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Transformation of African Farm-cum-Family Structures

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[–] Abstract and Keywords

This chapter examines the transformation of farm-cum-family structures in Africa and the forces that drive such a transformation process. It begins by reviewing the partial theories of individualization before turning to a discussion of a more general approach that explains family-and-farm structures in terms of the magnitude of land endowment and outside opportunities. Two different types of individualization of farms and families are considered: the emergence of mixed farm structures in which adult members of the family receive private plots that can be used for their own benefit during limited periods of time, and the splitting of the stem household into branch households that coincides with the division of the land and the granting of pre-mortem inheritance. The chapter concludes by illustrating how economic theory can shed light on the emergence of farm-cum-family forms in sub-Saharan Africa.

Keywords: individualization, land endowment, farms, families, households, inheritance, economic theory, sub-Saharan Africa

1 Introduction

The analysis of slavery or serfdom by Evsey Domar (1970) suggests that, in a two-factor economy based on land and labor alone, it is impossible to have free land, free peasants, and non-working landowners simultaneously. Any two elements of this triad can nevertheless coexist (see also Boserup 1965: 73; Mathur 1991: 47–49; Binswanger et al. 1995: 2670–2673).

Peasant societies correspond to the configuration in which free peasants and free land exist simultaneously while a class of non-working landowners is conspicuously absent. By contrast, under systems of slavery, serfdom, debt peonage, or indentured labor, there is free land and non-working landowners, yet not free peasants. In conditions of land abundance, therefore, the workers need to be enslaved, enserfed, indentured, or tied for a landowning class to be able to exist, and this requires special political conditions, such as they have been found in Latin America, Eastern Europe and Russia, the southern part of North America, or colonial plantations in parts of Asia and Africa.

In sub-Saharan Africa, ruling families, lineages, or larger social groups did try hard to "capture peasantries" or develop systems of property rights in man. Yet, the presence of strongly hierarchical societies stratified along caste lines has always been limited to certain parts of the region.[1] When trying to explain why many "capturing" attempts were unsuccessful in Africa in general, and in Guyana in particular, Mathur (1991) pointed out that people "knew too well the byways of the forest and hills in the country; whenever any attempt was made to use them, they would in a few days escape into the jungle and could not be brought back." This solution was not available to indentured laborers brought from outside since they could be "kept out of the forests by the local tribes who would not hesitate in murdering such intruders" (48–49). We have to add that the possibility of acquiring membership in stranger communities (migration was a common phenomenon) combined with the rudimentary character of

cultivation techniques opened many "exit options" to the hunted-down cultivators who wished to escape the grip of oppressive rulers or chiefs, particularly so in the dense forest areas of humid central Africa (Platteau 2000: Chapter 5).

The absence of a landowning, non-working class does not imply, however, that small peasant family farms predominate in the African countryside. In fact, the social structure in Africa has long been characterized by clans and extended families, so that the model of a free peasantry is not exactly vindicated, calling for a refinement of Domar's framework. Such a refinement should allow for the possible existence of intermediate forms between free and tied labor that may be combined with free land and non-working landholders. Indeed, in many parts of sub-Saharan Africa (e.g., Burkina Faso, Gambia, Senegal, or Mali), land is cultivated by large patriarchal families where strong hierarchy prevails and many adult workers, males and females, are placed under the authority of a single head acting as the ultimate manager of both land and labor within the household. From an analytical point of view, it then makes sense to treat the patriarchal family as a functional equivalent of the feudal land estate. In various countries, interestingly, this family organization dominated even in conditions of plentiful land resources: we thus have simultaneously family farms, free land, and non-working patriarchs. However, the tying of the labor force to the strong authority of the patriarch broadly reconciles this observation with Domar's framework.

Empirical observations show that these farm-cum-family structures are gradually disappearing or transforming themselves into forms closer to the more individualized structures found in Europe and Asia. Furthermore, it appears that the strong power of the patriarch is eroding as land becomes scarce, suggesting that when the frontier closes more individual farms emerge, in accordance with Domar's intuition. Africa therefore offers a unique laboratory for studying the forces that drive such a transformation process.

