	(0.0756)	(0.101)	(0.0613)
Father in farming	0.132***	0.0947	0.176**	0.0873	0.153**
	(0.0480)	(0.0648)	(0.0704)	(0.0645)	(0.0597)
Mother in farm	-0.104**	-0.119*	-0.0279	-0.175**	-0.0689
	(0.0528)	(0.0710)	(0.0719)	(0.0709)	(0.0644)

Father in non-farm	0.217***	0.270***	0.200***	0.223***	0.204***
	(0.0514)	(0.0950)	(0.0625)	(0.0713)	(0.0650)
Mother in non-farm	-0.183***	-0.123	-0.201***	-0.216**	-0.147**
	(0.0545)	(0.0888)	(0.0705)	(0.0880)	(0.0644)
Father in 'other'	0.448*	-0.111	0.508*	0.453	0.488
	(0.248)	(0.302)	(0.289)	(0.317)	(0.429)
Mother in 'other'	-0.210*	-0.202	0.448***	-0.241*	-0.127
	(0.124)	(0.130)	(0.110)	(0.136)	(0.267)
Father's schooling	0.109*	-0.0784	0.124*	0.168*	0.0854
	(0.0629)	(0.119)	(0.0700)	(0.0983)	(0.0765)
Mother's schooling	0.0868	0.0616	0.119	-0.0385	0.202
	(0.0833)	(0.120)	(0.112)	(0.106)	(0.129)
Father rural	0.0227	0.0806	-0.0412	0.0512	-0.0107
	(0.0596)	(0.0974)	(0.0785)	(0.103)	(0.0704)
Mother rural	-0.0652	-0.0412	-0.0661	-0.0641	-0.0525
	(0.0595)	(0.0983)	(0.0804)	(0.107)	(0.0699)
Log hh size	-0.294***	-0.270***	-0.311***	-0.274***	-0.315***
	(0.0414)	(0.0724)	(0.0465)	(0.0540)	(0.0499)
Log cell size	-0.113***	-0.176***	-0.0871**	-0.108*	-0.0666
	(0.0319)	(0.0469)	(0.0424)	(0.0573)	(0.0513)
Share of cell aged<5	-0.222*	-0.250	-0.156	-0.478*	-0.155
	(0.124)	(0.161)	(0.182)	(0.252)	(0.153)
Share of cell adults	0.417***	0.214	0.549***	0.391**	0.463***
	(0.0909)	(0.136)	(0.119)	(0.168)	(0.117)
Has formal schooling	0.276***	0.131*	0.327***	0.224***	0.318***
	(0.0427)	(0.0748)	(0.0522)	(0.0597)	(0.0596)
Fostered	0.141**	0.161*	0.132	0.204**	0.0387
	(0.0604)	(0.0837)	(0.0879)	(0.0894)	(0.0764)
Fostered young	-0.0488	-0.108	-0.0420	-0.183	0.0795
	(0.0760)	(0.121)	(0.103)	(0.136)	(0.0954)
Age at first marriage	-0.00143	-9.42e-05	-0.00102	-0.00296	0.000270
	(0.00316)	(0.00478)	(0.00415)	(0.00452)	(0.00441)
Inherited land	-0.0653	-0.0114	-0.0939	-0.101	-0.0204
	(0.0453)	(0.0706)	(0.0597)	(0.0637)	(0.0539)
Inherited house	0.0710*	0.0684	0.0887*	0.0680	0.0742
	(0.0395)	(0.0671)	(0.0490)	(0.0574)	(0.0493)
Other inheritance	0.0681	0.0284	0.121*	0.178***	-0.0367
	(0.0429)	(0.0583)	(0.0629)	(0.0581)	(0.0528)
Rural	-0.282***			-0.344***	-0.257***
	(0.0677)			(0.0937)	(0.0791)
Constant	13.03***	12.74***	12.56***	12.76***	13.63***
	(0.315)	(0.535)	(0.380)	(0.521)	(0.433)
Observations	2,484	1,257	1,227	1,168	1,316
R^2	0.467	0.295	0.411	0.478	0.471

Note: Robust st. errors in parentheses, clustered at the h'hold level. *** p<0.01, ** p<0.05, * p<0.1. The variables 'First same gender', 'First of siblings' and 'First born is male' refer to children of the same father, same mother. Regressions contain department dummies. Reference variables are Wolof ethnicity, all other religions, occupation 'inactive', share of cell members 5-15, no and non-formal schooling.