When discussing this issue, we need to carefully distinguish between two different types of individualization of farms and families: (i) the emergence of mixed farm structures in which the family remains whole yet adult members receive private plots that they can use for their own benefit during limited periods of time, and (ii) the splitting of the stem household into branch households that goes hand in hand with the division of the land and the granting of pre-mortem inheritance. The first type, that maintains collective fields on which all members of the extended family work as well as collective kitchens and meals in which the same take part, is obviously a less advanced form of individualization than the second type.

Economic theory supplies us with several possible explanations of the individualization of farm-cum-family structures, but most of them actually deal with only one of the two aforementioned forms. Thus, the theory of Ester Boserup (1965), which puts emphasis on the growing role of labor quality, the theory of Andrew Foster and Mark Rosenzweig (2002), which focuses on the diminishing importance of the public good character of consumption, and a risk-based theory put forward by Michael Carter (1987) and by Matthieu Delpierre et al. (2013) are motivated by the desire to explain the splitting or division of large households. By contrast, the theory of Marcel Fafchamps (2001), which draws attention to a commitment problem on the side of the household head, and that of Elizabeth Sadoulet (1992), which assumes a problem of limited liability on the side of the worker, aim at explaining the awarding of private plots within a collective or family structure.

Only the theory proposed by Guirkinger and Platteau (2011) purports to explain both types of individualization of farm-cum-family structures. Furthermore, precisely because it gives a key role to resource endowments (and outside opportunities), it may be articulated with Domar's framework yet in a manner that necessitates a new substantial adjustment. As land becomes scarce (the land frontier is closed), the typical mechanism leading to individualization of farm-cum-family structures is the "market path." This means that the decline of the value of labor relative to land gives rise to a situation where landowners no longer need to "capture" peasants (or to run after escaping workers) because land-hungry farmers readily offer their labor to the landed class. Increasingly active land and labor markets makes inequality in land distribution persist as a result of economic forces alone, so that support from political rulers is no longer required. Guirkinger and Platteau, on the other hand, suggest, in a way that will become clear later, that an alternative "non-market path" may exist in which individualization obtains in the absence of land and labor markets.

In this chapter, we proceed in three steps. In Section 2, we review the partial theories of individualization, bringing their arguments into light and discussing their strengths and weaknesses with special reference to the African context. Section 3 begins by expounding the central argument behind the more general theory of Guirkinger and

Platteau (2011), which explains family-cum-farm structures in terms of the magnitude of land endowment and outside opportunities. It then moves to the empirical evidence that has been harnessed in support of this theory. Finally, in Section 4, we offer some conclusive discussion regarding the contribution of economic theory regarding our understanding of evolution of farm-cum-family forms in sub-Saharan Africa, in particular.

2 Partial Theories of Individualization of Farm-cum-Family Structures

So far, economists have proposed few theories of the evolution of the farm-cum-family structure, and the available theories aim at explaining either the shift from the collective farm to the mixed form in which individual and collective fields coexist, or the break-up of the collective farms into individual units.

Fafchamps (2001) offers an example of the former since he tries to explain the decision of the household head to allocate individual plots to family members. His explanation rests on the assumption that there exists a serious commitment problem inside the family: the head is unwilling or unable to commit to reward the work of other family members on the family field after the harvest, and the latter are therefore tempted to relax their labor efforts or to divert them to other income-earning activities. To solve this commitment failure problem, the head decides to reward his wife and dependents by granting them access to individual plots of land and the right to freely dispose of the resulting produce. Such a commitment problem, however, can only exist if the short-term gain for the household head when deviating from cooperation (reneging on the promise to reward workers for their efforts on the collective field) exceeds the long-term flow of benefits ensuing from a smooth relationship between him and the working members. As Fafchamps himself admits, this condition is restrictive since the game played within the family is by definition of a long (and indeterminate) duration, and the discount rate of future benefits typically low (future cooperation among close relatives matters a lot). Moreover, even assuming that Fafchamps' hypothesis is valid, it remains unclear why there should be a tendency over time for collective farms to transform themselves into mixed farms, as we seem to observe in reality.