Table A10: Regressions for log cell expenditure per equivalent adult

	(1) Full sample	(2) Rural	(3) Urban	(4) Men	(5) Women
Male	0.00966	-0.0258	0.0366		
	(0.0404)	(0.0603)	(0.0555)		
Age	-0.00121	-0.00385	0.00374	0.00845	-0.0141*
	(0.00618)	(0.00755)	(0.00985)	(0.00989)	(0.00818)
Age squared	-2.21e-05	-1.95e-05	-4.06e-05	-0.000124	0.000130
	(6.17e-05)	(7.55e-05)	(9.76e-05)	(9.35e-05)	(8.57e-05)
Muslim	0.0687	-0.105	0.139	0.103	0.0500
	(0.0960)	(0.202)	(0.103)	(0.126)	(0.103)
Serere ethnicity	-0.175***	-0.186	-0.173**	-0.228***	-0.128*
	(0.0620)	(0.120)	(0.0679)	(0.0830)	(0.0686)
Poular ethnicity	-0.0477	0.0590	-0.0978	-0.0765	-0.0203
	(0.0519)	(0.0851)	(0.0643)	(0.0675)	(0.0539)
Diola ethnicity	-0.157	-0.186	-0.0984	0.0162	-0.254***
	(0.100)	(0.370)	(0.102)	(0.153)	(0.0976)
Mandingue ethnicity	-0.0968	0.160	-0.243***	-0.160	-0.0506
	(0.0871)	(0.162)	(0.0784)	(0.100)	(0.0959)
Sarakole ethnicity	-0.107	0.0369	-0.122	-0.180	-0.0362
	(0.127)	(0.241)	(0.166)	(0.179)	(0.142)
Mandiaque ethnicity	-0.433**	-0.647*	-0.357*	-0.173	-0.545***
	(0.185)	(0.376)	(0.193)	(0.225)	(0.199)
Other ethnicity	-0.0107	0.146	-0.136	0.0797	-0.101
	(0.109)	(0.180)	(0.113)	(0.141)	(0.118)
Brothers same father	-0.00139	-0.0117	0.00330	0.00137	-0.00306
	(0.00770)	(0.0104)	(0.0112)	(0.0132)	(0.00969)
Brothers same parents	0.000624	0.00980	-0.00784	0.0158	-0.0141
	(0.00936)	(0.0128)	(0.0131)	(0.0145)	(0.0118)
Sisters same father	0.0127	0.0219*	0.00620	0.000495	0.0221**
	(0.00782)	(0.0120)	(0.0105)	(0.0136)	(0.00970)
Sisters same parents	0.0184**	0.0273*	0.0142	0.0105	0.0303***
	(0.00904)	(0.0141)	(0.0122)	(0.0140)	(0.0117)
Brothers same mother	0.0436**	0.0311	0.0461**	0.0748***	0.0232
	(0.0179)	(0.0319)	(0.0216)	(0.0252)	(0.0230)
Sisters same mother	-0.0284	-0.0289	-0.0223	-0.0412	-0.0222
	(0.0207)	(0.0267)	(0.0297)	(0.0285)	(0.0290)
First same gender	-0.00352	0.0372	-0.0433	-0.0195	0.0173
	(0.0317)	(0.0443)	(0.0443)	(0.0590)	(0.0452)
First of siblings	0.0144	-0.0148	0.0490	-0.0280	0.0760
	(0.0379)	(0.0514)	(0.0534)	(0.0646)	(0.0624)
First born is male	0.0585*	0.112**	-0.0108	0.0326	0.0935**
	(0.0306)	(0.0433)	(0.0405)	(0.0615)	(0.0412)
Father died recently	-0.0104	0.0183	-0.0237	0.0308	-0.0350
	(0.0532)	(0.0761)	(0.0734)	(0.0988)	(0.0582)
Father in farming	0.0980**	0.0673	0.121*	0.0712	0.105**
	(0.0415)	(0.0532)	(0.0651)	(0.0562)	(0.0490)
Mother in farm	-0.0720	-0.0920	0.00383	-0.0776	-0.0733
	(0.0450)	(0.0591)	(0.0663)	(0.0611)	(0.0540)
Father in non-farm	0.164***	0.155**	0.168***	0.182***	0.137***