Other authors have tried to explain the coexistence of collective fields and individual plots in agricultural farms, yet they explicitly refer to agricultural producer cooperatives or quasi-feudal set-ups rather than extended family farms. Regarding producer cooperatives, emphasis is typically put on the existence of economies of scale for certain types of activities, or on the need for insurance and the role of income-pooling (Chayanov 1991; Swain 1985; Putterman 1983, 1985, 1987, 1989; Putterman and DiGiorgio 1985; Carter 1987; Meyer 1989). Interestingly, the latter argument has been recently extended to the family context by Delpierre et al. (2013). As in Carter (1987), the analysis focuses on a trade-off between efficiency and insurance considerations. The trade-off arises because working in common on a collective field and distributing the output equally among participant members insures them against idiosyncratic risks, but joint farming also entails efficiency losses owing to the moral-hazard-in-team problem (itself caused by the impossibility to measure individual contributions and reward them accordingly). Unlike in Carter, however, Delpierre et al. assumed that family members may make reciprocal transfers between themselves for the purpose of smoothing idiosyncratic variations in income. In spite of that generous assumption in favor of complete individualization, they show that the optimum may correspond to the mixed farm regime, where a collective field subsists.

As for relationships between estate owners and workers, limited liability constraints and the demand for insurance are the main motives prompting the adoption of the mixed farm structure. The idea behind the first explanation (Sadoulet 1992) is that landlords worry about the possibility that their tenants are unable to pay the entire amount of their land rents or shares because of a wealth constraint. Awarding them a private plot under a labor exchange arrangement—the landlord combines direct cultivation with the help of wage workers on a portion of his property and the distribution of individual plots for private use on the remaining portion of the estate—is the best way for the landlords to solve the dilemma between reducing the rent charged to lower the occurrence of default and increasing it to capture the full surplus that the tenant can obtain from utilizing his family labor. This labor–service contract (the exchange of free labor for use on the landlord's field against free access to a private plot of land for personal use by the tenant), indeed, enables the landlord to impose an optimal level of insurance and, thus, efficient resource use on the tenant.[2]

Another justification for the same system, proposed by Allen (1984), lies in risk considerations: the labor exchange arrangement is equivalent to a sharecropping contract that would be applied to the whole farm area and may

therefore be motivated by risk sharing. Yet, underlying Allen's argument is the restrictive assumption that labor effort on the estate owner's field can be monitored at no cost. If monitoring is imperfect, the equivalence result does not hold anymore: granting sharecropping contracts to risk-averse tenants on the whole estate domain is more efficient than a system in which individual plots coexist with the landlord's field. As a result, the functional equivalent of the collective sector in a producer cooperative may not come into existence.

Let us now turn to the strand of theories purporting to explain farm break-ups. One of the key references here is Foster and Rosenzweig (2002).[3] The main intuition of the authors is that an extended family may decide to split if the benefit of sharing public goods by co-residing is smaller than the loss of efficiency due to decreasing returns to scale in production. The trade-off is therefore between advantages in joint consumption and efficiency in production. If this line is followed, we can detect two different ways to explain the increasing incidence of individual farms: (i) growing disinterest of younger generations in the sort of public goods jointly produced and consumed on the collective farm, and (ii) rising importance of decreasing returns to scale as a result of the shift to more land-intensive agricultural techniques.

Clearly related to the latter proposition is the work of Boserup (1965), who attributes the rise of peasant farms to growing land scarcity and the consequent intensification of agricultural techniques. The underlying argument has enjoyed a wide resonance among development economists who have helped express it in the language of modern information theory (Binswanger and Rosenzweig 1986; Binswanger and McIntire 1987; Pingali, Bigot, and Binswanger 1987; Binswanger, McIntire, and Udry 1989; Hayami and Otsuka 1993. It can be stated as follows. As land pressure increases, farmers are induced to shift to more intensive forms of land use, which implies that they adopt increasingly land-saving and labor-using techniques. An important characteristic of these techniques is that labor quality, which is costly to monitor, assumes growing importance. Given the incentive problems associated with care-intensive activities (sometimes labeled "management diseconomies of scale"), the small family or peasant farm in which a few co-workers (spouses and their children) are residual claimants appears as the most efficient farm structure.

Although Boserup's story is undeniably appealing, both theoretically and empirically, it cannot apparently account for situations in which evolution towards more individualized forms of family-cum-farm structures takes place in the absence of noticeable technical progress. Thus, in Russia during the seventeenth to nineteenth centuries, a shift from large and complex agricultural households (married brothers stay together at least till the death of the father) to smaller and more simple ones (married brothers part with each other while the father is still alive, but a household may remain multigenerational) occurred, a change which historians generally ascribe to the expansion of non-agricultural opportunities rather than to the adoption of new agricultural techniques (Worobec 1995; Moon 1999). In the old cotton zone of southern Mali (West Africa), collective farms appear to be increasingly replaced by mixed farms and small farms born of the break-up of large family farms, despite persisting technological stagnation (Guirkinger and Platteau 2014a). In addition, it is a striking feature of the countryside in Mali and other West African countries that when private plots coexist with a collective family field, household members continue to take their meals in common, and the preparation of the meals continues to be based on a rotation between women belonging to the different constituent households.

3 A More General Approach to Changing Family-cum-Farm Structures

3.1 Theory

Guirkinger and Platteau (2014b) have proposed a different theory to account for the gradual individualization of family-cum-farm structures, understood as the growing incidence of both private plots within mixed farming units and splitting of stem households into branch households. Like Boserup, they put primary emphasis on the role of changing land/labor ratios yet, unlike her, they do not refer to technological change as the key mechanism through which the influence of land pressure is being felt. Moreover, their explanation does not rely on the diminishing value of joint consumption, as their observations in West Africa indicate that individualization of big family farms in the form of private plots does not end the practice of common kitchens and collective meals. Finally, they do not need to allow for risk aversion to justify the existence of collective farms.

The central mechanism that operates in their framework relies on the existence of a strong patriarchal authority

inside the extended household. It is, indeed, because the household head does not act as a benevolent despot fully identified with the interests of the members that a trade-off arises between efficiency and rent capture considerations. When deciding whether to give private plots to members and how large they should be, the head weighs two factors. For one thing, production is more efficient on private plots than on the collective field where cultivation is plagued by the moral hazard-in-team problem. Since the head must ensure that family members agree to stay on the family farm while they have outside options available to them, awarding individual plots allows him to more easily satisfy their participation constraints. For another thing, because the head's income entirely comes from the produce obtained on the collective field owing to unenforceable transfers from the private plots, competition between the two types of plots for the allocation of work effort by the members is bound to cause a fall in the head's income. It is evident that, if transfers from private plots were enforceable by the head, he would earmark the whole family land for private use by individual members since he would thus maximize his own income (members are put at their reservation utilities). In other words, the head acting as a principal would maximize efficiency. It is clearly the non-enforceability of transfers from members to the head that cause efficiency losses.

There is another decision that the patriarch has to make, that is, whether to maintain the family and the farm whole (with or without private plots) or to allow a split of the stem household and the concomitant division of the family land. The extent of the split itself is to be decided since the number of (male) members authorized to leave may vary. In the case of a pre-mortem split, the total labor force available for work on the collective field decreases, which harms the patriarch, yet it is no more incumbent on him to provide for the needs of the departed members, which favors him. Depending on the relative importance of the various effects at work, he may prefer a mixed regime with private plots to the collective regime, or he may choose to split the family.

How does the family-cum-farm structure evolve when land becomes more scarce, or when outside opportunities improve for the members? The general answer provided by Guirkinger and Platteau is that if a change occurs it will be in the direction of increasing individualization. As land pressure increases (or as outside opportunities improve), the patriarch may decide to transform a collective farm into a mixed farm or into smaller independent units. The initial organizational form is always the collective farm, which is optimal when land is sufficiently abundant. Which individualized form will first succeed the collective one is a complex issue. The reason is that there actually exist many possibilities depending upon the number of (male) members authorized to leave, and upon whether private plots are granted to the remaining members when some of them have left with a portion of the family land. The precise sequence in which different forms succeed each other as land pressure increases is the following: collective farm; partial split with no private plots; mixed farm (private plots but no split); partial split with private plots.