	(0.0420)	(0.0692)	(0.0549)	(0.0597)	(0.0504)
Mother in non-farm	-0.116***	-0.0542	-0.135**	-0.155**	-0.0799
	(0.0440)	(0.0681)	(0.0573)	(0.0689)	(0.0523)
Father in 'other'	0.377**	0.135	0.534**	0.398**	0.361
	(0.147)	(0.180)	(0.239)	(0.199)	(0.241)
Mother in 'other'	-0.247***	-0.213**	0.0287	-0.210*	-0.333**
	(0.0934)	(0.102)	(0.244)	(0.124)	(0.158)
Father's schooling	0.0709	-0.0833	0.0988*	0.149*	0.0295
	(0.0491)	(0.0891)	(0.0561)	(0.0793)	(0.0591)
Mother's schooling	0.162**	0.101	0.220***	0.0356	0.242***
	(0.0633)	(0.0934)	(0.0826)	(0.0870)	(0.0902)
Father rural	0.00279	-0.0321	-0.00972	0.0539	-0.0375
	(0.0503)	(0.0797)	(0.0648)	(0.0891)	(0.0575)
Mother rural	-0.0717	-0.0439	-0.0797	-0.137	-0.0228
	(0.0510)	(0.0822)	(0.0662)	(0.0888)	(0.0574)
Log hh size	-0.268***	-0.246***	-0.283***	-0.244***	-0.292***
	(0.0364)	(0.0631)	(0.0416)	(0.0486)	(0.0416)
Log cell size	-0.130***	-0.179***	-0.123***	-0.163***	-0.0629
	(0.0267)	(0.0394)	(0.0357)	(0.0494)	(0.0433)
Share of cell aged<5	-0.112	-0.132	-0.0606	-0.310	-0.0677
	(0.0964)	(0.133)	(0.144)	(0.200)	(0.113)
Share of cell adults	0.180**	0.0268	0.266**	0.167	0.200**
	(0.0766)	(0.115)	(0.104)	(0.144)	(0.0982)
Has formal schooling	0.265***	0.149**	0.314***	0.218***	0.281***
	(0.0356)	(0.0631)	(0.0432)	(0.0525)	(0.0455)
Fostered	0.116**	0.142*	0.106	0.165**	0.0425
	(0.0512)	(0.0755)	(0.0703)	(0.0765)	(0.0646)
Fostered young	-0.0101	-0.0462	-0.0147	-0.157	0.101
	(0.0658)	(0.103)	(0.0887)	(0.116)	(0.0824)
Age at first marriage	0.000280	0.00384	-0.00138	-0.00232	0.00442
	(0.00273)	(0.00413)	(0.00357)	(0.00396)	(0.00379)
Inherited land	-0.0759*	-0.0348	-0.0943	-0.107*	-0.0408
	(0.0442)	(0.0682)	(0.0577)	(0.0606)	(0.0532)
Inherited house	0.0748**	0.0649	0.0864*	0.0636	0.0880*
	(0.0365)	(0.0612)	(0.0441)	(0.0525)	(0.0450)
Other inheritance	0.0685*	0.0474	0.109*	0.163***	-0.0158
	(0.0415)	(0.0552)	(0.0611)	(0.0556)	(0.0508)
Rural	-0.276***			-0.291***	-0.273***
	(0.0602)			(0.0824)	(0.0650)
Constant	13.21***	13.62***	12.74***	13.88***	13.77***
	(0.289)	(0.484)	(0.324)	(0.496)	(0.362)
Observations	3,392	1,756	1,636	1,479	1,913
R^2	0.427	0.245	0.375	0.443	0.426

Note: Robust st. errors in parentheses, clustered at the h'hold level. *** p<0.01, ** p<0.05, * p<0.1. The variables 'First same gender', 'First of siblings' and 'First born is male' refer to children of the same father, same mother. Regressions contain department dummies. Reference variables are Wolof ethnicity, all other religions, occupation 'inactive', share of cell members 5-15, no and non-formal schooling.

Table A11: Marginal effects of inheritance, schooling and parental characteristics on ag employment: sample with father or mother dead