Note that an important assumption underpinning the whole above framework is that adjustment to rising land pressure is easier to achieve through change in the family-cum-farm structure than through demographic change and fertility reduction, or through land markets. While fertility reduction requires a long-term horizon, land markets are highly imperfect owing to large transaction costs or because the fear of losing land prevents the supply side of the market from being activated (Basu 1986; Boucher et al. 2008; Platteau 2000: Chap. 4). In this context, any change in land allocation is the outcome of a decision regarding the organization of the family farm.

3.2 Evidence

In support of their theory, Guirkinger and Platteau (2014a) and Goetghebuer, Guirkinger, and Platteau (2014) have adduced three different pieces of evidence based on their fieldwork in central Mali.

3.2.1 Qualitative insights

The first type of evidence is made of qualitative insights obtained from open questions or semi-structured interviews with household heads and other family members. Some of these insights validate central assumptions on which the theory is built. First, questions aimed at unveiling the decision-making structure inside the household unambiguously point to a strong patriarchal authority. This is true not only with respect to land allocation (whether to award private plots or to let members leave the household with their rightful share of the family land), use of the household's farm implements on private plots and income distribution (the head distributes the proceeds from the collective field) but also with respect to authorization of credit if members want to borrow from an external source. Heads see themselves as acting on behalf of the family and responsible for its well-ordered functioning. They

assume that they would have to bear responsibility if a loan taken by a member were to be defaulted on, hence their perceived right to approve any loan taken by members. There is one domain, however, in which household heads admit that their power is limited. Revealingly, this is with respect to consumption choices made by children who have independent incomes (from private plots) and claim the right to spend them according to their own preferences.

Second, heads have often expressed concerns about their children's proclivity to think of their own interests instead of the general interest of the whole family and those of their parents. Concern has thus been explicitly voiced regarding allocation of work effort between private plots and the collective field when the former do exist: according to many patriarchs, household members do not do their best while working on the collective plots, thereby causing yields to fall. For example, one of them said that "more effort is applied to the individual plots and when members work on the collective plot, they are tired." Another one complained that when they work on the collective field, his sons "are prone to keep energy in reserve for their individual plots" ("*ils se réservent*") (Guirkinger and Platteau 2014a: 212). A lot of interviewed household heads also mentioned that a better quality of labor would increase the collective output.

A second type of insights comes in support of the conclusions reached by the theory. Thus, when queried about the reasons underlying the trend toward growing individualization, whether in the form of mixed farms or broken-up households, most heads pointed to increasing land pressure and consumption needs, particularly among the younger generations. As land becomes scarce, so the first argument runs, family heads find it increasingly difficult to provide for the subsistence of all their members from the collective fields. On the other hand, the main reasons given by the heads of branch households to explain why they themselves broke away from the stem household are rising land pressure in the stem household (34% of interpretable answers), and the eruption of conflicts within the family, most often involving their brothers or uncles (again 34%). Other reasons include low production in the stem household, and the existence of special needs that could not have been satisfied if the member had stayed with the whole family (expensive medicine to cure a wife, for example). Note that village or community-level conflicts, including intra-family disputes, are often caused by acute scarcity, real or anticipated, of available land assets (see André and Platteau 1998, for Rwanda, and Haugerud 1993: 162–176, for Kenya). There may thus be a significant overlap between the two dominant motives alleged to lie behind household splits.

3.2.2 Quantitative evidence 1: determinants of private land allocation

The first sort of quantitative evidence harnessed in support of the endowment-based theory is based on an econometric model attempting to highlight household characteristics responsible for the presence or absence of private plots (Guirkinger and Platteau 2014a). The estimated model is a simple probit model in which the dependent variable is interpreted as the probability to grant private plots to (male) members. In accordance with expectations, the results show that the household head is more likely to distribute private plots when land per man is lower and when the family is larger. Regarding the latter, the implication of the theory must be borne in mind: when the size of the workforce on the collective field is larger, the scope of the moral-hazard-in-team problem increases, which enhances the relative attractiveness of private plots where no efficiency problem arises. The two key explanatory variables—land availability and size of family workforce—have been instrumented with the help of historical data. In this way, the potential endogeneity of current land availability and household size—residential choices, and therefore household size, are likely to be directly influenced by land allocation—is taken care of.[4]

The second main result reached in the study of the determinants of private plot allocation was much less expected. When the family is decomposed into married men and other members, only the first category appears to have a significant influence on private plot allocation, and the effect is strongly significant. Moreover, the magnitude of the effect is far from negligible: thus, an increase of one unit in the number of married men increases the probability of individual plots by almost 10 percentage points. This result suggests that the standard moral-hazard-in-team argument needs to be refined. As usually stated, this argument implies that the magnitude of the efficiency loss increases with the number of team members considered as equivalent units. What the above shows is the assumption of an undifferentiated impact of group size is not applicable to the context of an extended or complex family.

Why is it that free riding on other members' efforts in collective cultivation is observed when several married men work together, and not when unmarried ones do? Two types of explanations come to mind here. First, being

strangers, daughters- or sisters-in-law tend to make the household more heterogeneous: they are not tied to the household by the same emotions and feelings of loyalty as their husbands. But the weakening of solidarity may also arise from the behavior of the sons or nephews if, once they get married, they tend to identify with their nuclear family more than with the extended family. As a result, they may not feel as loyal as before to the large household unit, thereby fostering feelings of competition and rivalry. Second, when the families of married men are of unequal size, the sharing rule is bound to look arbitrary to at least some couples. Thus, if the sharing rule provides for equal incomes to all married adults regardless of the size of their family, parents with more children feel discriminated. On the contrary, if shares are proportional to family size, parents with fewer children feel exploited because they work partly for the benefit of larger conjugal units. Interestingly, these two weaknesses of complex households are also stressed in anthropological and historical literature (see, for example, Worobec 1995: 81, for pre-Communist Russia).

It is striking that the aforementioned results continue to hold if what is explained is not the presence or absence of private plots but the share of the family land that is earmarked for individual cultivation. In particular, the stronger the land pressure or the smaller the land endowment of the household the larger the share of it that is allocated to private plots.

3.2.3 Quantitative evidence 2: comparing land productivities between collective and private plots

In another paper, Guirkinger and Platteau, together with Goetghebuer, have tested their theory through a different angle, that is, they have compared land productivity levels between collective fields and private plots (Goetghebuer et al. 2014). In other words, they have put to a quantitative test their assumption that effort is more efficiently applied to the latter than to the former. This is a tricky exercise since it requires that a variety of possible confounding factors (including variations in land quality, intensity of use of modern inputs, and crop choices) are well controlled for. When this is done, results prove to be in keeping with the theory: private plots are more productive than collective plots, and there is strong evidence that productivity differentials can be attributed to substantial variations in labor effort applied to cultivation.

The second finding deserves attention because it provides indirect support for the incentive-based mechanism behind the theory: the productivity advantage of private plots exists for care-intensive crops yet not for care-saving crops. Because of the minor role of labor quality in the production process of care-saving crops, these crops are less or not vulnerable to the moral-hazard-in-team problem. There is a third central finding, and it confirms the key role of household composition highlighted in the previous empirical study. It turns out, indeed, that inefficiency on the collective fields is more serious when there are more married men in the working team.

Finally, the study brings out an unconventional type of evidence that combines qualitative information with descriptive statistics. The idea is that something can be learned by relating the degree of strictness of time allocation rules laid down by the patriarch and the size or composition of the family workforce. The rules are ranked by decreasing order of severity: (i) male members are allowed to work only one or two day(s) a week on their individual plots; (ii) they may work before sunrise and after sunset, and sometimes also one day a week; and (iii) they may work five or six days a week, or whenever they want. The results bear out the hypothesis that rules are stricter when the number of participants in collective cultivation is higher and when there are more married men among them or the family workforce is more heterogeneous. The effect of heterogeneity is reflected in the finding that in horizontally extended families (with brothers of the head and nephews), the most severe time allocation rule is applied in a large majority of the cases (about 70%), while it is applied much less often in other types of families (in about 40% of the cases). Further confirmation is obtained if an index of family cohesion based on the Hamilton rule (the ratio of the Hamiltonian weighted sum of workers to the total number of workers) is used: the time allocation rule imposed by the head is significantly more severe when cohesion is lower.