	(1) All	(2) Rural	(3) Urban	(4) Men	(5) Women
Father in farming	0.0106	0.00760	-0.00157	-0.0136	0.0304
	(0.0190)	(0.0382)	(0.00929)	(0.0302)	(0.0210)
Mother in farm	0.0513*	0.0771*	0.0184	0.0545	0.0407
	(0.0262)	(0.0468)	(0.0203)	(0.0398)	(0.0260)
Father in non-farm	-0.0196	-0.101*	9.26e-05	-0.0545	0.00509
	(0.0248)	(0.0591)	(0.0100)	(0.0401)	(0.0317)
Mother in non-farm	-0.101***	-0.219***	-0.0200***	-0.125***	-0.0696***
	(0.0212)	(0.0622)	(0.00695)	(0.0386)	(0.0194)
Father in 'other'	-0.122***	-0.287***		-0.162***	-0.0788***
	(0.0163)	(0.0507)		(0.0302)	(0.0136)
Mother in 'other'	-0.00604	-0.0216	-0.00387	0.0345	-0.0561***
	(0.0349)	(0.0969)	(0.00961)	(0.0623)	(0.0206)
Father's schooling	-0.0796**	-0.185**	-0.0119	-0.104**	-0.0533
	(0.0334)	(0.0791)	(0.0150)	(0.0486)	(0.0389)
Mother's schooling	0.0106	0.00760	-0.00157	-0.0136	0.0304
	(0.0190)	(0.0382)	(0.00929)	(0.0302)	(0.0210)
Own schooling	-0.0259	-0.0660	-0.00936	-0.0707**	0.0464
	(0.0205)	(0.0534)	(0.00829)	(0.0314)	(0.0305)
Inherited land	0.0546**	0.101**	0.00372	0.0114	0.110***
	(0.0221)	(0.0438)	(0.0107)	(0.0327)	(0.0335)
Inherited house	0.0205	0.0225	0.0157	0.0121	0.0215
	(0.0197)	(0.0415)	(0.0103)	(0.0298)	(0.0223)
Inherited other	-0.0406**	-0.0648*	-0.0137*	-0.0379	-0.0239
	(0.0181)	(0.0386)	(0.00730)	(0.0282)	(0.0190)
Observations	2,481	1,253	1,133	1,161	1,231
Pseudo R^2	0.323	0.218	0.270	0.314	0.400

Notes: Robust standard errors in parentheses, clustered at the household level; *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported. The regressions include controls listed in Table 5 notes. The 'other' occupation drops out of the urban regressions as it is found only in rural areas.

Table 10(a): Marginal effects of inheritance, schooling and parental characteristics on non-agricultural employment, sample with father or mother dead

	(1) All	(2) Rural	(3) Urban	(4) Men	(5) Women
Father in farming	0.00983	-0.0163	0.0541	0.0479	-0.0169
	(0.0324)	(0.0358)	(0.0412)	(0.0416)	(0.0425)
Mother in farm	-0.0471	-0.0347	0.00368	-0.0819	-0.00896
	(0.0360)	(0.0377)	(0.0514)	(0.0511)	(0.0452)
Father in non-farm	0.0400	0.140**	-0.00127	0.0683	0.0232
	(0.0350)	(0.0586)	(0.0375)	(0.0512)	(0.0478)
Mother in non-farm	0.182***	0.184**	0.149***	0.180***	0.188***
	(0.0384)	(0.0717)	(0.0327)	(0.0602)	(0.0490)
Father in 'other'	-0.111	-0.113	-0.0772	-0.0648	-0.0856
	(0.141)	(0.147)	(0.168)	(0.165)	(0.189)
Mother in 'other'	-0.309***	-0.196***	-0.357***	-0.418***	-0.142
	(0.0795)	(0.0443)	(0.0739)	(0.101)	(0.189)
Father's schooling	-0.0246	-0.0937	0.0350	-0.0279	-0.0217
	(0.0416)	(0.0632)	(0.0412)	(0.0707)	(0.0518)
Mother's schooling	0.0126	0.193*	-0.0640	0.104	-0.0567
	(0.0640)	(0.114)	(0.0694)	(0.100)	(0.0703)
Own schooling	0.0709**	0.0588	0.0601*	0.154***	0.0117
	(0.0307)	(0.0537)	(0.0319)	(0.0406)	(0.0404)
Inherited land	-0.0131	-0.000791	0.00551	0.00829	-0.00440
	(0.0328)	(0.0381)	(0.0424)	(0.0450)	(0.0438)
Inherited house	-0.00395	-0.0226	-0.00237	-0.0286	0.0121
	(0.0296)	(0.0368)	(0.0352)	(0.0412)	(0.0372)
Inherited other	0.0397	-0.0116	0.103***	0.00757	0.0813**
	(0.0284)	(0.0325)	(0.0328)	(0.0372)	(0.0377)
Observations	2,476	1,237	1,234	1,168	1,308
Pseudo R^2	0.225	0.173	0.158	0.281	0.190

Notes: Robust standard errors in parentheses, clustered at the household level; *** p<0.01, ** p<0.05, * p<0.1. Marginal effects are reported. The regressions include controls listed in Table 5.