4 Discussion

A deep historical approach to family systems brings to light a huge variety of complex forms and a dynamic that resembles anything but a linear path of transformation (see, e.g., Stone 1979; Goody 1983; Todd 2011). In the light of these scholarly works, economic theories of farm-cum-family structures and their transformation appear to be based upon an utterly mechanistic view of human societies and an outrageous simplification of their complex realities. This said, it must also be reckoned that despite the appearance economic theories do not necessarily

point to a simple, linear path of transformation.

The Guirkinger–Platteau theory shows that outside opportunities play a role analogue to that of land endowment: individualization of farm-cum-family forms is predicted to unfold both as outside opportunities improve and land pressure increases. Therefore, if land becomes more scarce while outside opportunities deteriorate (say, due to economic crisis or the closure of migration outlets), the two forces will work in opposite directions and, if the second effect dominates, more collective forms may emerge. It must be added that the main merit of theory building is that it brings a rigorous structure on a problem, implying in particular that the precise assumptions on which it is based are clearly spelt out. In the case of the same theory, the influence of land scarcity on the individualization of farm-cum-family forms ceases to operate if land and labor markets function relatively well, or if fertility behavior is adapted relatively quickly to the evolving factor endowments.

On the other hand, it is evident that a theory is misleading if it fails to grasp an important relationship or mechanism, and if it omits critical variables. Hence the necessity to put theories to serious empirical testing and to moreover check whether an alternative explanation might not account for the same outcome. One thing economists are not comfortable with is preference changes. Thus, one cannot rule out the possibility that individualization occurs as a result of the growing desire of younger generations to emancipate themselves from erstwhile patriarchal authority. It is revealing, in this respect, that patriarchs lament the growing consumption needs of the younger generation. In this eventuality, the transformative process is initiated by the pressure of household members rather than the decision of the head, which means that the former have somehow acquired strong bargaining power unconnected with their outside economic opportunities.

This hypothesis is not to be taken lightly even though one may argue that outside opportunities is the main driver of the members' ability to compel the head to take their viewpoint into account. It is not easily testable, though, owing to the difficulty to measure preference changes. One key issue, here, is that people may not reveal their true preferences in face-to-face interviews, especially because they may be reluctant to confess individualistic proclivities in a traditional environment permeated with collective norms and community- or family-centered values. Another problem arises from the fact that several processes—increasing land pressure, improving outside economic opportunities and associated risk diversification possibilities, and growing individualism of younger generations—may be at work simultaneously, thus making the task of disentangling them extremely arduous. It remains true, however, that in African cases of advanced individualization of farm-cum-family forms, such as in Rwanda, Burundi, Kenya (around Lake Victoria), Tanzania (Arusha area), and Malawi, where the small family farm is well established, land pressure seems to have played a major role. As a matter of fact, it is in regard of land endowments that other African areas which did not go as far on the way toward individualization mainly differ from the above countries or regions: population densities are markedly lower in less individualized areas.

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Notes:

([1]) Well-known examples are the *Hausa* and the *Songhaï-Zarma* in Niger and Mali, the *Bambara* in Mali, the *Wolof, Toucouleur* and *Soninké* in Senegal, the *Maures* in Mauritania, the *Tutsi-Hutu* in Rwanda-Burundi, the *Peul* aristocracy in Guinea, northern Nigeria, and northern Cameroon.`

([2]) Such a system has been widely observed, for example in the post-Carolingian manors of medieval Europe, in American plantations using slave labor and in Russian boyar estates using serf labor (Van Zanden 2009: 56, fn. 13; Blum 1957, 1961; Kolchin 1987), in feudal Japanese farms during the Tokugawa era (Smith 1959), or among estate landlords of Latin America, such as those employing Inquilino laborers in Chile after the middle of the eighteenth century (Bauer 1975; de Janvry 1981).

([3]) They do not allow for individual plots since in their framework co-residence implies collective farming only.

([4]) More precisely, endogeneity would be present if sons are prone to leave the family farm when no individual plots are awarded by their father. The absence of individual plots would then appear, spuriously, to arise from small families and land abundance.

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